Celtic Commercial Painting, LLC.

2024 Safety and Health Manual

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Company Safety Policy

The maintenance of a safe and healthy working environment is of great importance for the successful operations of this company. It is our policy that every employee, all property, and the general public are entitled to maximum protection from controllable hazards.

The welfare of people and the safety with which an operation can be carried out will be given higher consideration than product quality, cost, production, and the environment.

Our company believes that accidents and incidents can be avoided by utilizing common sense and personal initiative. It is the intent of this manual to emphasize the importance of company safety rules and regulations, as well as to serve as a source of reference.

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Jim Drynan
President

General Safety Rules and Responsibilities

1. Report any injuries, illnesses, accidents, and/or incidents to your supervisor the day of the occurrence.
2. Report any observed unsafe acts or conditions to your supervisor immediately.
3. Obey all safety signs and tags.
4. Employees should not perform tasks unless they are trained in the specific operation and aware of the hazards associated with the particular task, e.g., scaffold use, motorized equipment operation, and ladder use.
5. Always perform assigned tasks in a safe manner; do **not** take shortcuts.
6. When in doubt about performing a task safely, contact your supervisor for instruction and training.
7. Horseplay is prohibited at all times. Running is also prohibited.
8. The drinking of alcoholic beverages or use of controlled substances is not permitted during the work day at any jobsite. All employees shall be free from influence of alcohol or controlled substances. Employees discovered under the influence of alcohol or drugs will be subject to the Corrective Action Policy.
9. Smoking is prohibited within the vicinity of flammable materials. Smoking will only be allowed in designated areas. Also, check customer policy regarding smoking onsite.
10. Only qualified personnel who are trained in first aid shall be allowed to treat an injured person, unless there is immediate peril, such as lack of breathing.
11. Know where fire extinguishers and first aid kits are located.
12. Appropriate clothing shall be worn on the job at all times.
13. Hard hats shall be worn when overhead hazards exist or site-specific rules dictate.
14. ANSI Z87.1-approved eye protection shall be utilized when eye hazards are encountered, or when site-specific rules dictate.
15. Company-issued personal protective equipment should be available for use, worn when required, stored properly, and maintained in good condition.
16. Good housekeeping should be maintained in work areas at all times.
17. Never remove or bypass safety devices or guards.

18. Fall protection shall be required when performing work six (6) feet or more above a lower level. Fall protection shall be required when working on a scaffold more than ten (10) feet above lower levels.

19. Fall protection, e.g., full-body harness and lanyard, shall be worn when operating extendible and articulating boom platforms (aerial lifts).

20. Inspect all equipment prior to usage. Damaged or defective equipment should be removed from use and tagged for repair.

21. Make sure ladders are properly secured, tied off, and extended thirty-six (36) inches above the landing surface.

22. When ascending or descending a ladder, the employee should face the ladder and use three (3) points of contact at all times. Do not overload ladders. Be sure the ladder is placed in an area with an appropriate landing condition.

23. All open holes that are two (2) inches or more in their least dimension that are in a floor or a roof deck are to be covered or have proper protective guards or rails around them. Covers shall be secured and marked with the words “Hole” or “Cover,” or otherwise color-coded to warn employees of the hazard.

24. Keep alert; avoid situations where you or others are exposed to danger.

25. Obey all traffic regulations when operating vehicles on public highways.

26. When operating or riding in company vehicles, or using your personal vehicle for company purposes, the vehicle’s seatbelt shall be used.

27. Riders shall not be allowed on equipment unless a passenger seat is provided and the equipment is designed for such use.

28. Headsets, headphones, and MP3 players, or any other similar devices, shall not be used while working.

29. The use of hand-held electronic communication devices is prohibited while operating company vehicles, or while operating personal vehicles for company purposes.

30. Weapons shall not be allowed in the workplace.

31. Construction areas shall be illuminated to an intensity of not less than five (5) foot-candles.

32. Adequate natural or mechanical ventilation, or other effective engineering controls, shall be implemented so employees are not exposed to a hazardous atmosphere.

Note: Customer/site policies or procedures regarding safety and health issues may be more stringent and, where so, will control over the requirements found in the Celtic Commercial Painting, LLC. Safety and Health Manual.

Supervisor Safety Responsibilities

1. Is familiar with the safety rules in this manual and the regulations related to job activities the individual is responsible for.

2. Is responsible for implementing this manual and regulations related to job activities the individual is responsible for.

3. Assures that necessary safety equipment is in good operating condition and available for use.

4. Assures that a safe work environment exists and is maintained at all company jobsites; stops work until unsafe conditions are eliminated.

5. Assures that safety functions, such as equipment maintenance, project safety file maintenance, safety inspections, etc. are completed in a timely manner.

6. Provides feedback to company management regarding revisions/additional information needed in this manual to support company operations.

7. Administers disciplinary action immediately as required in accordance with this manual for safety violations.

8. Oversees execution of accident/incident notifications, investigations, evaluations and actions needed to prevent recurrence of the accident/incident.

Foreman Safety Responsibilities

1. Is familiar with the safety rules in this manual and the regulations related to job activities the individual is responsible for.

2. Is responsible for implementing this manual and regulations related to job activities the individual is responsible for.

3. Assures that necessary safety equipment is in good operating condition and available for use.

4. Assures that a safe work environment exists and is maintained at the jobsite; reports unsafe conditions to immediate supervisor. Stops work until unsafe conditions can be eliminated.

5. Confirms employees performing job tasks are trained and qualified to perform those tasks safely.

6. Performs site safety inspections on a regular basis and corrective actions as needed to eliminate unsafe conditions.

7. Provides feedback to company management regarding revisions/additional information needed in this manual to support company operations.

8. Administers and assures employee participation and signature sign-off for Toolbox Talks.

9. Completes accident investigation reports in accordance with this manual and submits same to immediate supervision on the same work day or beginning of the next work day when time does not allow for immediate completion.

10. Administers corrective action immediately as required in accordance with this manual for safety violations.

Employee Safety Responsibilities

1. Is familiar with the safety rules in this manual related to job activities the individual performs.

2. Performs work in a safe manner.

3. Assures that a safe work environment is maintained at the jobsite for work the individual performs. Stops work until unsafe conditions can be eliminated.

4. Participates in Toolbox Talks and other training as requested, asks questions on any items or topics not fully understood.

5. Acknowledges responsibility for personal, co-worker, and the general public's safety during job performance.

6. Protects tools and equipment entrusted to them from needless damage, loss, or theft. Reports damaged or lost tools to supervisor immediately.

7. Participates fully in company accident investigations when called upon to do so.

Job Competency

Purpose

The purpose of this program is to establish general job competency requirements. This procedure is a project-driven procedure that applies to company-specific projects.

General

Competence is a combination of knowledge, understanding, and skill. The following components are to be considered for each jobsite and/or worksite for competency assurance:

Experience Level of Knowledge Capability to Perform

Competency assurance involves the continuous assessment of training and development needs against an individual's responsibilities, abilities, and critical activities. This process enables a continuous improvement loop that feeds back into training and development activities, which ensures competency assurance is an ongoing career cycle process.

Competency is verified before employees are permitted to perform tasks independently. A competent person (supervisor, lead hand, instructor, etc.) must verify employees are competent to perform their roles and responsibilities before allowing them to work independently. If there is a site Short Service Employee (SSE) program established, the new or transferred employee will fall under the SSE requirements as well.

Identification of Documentation

Documentation is obtained from employees to demonstrate they meet the qualifications of their job. Based on the job description requirements, documentation may include education, certifications, licenses, prior acceptable training course completion, etc. Documentation is reviewed and confirmed as acceptable during the employee hiring process.

Identification of Positions

An organizational chart and list of job titles shall be established by Celtic Commercial Painting, LLC. based on the positions and their exposure to risk. This shall also include necessary trainings. Job descriptions are prepared for each job title.

Identification of Qualifications

Minimum qualification requirements for each job title shall be established by Celtic Commercial Painting, LLC.. Qualifications may include a combination of education, certifications, and work experience. Safety training completion for the indicated job title is required before full qualifications are met to allow an employee to begin work.

Identification of Training and Competency Needs

Employees (new or transferred) are provided job-specific training related to their roles and responsibilities and trained on the tasks they perform on a regular basis. Training is identified specific to safety and health as needed by job title. Celtic Commercial Painting, LLC.'s training requirements are updated based on changing risks.

Training Records

All training records are maintained on site either by Celtic Commercial Painting, LLC., senior representative of management, or their designee.

Delivery of Induction, Transfer, and Refresher Training

Employees receive initial induction training as a part of their orientation. No work by any employee is allowed to begin until the orientation is completed.

Training requirements shall be tracked by Celtic Commercial Painting, LLC., and formal training sessions are conducted either on- or off-site by a competent or qualified instructor for the required subject matter.

Supervisor Safety Management Training

Supervisors and managers shall receive annual, documented safety management system training.

Training Documentation

All training must be documented with the date, employee name, employee signature, instructor name, instructor signature, and title of course.

Subcontractor Safety

Purpose

The Subcontractor Safety Program is designed to protect Celtic Commercial Painting, LLC. and subcontractor employees, equipment, and facilities from injury, accident, or loss. Subcontractors are persons not directly employed by the company who provide specific labor or services.

As a condition of doing business with Celtic Commercial Painting, LLC.:

1. Pre-qualification of subcontractors shall include a review of their safety programs, trainings, and statistics in relation to the work to be performed. Safety metrics, such as TRIR, EMR, DART, and Fatality Rate are examples of items used as criteria in selecting a subcontractor.

2. Each subcontractor shall comply with at least the programs and policies contained in this Safety and Health Manual, as well as all Local, State, and Federal Standards and Requirements (OSHA, EPA, DOT, etc.). Each subcontractor is obligated to comply with all safety and health requirements.

3. Subcontractors shall be required to establish a project safety program. As a minimum, the program shall include the following: minimum compliance standards, methods to ensure compliance, and procedures to mitigate and eliminate hazards.

4. Each subcontractor shall designate and maintain an on-site competent supervisor to administer and coordinate safety issues.

5. Subcontractors will be included in pre-job meetings or kick-off meetings and safety orientations.

6. Subcontract personnel unable or unwilling to assure compliance with company safety rules and regulations will not be allowed to perform work on company projects.

7. Each subcontractor shall maintain accurate accident and injury reports and shall inform supervisory personnel in the event of an accident or incident.

8. Subcontractors shall, as a minimum, be required to conduct a weekly training meeting with all working personnel.

9. Subcontractors will be included in tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections.

10. Subcontractors shall be responsible for providing and requiring the use of necessary personal protective equipment.

11. Upon completion of a job, post-job safety performance reviews of Subcontractors shall be performed.

12. Each subcontractor shall be responsible for assuring the compliance of the above requirements with their subcontractors.

13. The items listed in this program do not include all programs that the subcontractor may need to provide a safe and healthy workplace and maintain compliance with OSHA standards, or any other Local, State, or Federal requirements.

Process Safety Management

Purpose

The purpose of this program is to comply with contractor requirements under the Process Safety Management Standard for General Industry (OSHA 29 CFR 1910.119). These guidelines are written for use while employees are performing work on, or are adjacent to, a process that is covered by the Process Safety Management Standard. The purpose of the standard is to prevent any catastrophic event or release that may result from work performed in a covered chemical process at an owner facility.

Program Responsibility

Celtic Commercial Painting, LLC.'s responsibility is to inquire as to whether an owner facility is covered under the Process Safety Management Program when bidding work at that facility. The program administrator will share the necessary company safety information/records with the owner facility. This information is used to evaluate safety performance when issuing work in a covered process area.

The program administrator has the responsibility to ensure that employees have received the appropriate safety training and process information necessary to safely perform their work. All contract employees must respect the confidentiality of trade secret information when the process safety information is released to them.

Employee Training

Affected employees working on or adjacent to a covered process are required to be trained in the following areas:

1. Affected employees are required to be trained in the known potential fire, explosion, or toxic release hazards. This will vary from each type of chemical facility that is covered under the Process Safety Management standard. This information will be obtained from the owner facility in order to provide affected employees appropriate training regarding these hazards.

2. Affected employees are required to be trained on the applicable provisions of the emergency action plan. This information will be obtained from the owner facility in order to provide affected employees appropriate training.

3. Employees must be trained in the work practices necessary to safely perform their job. The supervisor is responsible to ensure each employee follows the safety rules of the facility, including safe work practices that provide for the control of hazards during operations, such as lockout/tagout, confined space entry, opening process equipment or piping, and control over entrance to the facility.

All training will be documented. Documentation will include the employee name, date, and means used to verify understanding of the training.

Safe Work Practices Auditing

The supervisor will conduct routine audits to ensure all affected employees working on or adjacent to a covered process are following company safe work practices, owner facility requirements, and permit requirements.

Owner Facility Requirements

The program administrator will ensure all owner facility requirements regarding Process Safety Management are understood. Affected employees and work activities will follow the requirements set by the owner facility, as well as our safety requirements regarding the Process Safety Management standard.

Unique Hazard Reporting

Just as owner facilities have the responsibility to relay necessary information to our employees regarding process hazards, Celtic Commercial Painting, LLC. has the responsibility to inform the owner facility operations of any unique hazards that may be presented by our work on or adjacent to a covered process. In addition, any hazards found by our employees must be reported to the owner facility.

Much of this information is discussed between owner and contractor through a permitting system before the work is to begin for that day. A special meeting may also be scheduled with the owner facility operations and contractors to discuss the potential hazards of a specific task on or adjacent to a covered process.

All affected employees will be instructed as to their responsibility of reporting hazards to the owner facility.

Contract employees shall not perform hot work on or near a covered process until a hot work permit is obtained from the owner facility. The permit shall document that fire prevention and protection requirements have been implemented prior to beginning the hot work operations.

Employees must immediately report all accidents, injuries, and near misses. An incident investigation must be initiated within 48 hours. Resolutions and corrective actions must be documented, and incident investigation reports must be retained for 5 years.

Prime Contractor Responsibilities

When working as a prime contractor in a covered process area of an owner facility, we must evaluate our sub-contractors before awarding them work on a bid. Our screening process involves analyzing sub-contractor safety performance/statistics and safety program. We must also notify the owner facility of all sub-contractors that we will employ on a project.

Subcontractor Pre-Qualification Safety Questionnaire

Organization

Company Name: _____

Address: _____

Safety and Health Statistical Information

- Year (include 3 most recent) _____ _____ _____
- Interstate Experience Modification Rate _____ _____ _____
- No. of Employee Hours Worked in the Year _____ _____ _____

OSHA 300 Log Information:

- Number of Fatalities _____ _____ _____
- Number of Lost Workday Cases _____ _____ _____
- Number of Days Lost _____ _____ _____
- Number of OSHA Recordable Cases _____ _____ _____

Safety Program Information

- Does your organization have a written Safety Program? _____
- Does your organization have an employee Safety Training Program? _____

If yes, does it include the following:

Employee Safety Orientation:	Y / N	Incident Investigations:	Y / N
Injury Reporting/Management:	Y / N	Respiratory Protection:	Y / N
Process Safety Management:	Y / N	Lockout/Tagout:	Y / N
Personal Protective Equipment:	Y / N	Rigging Safety:	Y / N
Housekeeping:	Y / N	Electrical Safety:	Y / N
Fire Prevention/Protection:	Y / N	Substance Abuse:	Y / N
Hazard Communication:	Y / N	Confined Space Entry:	Y / N
Weekly Tool Box Talks:	Y / N	First Aid Procedures:	Y / N

Name of Your Safety Contact: _____

***Attach Copies of your OSHA 300 logs for the last three years.**

Completed by: _____ Date: _____

Return this form to:
Celtic Commercial Painting, LLC.

Safety Inspections

- Equipment, tools, and personal protective equipment should be inspected for defects and deficiencies prior to use. Defective equipment shall be tagged and removed from service.
- Evaluation of daily tasks should be conducted to ascertain any unsafe conditions or hazardous work operations that may be conducted.
- Action should only be implemented when proper corrections are known; notify your supervisor if the hazard is beyond your control.
- Inspections should highlight the following: personnel exposure to chemicals, personal protective equipment usage, material handling, housekeeping, fall prevention/protection, fire prevention/protection, etc.

General Guidelines

1. Be selective; look for specific items when conducting inspections.
2. Know what you are inspecting. Inspections should focus on known hazards and abnormal conditions. Practice observing actions and operations. Avoid becoming methodical or habit forming.
3. If in doubt, obtain additional assistance to verify findings.
4. Continue to report failures in compliance until they are corrected or discontinued.
5. Ensure that noted deficiencies are delivered to correct authoritative figures for compliance.

Inspection Forms

Designated company representatives shall perform jobsite inspections.

Jobsite Safety and Health Survey

Job Location: _____ Survey Date: _____

Job Foreman: _____ Surveyed By: _____

Fall Protection:
(01) Ladders
(02) Perimeter Guarding/Warning Lines
(03) Roof Openings/Skylights
(04) Mechanical Equipment
(05) Safety Monitor Designated/Competent

Fire Safety:
(06) Fire Extinguishers
(07) Propane Cylinders/Equipment
(08) Flammable Liquids/Material Storage

Electrical Safety:
(09) Power Lines
(10) Electrical Cords
(11) GFCI

Hand/Power Tool Safety:
(12) Maintenance/Storage
(13) Proper Use/Condition
(14) Machine Guarding

General Safety:
(15) Housekeeping
(16) Chemical Exposures
(17) Safety Data Sheets (SDS)
(18) Material Handling/Lifting
(19) Safe Activities/Conditions
(20) Signage/Barricades

PPE:
(21) Hard Hats
(22) Eye/Face/Respiratory
(23) Safety Shoes/Gloves
(24) Proper Clothing/Protection

Equipment Safety:
(25) Daily Inspections Performed
(26) Hoist/Slings Use/Condition
(27) Qualified Operators

Subcontractor Safety:
(28) Accountability
(29) Recordkeeping

Safety Talk: _____

Comments: _____

_____

_____

Recommendations: _____

_____

_____

_____

Distribution: Project Corporate Office Subcontractor

Hazard Assessment

Identification

Health and safety hazards shall be identified prior to commencing work and during work procedures through the use of regular site safety inspections, job hazard analyses, concerns addressed by management, supervisors, and other employees, as well as company- and industry-wide safety statistics. These techniques will be used for routine and non-routine activities, as well as processes, changes in operation, and products or services as applicable. All supervisors, employees, and sub-contractors shall be actively involved in the hazard identification process.

Classification

Once all known hazards have been identified, the hazards must be assessed in order to determine the level of risk of one or more of the potential incidents that may result from exposure. In order to do so, the hazards shall be classified based on probability and severity. Probability is defined as the likelihood that a certain given event or incident will occur, whereas, severity is defined as the degree of undesired consequences.

Probability can be broken up into five different categories:

1. **Frequent** – May occur very often.
2. **Likely** – May occur several times or be a common occurrence.
3. **Occasional** – Can occur sporadically, but is not uncommon.
4. **Seldom** – Is remotely possible, but could occur at some point in time. Usually several things must go wrong in order for it to happen.
5. **Unlikely** – Fairly likely that the incident will not occur.

Severity can be broken up into four different categories:

1. **Catastrophic** – Death or permanent, total disability may occur; complete project failure or the loss of ability to complete the project; loss of major critical systems or equipment; severe environmental damage; or unacceptable collateral damage.
2. **Critical** – Permanent, partial disability or temporary, total disability of employees; severely degraded project capability; extensive major damage to equipment or systems; significant property or environmental damage; and significant collateral damage.
3. **Marginal** – Lost work day injuries or illnesses, degraded project capabilities, minor damage to equipment or systems, or minor damage to the environment.

4. **Negligible** – First aid or minor medical treatment; little or no adverse impact on project capability; slight equipment or system damage, but fully functional or serviceable; little or no property or environmental damage.

E = Extremely High Risk H = High Risk M = Moderate Risk L = Low Risk		Probability				
		Frequent	Likely	Occasional	Seldom	Unlikely
Severity	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L

Once each hazard has been classified based on its probability and severity, the above matrix shall be used to determine the level of risk associated with it. Each hazard will be ranked into four different risk level categories: E, H, M, or L.

1. **E – Extremely High Risk** – Extremely dangerous and involve probable risk of serious injury or death.

2. **H – High Risk** – Pose a serious risk and are likely to occur.

3. **M – Moderate Risk** – Carry less possibility for serious injury and are less likely to occur.

4. **L – Low Risk** – Low risk and less probability.

Once all hazards have been identified and a risk assessment has been performed on each hazard, the matrix can be used to prioritize tasks and/or projects based on their level of risk. The hazards that are found to be Extremely High Risk (E) should be made high priority and reevaluated to determine if additional measures need to be implemented to minimize risk. Hazards found to be Low Risk (L), although not as immediately dangerous to life and/or health, should still be evaluated to determine control measures to minimize risk.

Following the Hazard Assessment/Classification process, Supervisors shall ensure that all identified hazards are properly addressed and mitigated considering the Hierarchy on controls below.

Hierarchy of Controls

The following methods, in order from most effective to least, shall be considered when determine control methods for risk associated with each task:

- Elimination: Physically remove the hazard at the source
- Substitution: Replace the hazard (i.e. using non-silica containing fiber board as opposed to silica containing fiber board)

- Engineering Controls: Introduce controls, such as, isolating people from the source of the hazard, or using wet methods during concrete cutting operations
- Administrative Controls: Change the way the work is done
- PPE: Utilize PPE as the last line of defense when the above controls are not feasible

Training

All employees shall be trained in the risk/hazard identification procedures.

Safety Training

1. Company-wide safety meetings will be held annually, and more often if determined to be necessary. Supervisor safety meetings will be held periodically throughout the year.

2. Employees shall be informed that they have the right to report work-related injuries and illnesses free from retaliation.

3. Employees will receive ongoing education by participating in weekly toolbox talks.

4. Safety meetings will provide information on hazard recognition/control, safety performance, and applicable safety and health standards.

5. Prior to start-up of work on new operations, a meeting shall be held to discuss the scope of work, unusual hazards associated with the work, if any, and any possible developments that may influence safety.

6. Safety meetings will be documented with a sign-in sheet, which will contain a list of participants, participant signatures, the date, and the topics addressed.

General Guidelines

1. Familiarize yourself with the work you will be observing.

2. Know what incidents occurred during the month. Review accidents, incidents, or near-miss reports.

3. Monitor and discuss progress on concerns from previous meetings.

4. Select a topic related to upcoming operations or procedures. Be clear on the major points being discussed.

5. Encourage feedback; spend time stimulating discussion during the meeting. Try to obtain possible solutions from the group concerning issues and hazards.

Specialized Topics

When warranted, at management discretion, select individual employees may be required to attend specialized training sessions in an effort to assure adequate safety knowledge and competency with respect to performance of required work tasks. These training sessions will be scheduled and repeated throughout the year as needed.

Specialized Training Areas:

- OSHA 10-hour Course
- Accident Investigation Procedures
- Safety Manual Policies and Procedures
    - Corrective Action Training
    - Accident Investigation Procedures
    - New Hire Orientation
- Fall Protection
- Ladder Safety
- Hazard Communication Policy
- Confined Space Entry Procedures
- Electrical Safety
- Lockout/Tagout Procedures
- Flagger/Barricade Safety
- Kettle and Tanker Safety
- Fire Prevention Safety
- Rigging/Hoisting Safety
- Crane Hand Signals
- Machine Guarding
- First Aid/CPR
- Emergency Response Procedures
- Personal Protective Equipment (PPE)
- Defensive Driving/Vehicle Safety

Participation Attendance Record

Date: _____

Topics Addressed: _____

Print Name	Sign Name

Instructor: _____

New Hire Orientation

1. New employees shall be briefed on all safety policies and requirements prior to beginning work.

2. Emphasis shall be placed upon such items as company attitude toward safety, use and maintenance of personal protective equipment, general safety, hazard recognition/reporting, and emergency procedures.

3. Each new employee shall receive training and guidance regarding the Hazard Communication Program.

4. Each employee shall be explained their rights and responsibilities regarding safety under the law.

5. New employees shall be shown how to perform their job in a safe manner. Initially, new employees shall be actively supervised to make certain that they can perform the assigned tasks safely and correctly.

New Hire Employee Orientation

Name of Employee: _____

Date of Hire: _____

Orientation Conducted By: _____

Reviewed:	**Yes**	**No**
1. Safety and Health Rules and Responsibilities	_____	_____
2. Accident/Incident Procedures (including Prevention)	_____	_____
3. Personal Protective Equipment Use and Maintenance	_____	_____
4. Electrical Safety		
a. Extension Cords	_____	_____
b. GFCIs	_____	_____
c. Power Lines	_____	_____
5. Fall Protection Program		
a. Competent Person	_____	_____
b. Warning Lines and Safety Monitor	_____	_____
c. Guardrails and Covers	_____	_____
d. Personal Fall Arrest Equipment	_____	_____
e. Ladders	_____	_____
f. Scaffolds and Aerial Lifts	_____	_____
6. Hazard Communication and Chemical Safety	_____	_____
7. Fire Prevention/Protection	_____	_____
8. Material Handling		
a. Manual Lifting	_____	_____
b. Hoists	_____	_____
c. Cranes and Rigging	_____	_____
d. Forklifts	_____	_____
9. Equipment Safety	_____	_____
Instructed Employee to:		
10. Ask for training if unfamiliar with operations/equipment	_____	_____
11. Report **any** unsafe conditions or acts	_____	_____

I acknowledge that the above items have been discussed with me and that I have reviewed the Company policies, programs and procedures listed above and attached.

_____ _____

Employee's Signature Trainer's Signature

_____ _____

Employee Name (Print) Date

Emergency Response and First Aid

General

- Prior to the project commencing, contact must be made with the nearest hospital emergency center and paramedic station to determine the proper procedures for handling emergencies and establish with authorities the project site location. Determine and record emergency information, and post emergency procedures with the hospital route diagram on the field office wall.
- Local hospital, ambulance/paramedic services, and physician telephone numbers shall be clearly posted to ensure the availability of medical personnel for advice, consultation, and medical service.
- A hospital diagram map showing the most direct route of travel to receive emergency care must be created. Note on the diagram any specific instructions or information that may be helpful or time saving. Post this information within a plastic sheet protector next to the first aid station.
- A first aid station must be created and placed within the Celtic Commercial Painting, LLC. jobsite office.
- In the event an infirmary, clinic, or hospital is not reasonably accessible in terms of time and distance to the jobsite, a person with valid certification in first aid training (acquired through the Red Cross or other equivalent training) will be available on the jobsite to render first aid medical treatment.
- All subcontractors must be kept informed of the location of first aid and medical facilities that are available and those procedures to be followed in the event of an injury or illness.

Emergency Response

1. Each supervisor shall maintain the following information prior to each job start-up:

    - Location and number (911) to the nearest hospital emergency room, fire department, and police department.
    - Develop floor plans or workplace maps that clearly show the emergency escape routes and safe or refuge areas should be included in the plan.
    - Job location and description, e.g., address.
    - Location and meeting area for employees after the incident.
    - Assignment of duties and training of all affected personnel.

2. During emergencies, an employee shall be designated to direct medical or emergency personnel.

3. The corporate office shall be notified as quickly as possible after an accident or incident.

4. Drills shall be conducted periodically to instruct employees on the proper means of evacuating the jobsite. Training shall be documented and include the following:

    - Emergency escape procedures and emergency escape route assignments,

- Procedures to be followed by employees who remain to perform (or shut down) critical plant operations before the plant is evacuated,
- Procedures to account for all employees after emergency evacuation has been completed,
- Rescue and medical duties for those employees who are to perform them,
- The preferred means for reporting fires and other emergencies, and
- Names or regular job titles of persons or departments to be contacted for further information or explanation of duties under the plan.

First Aid

1. All injuries, regardless of severity, shall be documented.

2. Supervisors shall be required to have available a first aid kit at each location. First Aid kits shall consist of appropriate items determined to be adequate for the environment in which they are used. Required equipment shall be determined before job start-up.

3. Contents of first aid kits shall be periodically assessed to ensure the availability of adequate first aid supplies.

4. Persons who encounter severe bleeding, loss of consciousness, trouble breathing, chest pain pressure, or has injuries to the head, neck, or back shall be removed from the jobsite and brought to an emergency facility.

5. When sending an employee to a doctor or hospital, a company representative must give proper authorization. An employee may not return to active work duty without a written doctor's release.

6. Supervisors shall be required to maintain arrangements for transportation of injured personnel from the jobsite.

Fire

1. Because of the danger associated, equipment required, and training required, Emergency Response Plans should not include fighting fires beyond the incipient stage (able to put out with a fire extinguisher), entering a facility on fire to conduct search and rescue, or providing advanced medical care or treatment. Those areas are best left to Emergency Response Professionals who have the skill, knowledge, training, and equipment required to control those events safely.

2. After it is established that there is a fire or explosion on the premises, management will be notified immediately and the fire alarm sounded. The evacuation alarm shall also be sounded.

3. Management will immediately initiate action, taking into consideration changes that might become necessary according to the situation.

4. Management will establish a command post outside the facility/jobsite.

5. Management will:

    - Direct emergency shutdown of utilities (power and gas).
    - Provide liaison with emergency response units.

Quick Drenching and Eye Flushing Facilities

1. When Required

    - Suitable facilities for quick drenching or flushing of the eyes and body must be provided within the work area for immediate emergency use when the eyes or body of any person may be exposed to injurious or corrosive substances.

2. Location of Facility

    - The location and distance of the emergency shower and/or eyewash facility from the employee shall be determined by the injurious or corrosive nature of the chemical(s).
        - The location of the shower and/or eyewash facility shall be on the same level as the hazard, easily accessible (no obstacles, closeable doorways, or turns), clearly marked, and well lit.

Tornados and Severe Storms

1. Definitions:

    - **Tornado Watch** – Be ready to take shelter. Tornadoes are likely.
    - **Tornado Warning** – Take shelter immediately. A tornado has been sighted in the area.

2. Management will:

    - Direct workers to designated storm shelter location or direct all workers to move from their workstation to along the nearest interior wall.
    - Assume the lowest position possible and protect the head area with arms.
    - After the threat has passed, initiate a head count and return to work.

Severe Weather

Severe weather can take many forms and have a significant impact on facilities, jobsites, and personnel. Thunderstorms, tornadoes, floods, lightning, hail, and wind are just some examples of severe weather that can have devastating consequences. The purpose of this program is to serve as a resourse for supervisors when developing site-specific emergency action plans.

Tornadoes

Tornadoes can occur with little or no warning. Tornadoes can occur anywhere and at any time during the year. In an average year, 800 tornadoes are reported throughout the nation. The most violent tornadoes may have wind speeds of 250 mph or more, and may last for more than an hour. Sometimes multiple tornadoes may occur at the same time. Tornadoes can appear rapidly, so it is important to be familiar with the signs in order to stay prepared.

Early warnings about a likely tornado can help save lives. Weather radar systems are used to detect air movement which could indicate that a tornado may be likely to form. Environmental clues may also suggest that a tornado is forming. Here are some signs to look for:

- Dark, often greenish clouds or sky
- Wall cloud
- Large hail
- Funnel cloud
- Roaring noise

Tornado Preparedness

Tornado Watch - Tornadoes are likely to occur in the watch area. Be ready to act quickly and take shelter, and check supply kits. Monitor radio and television stations for more information.

Tornado Warning - Imminent threat - A tornado has been sighted in the area or has been indicated by radar. Take shelter immediately.

In advance of such events:

- All supervisors shall ensure that Wireless Emergency Alert notifications are enabled on cellular phones.
- If applicable, check with the controlling contractor regarding site-specific emergency notification systems and designated shelter locations.
- Supervisors shall maintain a list of all employees on site and shall be familiar with their respective work locations during each shift.
- Ensure that a reliable method of communication is established and maintained.
- Identify shelter locations and evaluate their suitability on a regular basis as site conditions change.
- Maintain emergency supplies and ensure they are readily available.
- Establish procedures for securing materials on the jobsite.

Identifying Shelter Locations:

An underground area, such as a basement or storm cellar, provides the best protection from a tornado. If an underground shelter is unavailable, consider the following:

- Seek a small interior room or hallway on the lowest floor possible
- Stay away from doors, windows, and outside walls
- Stay in the center of the room, and avoid corners because they attract debris
- Rooms constructed with reinforced concrete, brick or block with no windows and a heavy concrete floor or roof system overhead
- Avoid auditoriums, cafeterias and gymnasiums that have flat, wide-span roofs.

Personnel should also be aware of what to do if caught outdoors when a tornado is threatening. Seek shelter in a basement or a sturdy building. If one is not within walking distance, try to drive in a vehicle, using a seat belt, to the nearest shelter. If flying debris is encountered while in a vehicle, consider the following options:

1. Staying in the vehicle with the seat belt on, keeping your head below the windows and covering it with your hands or a blanket,
2. If there is an area which is noticeably lower than the roadway, lie in that area and cover your head with your hands.

Avoid bridges and overpasses as they can become wind tunnels for debris. Traffic congestion is another concern. Too many cars crowded under a bridge or overpass can block traffic, including emergency vehicles.

Tornado Response

Once the tornado passes:

- Check workers for injuries. Don’t move anyone who is seriously injured unless they are in immediate danger of further injury. Instead, seek medical assistance right away. Begin CPR (if trained) on anyone who has stopped breathing.
- Conduct a head count. Report any employees that are unaccounted for to emergency personnel, including their last known locations.
- Check apps and other sources for additional emergency weather information.
- Proceed with caution through damaged areas, and watch out for hazards. Wear proper personal protective equipment when handling debris.
- Cooperate with emergency personnel.

Lightning

Lightning is a dangerous natural force. Annually in the United States, cloud-to-ground lightning occurs 20 to 25 million times and over 300 people are struck by lightning. During the past 30 years, about 50 people, on average, have been killed by lightning strikes every year, and many

more suffer permanent disabilities. Lightning is an occupational hazard. Workers whose jobs involve working outdoors in open spaces, on or near tall objects, or near explosives or conductive materials (e.g., metal) have significant exposure to lightning risks.

Many lightning victims are caught outside during a storm because they did not act promptly to get to a safe place, or they went back outside too soon after a storm had passed. If signs of approaching thunderstorms occur, workers should not begin any task they cannot quickly stop. Proper planning and safe practices can easily increase lightning safety when working outdoors.

In advance of such events:

- All supervisors shall ensure that Wireless Emergency Alert notifications are enabled on cellular phones.
- Identify shelter locations and evaluate their suitability on a regular basis as site conditions change.
- Prior to each work shift, check National Oceanic and Atmospheric Administration (NOAA) weather reports (weather.gov) and radio forecasts for all weather hazards.
- Reschedule jobs to avoid workers being caught outside in hazardous weather conditions.
- When working outdoors, employees shall continuously monitor weather conditions.
- Watch for darkening clouds and increasing wind speeds, which can indicate developing thunderstorms.

Shelter considerations

If you hear thunder, even a distant rumble, get to a safe place immediately. NOAA advises that nowhere outside is safe when thunderstorms are in the area.

Shelter in Buildings:

Seek fully enclosed buildings with electrical wiring and plumbing. Remain in the shelter for at least 30 minutes after hearing the last sound of thunder.

Vehicles as Shelter:

If safe building structures are not accessible, employees should shelter in hard-topped metal vehicles with rolled up windows. Remain in the vehicle for at least 30 minutes after hearing the last sound of thunder.

Phone Safety: After hearing thunder, do not use corded phones, except in an emergency. Cell phones and cordless phones may be used safely.

If caught outside in a thunderstorm:

If you find yourself caught outside during a thunderstorm, there may be nothing you can do to prevent being struck by lightning. There simply is no safe place outside in a thunderstorm. This

is why it is very important to get to a safe place at the first signs of a thunderstorm. To decrease the risk of being struck if you are caught outside, do to the following:

- Lightning is likely to strike the tallest objects in a given area; do not be the tallest object.
- Avoid isolated tall trees, hilltops, utility poles, cell phone towers, cranes, large equipment, ladders, scaffolding, or rooftops.
- Avoid open areas, such as fields. Never lie flat on the ground.
- Retreat to dense areas of smaller trees that are surrounded by larger trees, or retreat to lowlying areas (e.g., valleys, ditches) but watch for flooding.
- Avoid water, and immediately get out of and away from bodies of water (e.g., pools, lakes).
- Avoid wiring, plumbing, and fencing. Lightning can travel long distances through metal, which is an excellent conductor of electricity. Stay away from all metal objects, equipment, and surfaces that can conduct electricity.
- Do not shelter in sheds, pavilions, tents, or covered porches as they do not provide adequate protection from lightning.
- Seek fully-enclosed, substantial buildings with wiring and plumbing. In modern buildings, the interior wiring and plumbing will act as an earth ground. A building is a safe shelter as long as you are not in contact with anything that can conduct electricity (e.g., electrical equipment or cords, plumbing fixtures, corded phones). Do not lean against concrete walls or floors (which may have metal bars inside).

High Wind

Wind is a significant hazard when working in an outdoor environment, or otherwise exposed to hazards created by high wind events. OSHA defines “high wind” as a wind of such velocity that one or more of the following hazards would be present:

1. The wind could blow an employee from an elevated location,
2. The wind could cause an employee or equipment handling material to lose control of the material, or
3. The wind would expose an employee to other hazards not controlled by the standard involved.

OSHA normally considers winds exceeding 40 miles per hour, or 30 miles per hour if the work involves material handling, as meeting this criteria, unless the employer takes precautions to protect employees from the hazardous effects of the wind. Wind at lower velocities is also hazardous depending on the work tasks and conditions, and some manufacturers of equipment, such as cranes, scaffolds, and elevating work platforms, may have restrictions and limitations that must be followed.

Examples of wind-related incidents include, but are not limited to:

- Strains and sprain due to wind forcefully pulling doors from the worker’s hands
- Struck-by incidents due to objects being blown around

- Slips, falls, and trips due to workers reacting to a falling hardhat or object due to the wind blowing these items over
- Workers being blown off of elevated surfaces
- Eye injuries due to small particles of flying debris and dust
- Dropped loads while completing lifts with wind present
- Objects falling from elevated surfaces
- Equipment tip-over
- Unplanned movement of overhead power lines

Preparations

- Check weather reports and monitor conditions continuously
- Evaluate the work site for potential hazards due to high winds and plan the work to eliminate or limit the hazards
- Do not schedule work at elevated locations on days when high winds are in the forecast
- Secure materials from displacement, especially in locations vulnerable to the wind
- Ensure that scaffolding and other temporary structures are secure and cannot be blown over

During High Winds

In the event work is performed during windy conditions:

- Avoid work on scaffoldings, roofs, or other elevations during strong winds.
- Ensure that tools are packed away safely and that stored materials, cones, signage, and other loose materials are safely secured.
- Wear eye protection (such as goggles, or foam-lined safety glasses) to keep dust, debris, and other foreign particles from blowing into the eyes.
- Ensure hard hats are securely fastened and can not be blown off your head.
- Avoid picking up pieces of plywood or similar flat materials that can fly through the air, or can act like a sail and push or pull a worker off of an elevated surface.
- Tag lines should be used when hoisting loads; avoid hoisting lightweight materials and materials with large flat surfaces during windy conditions
- Do not operate hoisting equipment in high winds without approval from your supervisor.
- Cease all crane operations until wind speeds return to acceptable levels.
- Follow manufacturer specifications when using equipment such as cranes and elevated work platforms.

If you are driving:

- Keep both hands on the wheel and slow down.
- Watch for objects blowing across the roadway and into your path.
- Keep a safe distance from cars in adjacent lanes as strong gusts could push a car outside its lane of travel.

- Take extra care in a high-profile vehicle such as a truck, van, SUV, or when towing a trailer, as these are more prone to be pushed or even flipped by high wind gusts.
- If winds are severe enough to preven safe driving, get onto the shoulder of the road and stop, making sure you are away from trees or other tall objects that could fall onto your vehicle. Stay in the car and turn on the hazard lights until the wind subsides.

If you encounter a downed power line:

- Call for help. Report downed power lines to your local utlity emergency center and to the police.
- Do not try to free lines or remove debris yourself.
- Avoid anything that may be touching the downed lines, including vehicles or tree branches. Puddles and even wet or snow-covered ground can conduct electricity in some cases. Warn others to stay away.
- If you see someone who has been shocked who may be in direct or indirect contact with a power line, do not try to touch them. You may become a second victim. Get medical attention as quickly as possible by calling 911.
- If a line falls on your car, stay inside the vehicle. Take care not to touch any of the metal frame of your vehicle. Honk your horn, roll down the window, and warn anyone who may approach of the danger. Ask someone to call the police. Do not exit the car, unless it catches on fire. If there is a fire or other emergency and you must get out:
    - Remove loose items of clothing
    - Open the door but do not step out. Jump, without touching any of the metal portions of the car's exterior, landing with both feet together. Know your limitations, do not jump so far that you lose your balance. Jump clear of the car landing with both feet together, so that you are not touching the car when your feet hit the ground
    - Hop, or shuffe away with feet close together and without picking up your feet, until you are at least 30 feet away from the car.

Night Working Conditions

Preparing Your Work Zone

When performing night work, it's important to survey the area during the day first. Establish the boundaries of your work zone. Take note of all potential areas of risk, uneven terrain, utilities, and make detailed notes. Mark and flag the jobsite before work begins. Seeing the site's surroundings and any potential hazards in the daylight will help you and your team avoid potential risks at night.

The following controls may be utilized in configuring a safe night work area:

- **Cones** – can be used to divert traffic and can be moved around the sites easily
- **Barricades** – can divert traffic and provide a safe barrier between traffic and workers
- **Delineators** – can be used to guide traffic through a work zone, mark the edge of the job site, or draw attention to the presence of workers
- **Reflective Signs** – all these safety measures work in conjunction with reflective signage; all signs engaged at night should be reflective for maximum visibility

Change Your Sleep Schedule

For individual workers, preparing to work at night—whether temporary or permanent—usually requires modifying sleep schedules. Switching to the night shift and sleeping during the day can be a difficult transition; workers must ensure they are getting enough rest in order to be alert and rested while working at night. Most people invest in some good room-darkening shades to help them sleep during the day. ***Either way, sleep needs to happen***. Working while drowsy is hazardous to the crew and can increase the chance of accidents or errors.

Use Proper Lighting

Probably the most important equipment for working at night is lighting. Employees need adequate lighting to be able to do their jobs effectively, but without disruption to oncoming traffic or nearby property owners. If the work zone is stationary, luminaries may be mounted on poles. For more mobile work, light towers mounted to a highway-safe trailer can be repositioned as the work activity moves.

Common Lighting Solutions

Portable Light Towers

This lighting consists of numerous luminaires mounted to a mast arm that is capable of holding the luminaires at various mounting heights. The mast arm is attached to a trailer with a generator that can be towed by a vehicle.

Balloon Lighting

This type of lighting consists of a large balloon type luminaire that provides a fairly large area of evenly distributed light and is relatively glare-free. Balloon lights can be mounted on slow-moving equipment or portable light towers

Factory-Installed Lights on Equipment

Headlights installed on most equipment do not normally provide adequate lighting for most work operations and as a large component of glare should not be used when facing any oncoming traffic.

Personal Lighting

Certain tasks may even require workers to use personal lighting solutions. Wearable light sources offer hands-free mobility but lower power output, so they should be used as a supplemental light source. Personal lighting acts as an additional safety solution improving worker vision while illuminating the wearer.

Create a Lighting Plan

A competent person shall ensure that a lighting plan is in place before work begins. The plan shall be a part of the crew's daily JHA and shall identify:

- Type of work, size of job
- Work zone areas that need to be lit, and when they need light
- Best type of lighting for the project (this could change as the work progresses)
- Locations of where to position luminaries, light towers, and other light sources
- Best practices for minimizing glare (i.e., using blocking or shielding lights)

What to Wear at Night

Working at night presents different environmental challenges than daytime work. While the cooler temperatures are a benefit in summer, workers may need to wear increased clothing at night (e.g., long sleeves, jackets, rain gear at times) if working in colder temperatures. The competent person shall ensure that appropriate PPE is utilized by all employees.

Performance Class 2, 3, or E Hi Viz apparel shall be worn by employees working at night

- Class 2 – provides a higher amount of reflection to define the wearer more effectively
- Class 3 – provides greater visibility with a greater mix of complex backgrounds of retroreflective material through a full range of body movement
- Class E – represents garments with legs, like pants, coveralls, raingear, and includes gaiters

Minimum Night Work Lighting Requirements

The competent person shall ensure night work areas shall maintain sufficient lighting for the task. For areas or operations not covered below, refer to the American National Standard A11.1-1965, R1970, Practice for Industrial Lighting, for recommended values of illumination.

Foot-Candles	Area of Operation
5	General construction area lighting
5	Indoors: warehouses, corridors, hallways, and exitways
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10-foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading)
10	General construction plant and shops (e.g. batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts, and active store rooms, mess halls, and indoor toilets and work rooms)
30	First aid stations, infirmaries, and offices.

Accident Investigation and Reporting Forms

It is important that each accident be fully investigated to determine, not only the cause of the accident, but also the corrective action to be taken. Accident investigation serves as an analysis and account of an accident based on factual information gathered by thorough and conscientious examination of all factors involved.

Procedure

1. Accidents shall be reported within 24 hours of occurrence.

2. Each accident shall be investigated as soon as possible after occurrence. Statements from the injured employee and witnesses should be recorded as soon as practical. The scene of the accident should be appraised promptly prior to any alterations that might interfere with determinations of probable causes. Photographs should be taken from various angles and views to provide a complete "picture" of the accident scene.

3. Medical treatment, even for minor injuries, should never be delayed in order to question the injured. Personnel should not be questioned when in obvious pain or mental distress.

4. All available sources of information: the injured employee witnesses, the accident scene, and re-enactment, should be utilized.

Interviewing

1. Explain to the employee(s) that the purpose of the interview is to learn what occurred so that future accidents may be prevented. Never place blame.

2. Questions should be asked to establish: what the employee was doing, how they were doing it, and what exactly happened. Additionally, these questions should be asked during the interview:

    - When did it occur?
    - When do similar conditions occur?
    - Who was responsible for it?
    - Who can give answers?
    - Who should take corrective action?
    - How can it be corrected or avoided in the future?

3. Phrase questions so that the employee is required to give a descriptive answer, not a yes/no answer. Do not phrase questions so that the employee becomes defensive. Do not try to corner the individual, even when their version contradicts itself.

4. Close the interview by discussing how to prevent recurrence; have the employee offer suggestions.

5. No attempt should be made to write the accident report while interviewing.

6. When practical, interview at the scene of the accident, and never in a group.

7. If additional information is required, re-enacting the accident/incident should be performed without onlookers. In the demonstration, the employee should be warned not to repeat the unsafe act. The demonstration shall not be performed if unsafe conditions exist.

Reporting/Recording

1. All accidents shall be documented on the company accident report form.

2. Work-related injuries and illnesses shall be recorded on the OSHA 300 Log if the injury or illness results in:

    - Death,
    - Loss of consciousness,
    - Days away from work,
    - Restricted work activity or job transfer, or
    - Medical treatment beyond first aid.

3. Work-related injuries and illnesses shall also be recorded on the OSHA 300 Log if the injury or illness is significant as diagnosed by a physician or other licensed health care professional, or if it involves:

    - Cancer,
    - Chronic irreversible disease,
    - A fractured or cracked bone, or
    - A punctured eardrum.

Prevention of Recurrence

1. Evaluate and analyze all data, reports, and documentation to identify causes.

2. Take steps to implement procedures of prevention within scope of operations.

3. Maintain and monitor accident logs.

Employee's Report of Work-Related Injury

To be completed by the Employee. May be completed by a Supervisor if the Employee is unconscious. Must be completed and submitted to a Supervisor immediately following the incident. Provide specific details whenever possible; all sections must be completed. Use the back of these forms if additional space is needed.

Today's Date _____ Supervisor Name _____

Employee Name _____ Employee Title _____

Date of Birth _____ Date of Hire _____ Gender _____ Union _____

Home Address _____
Street Apt # City State Zip

Home Phone _____ Office Phone _____ Mobile _____

Personal Email Address _____ Work Email Address _____

Date of Injury _____ Time of Injury _____ AM PM

Date Injury was Reported _____ To Whom the Injury was Reported _____

Shop _____ Field _____ Warehouse _____ Office _____

Address of Injury Location _____
Street City State Zip

How long had you been at the location before the incident occurred? _____

Provide a DETAILED description of how the injury occurred; if necessary, use the back of this form. _____

_____

_____

_____

_____

_____

_____

What were you doing leading up to the injury? _____

_____

What job duties were being performed at the time of injury? Be specific. _____

_____

Describe the physical surroundings at the time of injury. Include a description of any conditions or circumstances that may have contributed to the injury and any corresponding warning signs that were in place (e.g., if floor was wet, was there a "Wet Floor" sign?). _____

_____

_____

Describe lighting where the injury occurred (e.g., indoor: bright, dim; outdoor: sunny, cloudy). _

_____

Describe the injury and body part that was injured. Be specific (e.g., right finger, left knee). Show injury and/or pain location on the diagram. _____

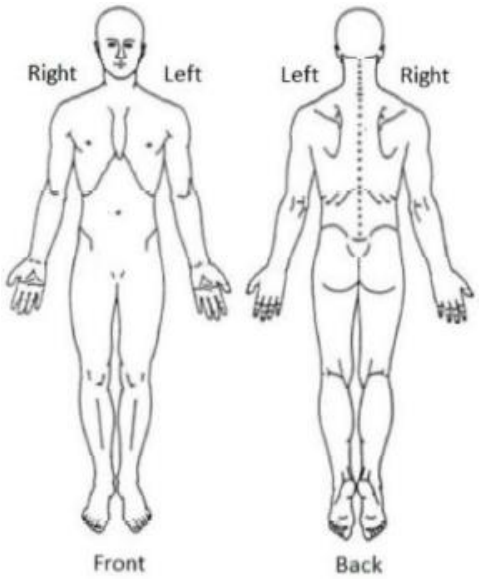
_____

_____

_____

_____

_____



Has this body part been injured before? Include physical conditions and previous medical procedures, including the name of the treating doctor. _____

_____

_____

Describe the clothing, shoes, eyewear, gloves, tool belt, etc. you were wearing at the time of the injury. _____

Identify any safety equipment or personal protective equipment that was being used at the time of the injury. _____

_____

Were you carrying or handling anything at the time of the injury? Be specific (size, weight, etc.).

_____

Who witnessed the incident (include all witnesses)? Provide first and last name, title, company, and phone number. _____

_____

What could have been done, by you or others, to avoid the injury? _____

_____

_____

What activities did you participate in (e.g., sports, activities, hobbies, etc.) prior to the injury? ___

_____

_____

What did you do after the incident occurred? _____

_____

What is the name, phone number, and address of your current primary care doctor and/or treating doctor? _____

Have you worked for any other employer in the last 12 months? If so, include the employer's name and dates of employment. _____

_____

Please read the following statement, and sign the acknowledgement following the statement.

I have read and understand all of the questions above. I understand that it is illegal to make a false claim for Workers' Compensation benefits. I understand that if I make a false claim or statement, I may be found guilty of a felony, subject to imprisonment, fined, and/or immediately terminated at the Company's discretion.

Print Employee Name	Employee Signature	Date

Authorization to release medical records to employer:

I hereby authorize you to furnish my employer, Celtic Commercial Painting, LLC., any and all medical records relating to the injury reported above, or to medical conditions aggravated by or re-injured in the accident reported above, including, but not limited to, x-rays, medical histories, nurses' notes, prescriptions, and copies of all hospital or medical records.

Print Employee Name	Employee Signature	Date

Refusal of Medical Treatment

To be completed by the Employee if medical treatment is refused. Must be submitted to the Workers Compensation Administrator within 24 hours of incident.

Employee's Name _____ Supervisor's Name _____

Date of Injury _____ Time of Injury _____ AM PM

Date Injury was Reported _____ To Whom the Injury was Reported _____

Address of Injury Location _____
Street City State Zip

Witness(es) _____

Nature of Injury/Condition _____

_____

Description of Injury/Body Part(s) Involved _____

_____

Brief Narrative Description of the Incident _____

_____

_____

I hereby acknowledge my refusal of medical treatment and/or observation offered to me at the expense of Celtic Commercial Painting, LLC. for the work-related injury I incurred on _____ _____. By signing this form, I realized I do not necessarily affect my later eligibility for Workers' Compensation.

I acknowledge that my supervisor(s), in good faith, have offered and made available to me an opportunity to seek necessary medical treatment and/or observation. I am aware that, by declining medical treatment at this time, my employer will not be responsible for any medical expenses or lost wages.

At a later time, I may request from my employer, via my supervisor, a medical authorization to obtain medical treatment and/or observation for the above described injury.

_____ _____ _____
Print Employee Name Employee Signature Date

Supervisor's Report of Work-Related Injury

To be completed by a Supervisor of Celtic Commercial Painting, LLC.. Must be submitted (along with Employee Report and all Witness Reports) to Human Resources immediately following the incident. Provide specific details whenever possible, all sections must be completed. Use the back of these forms if additional space is needed.

Today's Date _____ Injured Employee Name _____

Injured Employee Title _____

Employee Schedule _____ Days per Week _____ Hours per Day

Does the employee work varied shifts? Yes No

Supervisor Name _____ Supervisor Title _____

Home Address _____
Street Apt # City State Zip

Home Phone _____ Office Phone _____ Mobile _____

Date of Injury _____ Time of Injury _____ AM PM

Date Reported _____ Time of Report _____ AM PM

Shop _____ Field _____ Warehouse _____ Office _____

Address of Injury Location _____
Street City State Zip

Describe the nature of the injury and body part(s) involved; be specific (i.e., right middle finger was cut). _____

_____

_____

_____

_____

_____

Was on-site first aid administered? If so, explain what and by whom. If not, why not? _____

Did the injury require medical treatment from a clinic, physician, or hospital? If so, provide the name, address, and phone number of the physician/facility. _____

Who witnessed the incident (include all witnesses)? Provide first and last name, title, company, and phone number. _____

Provide a DETAILED description of how the injury occurred. If necessary; use the back of this form. _____

Were photographs taken of the scene of the injury and/or the injury itself? Yes No

If so, include them with the report or provide the contact information of the person in possession of the photographs. _____

If not, why? _____

_____

_____

Describe the physical surroundings at the time of injury. Include a description of any conditions or circumstances that may have contributed to the injury and any corresponding warning signs that were in place (e.g., floor was wet, was there a "Wet Floor" sign?). _____

_____

_____

Describe the mechanism that caused the injury (e.g., tripped, pinned, strike, slipped, etc.). _____

_____

_____

What object or substance directly harmed the injured party (e.g., concrete floor, radial arm saw)? Be specific. If relevant, has the object been sequestered? _____

_____

_____

Was any other person injured in addition to the injured party? If so, who (provide name and contact information) and detail about how they were injured. _____

_____

_____

_____

Identify any safety equipment or personal protective equipment being used at the time of the injury. _____

Was safety equipment or personal protective equipment required but not used? If so, explain. ___

What corrective action could have been taken (by the employee or others) to avoid the injury? ___

Are you aware of any prior injury claims made by the injured party? If so, please describe the date and circumstances of the prior injury. _____

Are there any job performance issues which the Workers Compensation Administrator should be aware of regarding this employee (e.g., new hire, disciplinary issues, multiple workplace injuries)? _____

Print Supervisor Name | Supervisor Signature | Date

Report to be reviewed by General Manager within seven (7) days of the incident.

Reviewed by General Manager _____, on _____.
General Manager Name Date

General Manager Comments: _____

Print General Manager Name | General Manager Signature | Date

Witness' Report of Work-Related Injury

To be completed by all witnesses. Must be completed and submitted to a Supervisor immediately following the incident. Provide specific details whenever possible; all sections must be completed. Use the back of these forms if additional space is needed.

Today's Date _____ Witness Name _____

Witness Company _____ Witness Title _____

Home Address _____
Street Apt # City State Zip

Home Phone _____ Office Phone _____ Mobile _____

Date of Injury _____ Time of Injury _____ AM PM

Shop _____ Field _____ Warehouse _____ Office _____

Address of Injury Location _____
Street City State Zip

Name of the person who was injured _____

What job duties/activities were you performing at the time you witnessed the injury? _____

_____

_____

_____

Provide a DETAILED description of what you witnessed; if necessary, use the back of this form.

_____

_____

_____

_____

_____

_____

What job duties were being performed at the time of injury? Be specific. _____

_____

_____

Describe the physical surroundings at the time of injury. Include a description of any conditions or circumstances that may have contributed to the injury and any corresponding warning signs that were in place (e.g., if floor was wet, was there a "Wet Floor" sign?). _____

_____

_____

Describe the injury and body part that was injured. Be specific (e.g., right finger, left knee). Show injury and/or pain location on the diagram. _____

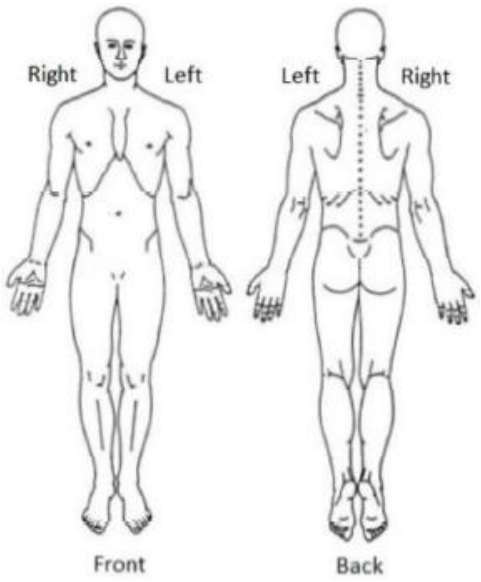
_____

_____

_____

_____

_____



Was the injured party carrying anything at the time of the injury? Be specific (i.e., size, weight). _

_____

Was the injured party distracted at the time of the injury? _____

_____

Identify any safety equipment or personal protective equipment being used at the time of the injury. _____

_____

Did anyone else witness the incident (include all witnesses)? Provide first and last name, title, company, and phone number. _____

_____

_____

What could have been done, by the injured party or others, to avoid the injury? _____

_____

_____

Print Witness Name	Witness Signature	Date

Utility and Property Damage Report Form

Job Number: _____ Foreman: _____ Date: _____

Report Prepared By: _____ Company You Work For: _____

Time and Place

Date of Occurrence: _____ Time: _____

Address: _____

On-Site Employees

Foreman: _____ Operator: _____

Other: _____

Witnesses

Gather names and addresses of eyewitnesses of the incident (i.e., locators, repairmen, and inspectors).

Name: _____ Address: _____ Phone: _____

Name: _____ Address: _____ Phone: _____

Name: _____ Address: _____ Phone: _____

Utility/Property Damage

Name of Owner/Utility: _____ Phone: _____

Owner's Address: _____

Describe Damage and How It Occurred: _____

_____

_____

_____

Was Damage Our Fault: Yes / No Explain: _____

_____

Photos Taken: Yes / No By Whom: _____

Was Utility Properly Marked: Yes / No

Underground Location Request Made: Yes / No DIG Number: _____

Job Start Date: _____

Please write any additional information on the back of this sheet.

Vehicle Incident Report

Note: All accidents involving a company vehicle must be immediately reported to the company and police. After reporting the accident, a Vehicle Incident Report must be completed.

Employee's Information

Name: _____ Date: _____ Time: _____

Phone: _____ Driver's License Number: _____ State: _____

Employee Injury Information

Were Any Employees Injured: Yes / No If Yes, Name: _____

Note: If Yes, you MUST fill out an Accident Report Form.

Were Medical Services Required: Yes / No If Yes, Where: _____

Employee's Vehicle Information

Name: _____ Owner's Address: _____

Number: _____ Year: _____ Make: _____ Model: _____

VIN Number: _____ Plate Number: _____ State: _____

Other Driver's Information

Was Another Driver/Vehicle Involved: Yes / No If Yes, Name: _____

Address: _____ Phone: _____

Driver's License Number: _____ State: _____

Other Driver's Injury Information

Was Other Driver Injured: Yes / No If Yes, Describe Injuries: _____

_____

Were Other Passengers in Other Vehicle: Yes / No If Yes, List Names and Describe Injuries: __

_____

_____

Other Driver's Vehicle Information

Other Driver/Vehicle Insured: Yes / No If Yes, Insurance Company: _____

Policy Number: _____ Policy Period: From: _____ To: _____

Make of Vehicle: _____ Model: _____ Year: _____

VIN Number: _____ Plate Number: _____ State: _____

Incident Information

Address of Incident: _____ County: _____

Detailed Description of the Vehicle Incident and Damage to All Vehicles Involved: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Conditions in Effect at Time of Incident (Weather, Traffic Volume, Etc.): _____

_____

_____

Driver's Activities at Time of Incident: _____

Name of Police Dept. Notified: _____

Officer's Name: _____ Badge Number: ____ Report Number: _____

Supervisor Notified: Yes / No Pictures Taken: Yes / No How Many Pictures: _____

Corrective Action

Recommended Corrective Action: _____

_____

Corrective Action Taken: Yes / No Testing: Yes / No

Name of Person Filling Out Report: _____

Signature: _____ Date: _____

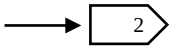
To Be Completed by Office

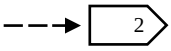
Insurance Carrier Notified: Yes / No Date: _____

Loss Amount OSHA 300 Log: _____

Instructions for Diagraming What Happened

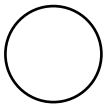
1. Follow dotted lines to draw outline of roadway at location of crash.
2. Number each vehicle and show direction of travel by arrow. 

3. Use solid line to show path before crash: 

4. Use dotted line to show path after crash: 

5. Show pedestrian by: 
6. Show railroad by: 
7. Show utility poles by: 
8. Show motorcycle by: 

Indicate North by Arrow:



Drugs, Alcohol, and Contraband

Policy Statement

Celtic Commercial Painting, LLC. seeks to prevent and ensure employees do not report to work or perform work while under the influence of illegal drugs or alcohol. The Company also seeks to protect the privacy right of our employees and provide employees with an opportunity to overcome dependence problems or other difficulties associated with the abuse of alcohol or illegal drug use.

Policy Objectives

Celtic Commercial Painting, LLC. has developed this policy regarding illegal and unauthorized drugs, alcohol, weapons, stolen property, and other contraband to meet the following objectives:

- To assist in maintaining a safe working environment for employees, customers, clients, contractors, sub-contractors, vendors, visitors, and invitees.
- To protect the property of Celtic Commercial Painting, LLC., employees, and our clients.
- To cooperate with contractors and customers in their efforts to contribute to a safe and efficient operations.
- To comply with existing laws.
- To comply with contractual obligations.

Company Premises Defined

- For the purposes of this policy, the term “Company Premises” herein includes all property, offices, facilities, land, buildings, automobiles, trucks, and all other vehicles and equipment, whether leased or owned.
- This policy also includes all customers’ properties, including parking lots or designated parking areas.

Prohibited Items

The use, bringing onto company premises, possession, concealment, transportation, promotion, or sale of the following substances and items by employees is strictly prohibited:

- Illegal drugs, unauthorized controlled substances, look-alike, designer and synthetic drugs, and any other abnormal substances that may affect employee’s senses, motor function, or alter a person’s perception while working.
- Alcoholic beverages (including “near beer”).
- Firearms, weapons, explosives, and ammunition.
- Stolen property of any kind.
- Drug paraphernalia.
- Holding of post work gatherings, which would involve the consumption of alcoholic beverages.

Note: Employees found in violation of the above prohibited items are subject to disciplinary action up to and including termination of employment.

Drug Testing Protocol

It is the protocol of Celtic Commercial Painting, LLC. to require employees to submit to third party drug screen testing under the following circumstances:

Pre-Employment

The following groups of prospective employees are required to submit to a Pre-Employment urine drug screen:

- All office personnel.
- All shop personnel.
- All sheet netal personnel.
- Journeymen roofers.
- Pre-apprentice roofers.
- Post-apprentice roofers.
- Any employee who shall hold a CDL for company purposes.

All employment offers are contingent on a "NEGATIVE" drug screen result.

All persons tested who receive a "POSITIVE" drug screen result shall not be given an employment offer and must wait a minimum of 1 year before he/she is allowed to re-apply.

There shall be **no** re-testing for any reason.

Reasonable Cause

- An employee may be subjected to alcohol and drug testing if there is reasonable cause to believe the employee has reported to work under the influence, is consuming alcohol or using illegal drugs while on the jobsite, parking lot, or company premises.
- Involvement in an accident of a job-related injury may constitute the requisite reasonable cause, but does not automatically do so.
- If an alcohol or drug test is given and it is later determined that the necessary reasonable cause did not exist at the time of the test, the results of the test shall be null and void, shall provide no basis for discipline or other action against the employee, and shall be removed in all respects from the employee's record.
- If testing shows the employee has a sufficient level of alcohol or illegal drugs, as defined later, to warrant further action, the following shall occur:
    - **First Offense** – The employee shall be permitted to enter into a rehabilitation program at his own expense. Upon proof of successful completion, he/she will be returned to their job or put on a preferential re-hire list.
        - Any employee permitted to enter into a rehabilitation program and chooses not to do so shall be subject to termination of employment.

  - **Second Offense** – The employee shall be subject to discharge.
  - **Post-Accident** – Employ shall be subject to discharge if intoxication or being under the influence of illegal drugs or alcohol was a contributing factor of the accident.
- If testing is performed and the results are negative, the employee shall be reinstated with all rights intact.
- If an employee refused to take an alcohol and drug test, and the requisite reasonable cause existed for ordering such a test, the employee shall be subject to discharge.
- An independent, accredited laboratory shall conduct all alcohol and drug testing. Initial testing may be by any recognized method, but any positive result, other than for alcohol, must be confirmed by the GC/MS procedure or by any other procedure then considered to be as accurate as the GC/MS. If the confirmation test is not positive, it shall be conclusively assumed that the initial result was erroneous.
- If an alcohol or drug test is performed, a separate urine or blood sample shall be made available, if desired, to the employee so he/she can arrange for a separate test at his or her own expense. All expenses of the testing performed on behalf of the Employer shall be borne solely by the Employer.
- All actions taken under this policy and program will be confidential and disclosed only to those with a "need to know."
- When a test is required, the specimen will be identified by code and the container will be properly labeled and made tamper proof. The donor must witness this procedure. The handling and transportation of each specimen will be properly documented through strict chain of custody procedures, and the Employer will have the burden of demonstrating that such procedures were followed.
- Employees using medication that may impair the performance on their job duties or that may register positive on an alcohol or drug test must inform the drug testing agency of such use. The Employer may consult with the employee, his/her physician, and other medical authorities, and may determine reassignment of job duties is necessary. If such reassignment is necessary, it will be made if possible, and, if not, the employee will be placed on a temporary medical leave.
- Employees are encouraged to seek help for an alcohol or drug problem before it becomes a disciplinary matter. If an employee voluntarily notifies the Employer that he/she may have a substance abuse problem, the employee will be permitted to enter an appropriate rehabilitation program. If the employee enters such a program, he/she will be considered to be on a voluntary medical leave of absence without pay and will be re-hired or placed on a preferential list upon successful completion of the program. An employee who has voluntarily entered such a program will be subject to no more than one (1) alcohol and drug test during the first year of work, except to the extent that all employees are subject to such testing under this clause.
- Drugs to be tested for and the minimum levels to constitute a positive reading are as follows:
  - Marijuana – 50 nanograms per milliliter
  - Cocaine – 300 nanograms per milliliter
  - Opiates – 300 nanograms per milliliter
  - Phencyclidine – 25 nanograms per milliliter
  - Amphetamines – 1,000 nanograms per milliliter

- Barbiturates – 300 nanograms per milliliter
- Benzodiazepines – 300 nanograms per milliliter
- Methadone – 300 nanograms per milliliter
- Met amphetamine – 1,000 nanograms per milliliter
- Tricyclic Antidepressants – 1,000 nanograms per milliliter
- Alcohol – 0.04 blood alcohol concentration

Contractual Drug Screening

- Notwithstanding any other provisions of this Drug, Alcohol, and Contraband policy, when Celtic Commercial Painting, LLC. is performing work on a job or site where the customer, general contractor, subcontractor, or other entity in authority requires employees to submit to drug or alcohol testing beyond what is normally required, Celtic Commercial Painting, LLC. shall require its employees to submit to such additional testing as a condition of employment on a particular job or site.
- An employee who does not wish to submit to such further testing will be barred from employment.
- If testing in this manner shows an employee has a sufficient level of illegal drugs or alcohol, the employee shall be subject to the same provisions as stated above in Reasonable Cause.

Substance Abuse

Celtic Commercial Painting, LLC. is committed to maintaining a drug-free workplace to promote both the quality of its services and safety of its employees, its customers, and the public. Every Celtic Commercial Painting, LLC. employee is subject to the rules issued in this Corrective Action Policy and shall follow the Policy as defined. Every Celtic Commercial Painting, LLC. employee:

1. Is prohibited from using, possessing, selling, purchasing, manufacturing, distributing, or transferring alcoholic beverages and/or controlled substances and/or other performance impairing substances while on duty and/or on Celtic Commercial Painting, LLC. property;

2. Is prohibited from being on Celtic Commercial Painting, LLC. property and/or reporting to work or performing work with a measurable amount of alcohol and/or controlled substance and/or performance impairing substance in his/her system;

3. Is prohibited from the consumption of alcohol within four hours of the employee's scheduled time to report for work, or within eight hours following an accident or until the employee takes a post-accident alcohol test, whichever occurs first;

4. Is required to submit to an alcohol and/or drug test when directed by Celtic Commercial Painting, LLC.;

5. Is prohibited from tampering (adulteration and/or substitution) or attempting to tamper with any alcohol and/or drug test and/or interfering with the testing/collection process;

6. Is required to notify his/her supervisor within five calendar days of any conviction for a drug related crime;

7. Is responsible for informing his/her physician when being prescribed medication(s) that he/she is covered under the terms of this Policy. The employee shall use medically authorized drugs and/or over-the-counter medications in a manner which will not impair job performance; and

8. Shall promptly report to his/her supervisor whenever he/she is prescribed and/or uses an over-the-counter medication that might cause job performance impairment.

Searches of employees and their personal effects, desks, work areas, lockers, and vehicles (while on Celtic Commercial Painting, LLC. property) may be conducted at such times and places as necessary to determine compliance with this Policy.

Violation of this Policy shall result in disciplinary action, up to and including termination, even for a first offense.

This testing program will be conducted in accordance with the standards of the U.S. Department of Transportation (DOT), 49 CFR Part 40, Procedures for Transportation.

Workplace Drug and Alcohol Testing Programs, except when those standards are in conflict with this Policy (e.g., drugs included for testing, use of testing devices that provide instantaneous results), or when not applicable to a non-DOT testing program (e.g., custody and control form used for specimen collection). 49 CFR Part 40 procedures, which will be applied to this testing program, include, but are not limited to, the use of a specimen collection/alcohol testing site with trained personnel, split specimen collection, use of a laboratory or Point of Collection Testing Devices and procedures mandated by the Department of Health and Human Services (DHHS or HHS), and use of a Medical Review Officer (MRO) to investigate all laboratory positives.

Celtic Commercial Painting, LLC. has adopted the following Policy regarding controlled substance use and alcohol misuse. Each Celtic Commercial Painting, LLC. employee shall read the Policy and must sign the Employee Acknowledgement Receipt of Abuse Policy and Consent to Search and agree to comply with the terms of the Substance Abuse Policy as a condition of continued employment.

Prohibited Conduct

Celtic Commercial Painting, LLC. strictly prohibits reporting to or being at work with a measurable amount of illegal drugs and/or alcohol in the body. The manufacture, distribution, dispensing, possession, sale, purchase, and/or use of drug paraphernalia, a prohibited controlled substance, and/or alcohol while on Celtic Commercial Painting, LLC. property or Celtic Commercial Painting, LLC. business is a violation of this Policy. Further, the unauthorized use or possession of prescription drugs or over-the-counter drugs while on Celtic Commercial Painting, LLC. property or Celtic Commercial Painting, LLC. business is a violation of the Policy. The use of any substance, which causes or tends to contribute to unacceptable work performance, is also prohibited.

The use of alcohol at Celtic Commercial Painting, LLC.-approved functions (i.e., business meals, employee gatherings, celebration events, cocktail hours at conferences, etc.) is acceptable if (1) the activity and/or an employee's involvement in an activity is pre-approved by Celtic Commercial Painting, LLC. management and (2) such consumption is done in moderation so as to protect the safety of the employee, fellow employees, clients, and public in general.

Illegal Drugs

The presence of a detectable amount (see table below) of an illegal drug(s) in an employee while performing Celtic Commercial Painting, LLC. business or while in a Celtic Commercial Painting, LLC. facility and/or on Celtic Commercial Painting, LLC. property is prohibited. Any employee who has a lab confirmed "positive" test for any of the foregoing drugs is in violation of this Policy, unless the employee demonstrates to the MRO a medical explanation for the presence of the drug(s) (in which case the MRO will rule the test result as "negative").

Celtic Commercial Painting, LLC. will test for nine controlled substances at the following levels:

Substance	EMIT Initial Test (ng/ML)	GCMS Test Confirmation (ng/ML)
Amphetamines	1000	500
Barbiturates	300	200
Benzodiazepines	300	200
Cannabinoids (Marijuana)	50	15
Cocaine	300	150
Methadone	300	200
Opiates (Heroin, etc.)	2000	2000
Morphine	2000	2000
Codiene	2000	2000
Phencyclinide (PCP)	25	25
Propoxyphene	300	200

Celtic Commercial Painting, LLC. reserves the right to alter the testing panel and threshold levels as substance usage and availability patterns suggest the need for change.

All specimens will also undergo validity testing. Validity testing is the evaluation of the specimen to determine if it is consistent with normal human urine. The purpose of validity testing is to determine whether certain adulterants or foreign substances were added to the urine, if the urine was diluted, or if the specimen was substituted.

Alcohol

Employees will be tested for alcohol with an alcohol-testing device listed on the National Highway Traffic Safety Administration's Conforming Products List. An alcohol concentration of 0.02 or greater will be considered a "positive" and is a violation of this Policy.

Disciplinary Action

Violation of this Policy shall result in disciplinary action, up to and including termination, even for a first offense, depending on the severity of the violation. However, it is the desire of Celtic Commercial Painting, LLC. that employees who have a controlled substance use and/or alcohol misuse problem get help for that problem, and thus those employees who have a positive drug and/or alcohol test result will, after successful completion of the evaluation and rehabilitation requirements, be given a second chance. A second positive drug and/or alcohol test result will be cause for immediate termination. A refusal to test (see "refuse to submit" in definitions) will result in immediate termination.

Searches

Celtic Commercial Painting, LLC. may conduct unannounced searches for illegal drugs, and/or drug paraphernalia and/or alcohol in Celtic Commercial Painting, LLC. facilities and/or on Celtic Commercial Painting, LLC. property. Entering Celtic Commercial Painting, LLC.'s property constitutes consent to searches. Employees are expected to cooperate in the conducting of such searches.

Searches of employees and their personal property, which includes, but is not limited to, lunch containers, brief cases, desks, work areas, lockers, and vehicles (while on Celtic Commercial Painting, LLC. property) may be conducted when there is reasonable cause to believe an employee is in violation of this Policy and/or when circumstances and/or workplace conditions justify them.

An employee's consent to a search is required as a condition of continued employment and the employee's refusal to consent shall result in immediate termination.

No employee will be touched as part of the search or detained without his/her consent. Employees being searched may be asked to empty pockets and remove hats and outer clothing, including jackets, coveralls, or slickers.

Drugs discovered on Celtic Commercial Painting, LLC. property will be turned over to the appropriate law enforcement agency. Any action taken by law enforcement agencies will be completely independent of this Policy.

Testing

General

1. Drug and alcohol testing will be performed by an independent drug/alcohol testing service. Employees will comply with all procedures and protocols established by the independent testing service.

2. Testing will consist of a minimum requirement of a nine (9) panel urine drug test and alcohol testing. The testing must be performed by a laboratory that is certified for Federal Workplace Drug Testing Programs by the Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services.

3. An employee's failure to submit to a drug and/or alcohol test or to comply with all procedures and protocols established by the independent testing service is a violation of this Policy and may result in discipline, up to and including termination.

4. A Medical Review Officer (MRO) will review the results of the drug testing process. The primary responsibility of the MRO is to review and interpret lab positive drug test results. It is important to remember that a positive laboratory test result does not automatically identify an employee/applicant as a user of prohibited drugs. The MRO must review lab positive drug test results and determine whether any legitimate alternative medical explanation could account for the positive result.

5. When an employee is notified to go to the collection site for a specimen collection and/or alcohol test, they will be allotted 30 minutes, plus reasonable travel time, to report in at the collection/testing site.

6. Employees must submit to pre-employment, random, reasonable cause, and post-accident drug and alcohol testing.

Drug and Alcohol Testing Will be Conducted in the Following Situations

Pre-Employment

All applicants will be required to submit to drug and/or alcohol testing. Celtic Commercial Painting, LLC. will withdraw the conditional offer of employment to any applicant who tests "positive" for the presence of a substance prohibited under this Policy.

Random (Where Permitted or Mandated by an Owner)

Random testing will be applicable to all employees of Celtic Commercial Painting, LLC.. A method of random selection will be administered by the independent testing service to ensure an employee is selected by chance. All employees will be in the random selection pool every time a drawing is made. No employee will be excluded merely because he/she has previously been randomly selected and tested. Random testing will be conducted at an annual rate of at least 50 percent for both drugs and alcohol. Celtic Commercial Painting, LLC. reserves the right to alter the random testing rate.

Post-Accident

When an employee's performance either contributed to an accident or cannot be completely discounted as a contributing factor to the accident, the employee will be required to submit to post-accident testing. An employee must submit to a post-accident drug and alcohol test as soon after an accident as possible, but no later than thirty-two hours after an accident for drugs and no later than eight hours for alcohol.

Nothing in this policy shall be construed to require the delay of necessary medical attention for injured persons following an accident or to prohibit an employee from leaving the scene of the accident for the period necessary to obtain assistance in responding to the accident, or to obtain necessary medical care.

Employees Seeking Medical Attention

Employees who require or seek medical attention beyond first aid, resulting from a workplace incident must submit to a post-accident drug and alcohol test as soon after an accident as possible, but no later than thirty-two hours after an accident for drugs and no later than eight hours for alcohol. Employees who test positive in a Qualitative Test shall be further required to submit to a Quantitative Test.

Reasonable Cause

An employee may be tested for drugs and/or alcohol when supervisors have reason to believe the employee may be in violation of this Policy. A decision to test will be generally based on two supervisors' evaluation of contemporaneous physical, behavioral, or performance factors, which

may cause the supervisors, in the exercise of their discretion, to suspect possible drug use and/or alcohol misuse. For instance, repeated errors on the job, rule violations, or unsatisfactory time and attendance patterns, or a specific contemporaneous event that indicates possible drug use and/or alcohol misuse, could provide a basis to test an employee. Alcohol testing may be conducted based solely on breath or body odor detected by one supervisor.

In all cases of reasonable cause testing, Celtic Commercial Painting, LLC. shall provide transportation to and from the collection/testing site, as well as to the employee's place of residence or other mutually agreeable location should the testing outcome be positive or unknown.

In the event the results are unknown in a reasonable cause testing situation, the employee will be temporarily suspended from duty with pay until the results are known.

Owner-Required Testing

From time to time, Celtic Commercial Painting, LLC. is required by an Owner or Project to test according to specific substance abuse testing requirements. Employees are subject to drug and/or alcohol testing as required by Owners or a Project. Such tests will be scheduled at the sole discretion of the "Owner" or project as required by the Owner or project. The "Owner or Project" discretion includes the determination of the scope for such testing (group of employees, department(s), facilities, etc.) in addition to the timing of such testing. Such testing shall include all employees of the named group. Additionally, such group of employees may include, but is not limited to, all employees on a jobsite at the time of testing or employees by shift and/or craft.

Post-Rehabilitation (Celtic Commercial Painting, LLC. Option)

Employees who have tested "positive" and been found in violation of this Policy, or who have "self-identified" as having a controlled substance and/or alcohol use problem, may be eligible to return to work or be considered for employment with Celtic Commercial Painting, LLC., if the individual can demonstrate successful compliance with a rehabilitation program and is certified by a Substance Abuse Professional. Any person, who is allowed to return to work after having tested "positive," in connection with this Policy, will be subject to a return-to-duty test and follow-up testing for a period of up to twenty-four (24) months. The length of time for post-rehabilitation drug and/or alcohol testing will be left to the discretion of a Substance Abuse Professional and Celtic Commercial Painting, LLC..

Testing of the Split Specimen

An employee or applicant whose drug test was reported as positive by the MRO may request a test of the split specimen, if the employee submits a written request to the MRO within seventy-two (72) after being made aware of the test results. The employee or applicant must pay for the cost of the split test. If the results of the split test are "negative," Celtic Commercial Painting, LLC. will reimburse the individual. The split test may be conducted at the same DHHS laboratory where the specimen was initially tested or at another DHHS certified laboratory. Selection of the laboratory will be determined by the MRO with input from the employee.

Employee Admission of Substance Abuse

1. Employees who admit to controlled substances use and/or alcohol misuse are subject to the referral, evaluation, and treatment requirements of this Policy, that is, evaluation by a Substance Abuse Professional, required treatment, follow-up testing, etc.

2. An employee is not permitted to self-identify in order to avoid testing under the requirements of this Policy.

3. An employee must make an admission of alcohol misuse or controlled substances use prior to reporting for duty.

4. The employee will not be permitted to return to work until Celtic Commercial Painting, LLC. is satisfied that the employee has been evaluated and has successfully completed education and/or treatment requirements as directed by a Substance Abuse Professional.

5. Prior to the employee returning to work, the employee shall undergo a return-to-duty test with a result indicating an alcohol concentration of less than 0.02 and/or a return-to-duty controlled substance test with a verified negative test result for controlled substances.

Cost

The cost of all testing, except the testing of the split specimen (see Testing of the Split Specimen section), will be paid for by Celtic Commercial Painting, LLC.. All cost associated with a SAP evaluation and required rehabilitation are the responsibility of the employee, unless covered by health and welfare benefits or company health insurance.

Confidentiality

Celtic Commercial Painting, LLC. will carry out this Substance Abuse Policy in a manner that respects the dignity and confidentiality of those involved.

Public Works

In addition to the requirements as set forth in the other sections of this Policy, the following additional items are set forth as requirements for work performed on a Public Works Project (820 ILCS 265) by the employer:

1. The Celtic Commercial Painting, LLC. Written Substance Abuse Program (i.e., this Policy) must be filed with the public body engaged in the construction of the public works and made available to the general public prior to commencing work on a public works project.

2. Celtic Commercial Painting, LLC. shall notify and immediately remove an employee from work on a public works project if any of the following occurs:

a. If an employee violates this Policy, tests positive for the presence of drugs or alcohol in his or her system, or refuses to submit to drug or alcohol testing as required under this Policy.
b. An officer or employee of the contracting agency, preferably one trained to recognize drug and alcohol abuse, has a reasonable suspicion that the employee is in violation of this Policy and requests the Employer to immediately remove the employee from work on the public works project for reasonable suspicion testing.

3. Celtic Commercial Painting, LLC. will notify employees who violates this Policy, who tests positive for the presence of drugs or alcohol in their system, or who refuses to submit to drug or alcohol testing, said employees are not permitted to perform work on a public works project until the employees meets the conditions specified below:

    a. That the employee has tested negative for the presence of drugs in his or her system and is not under the influence of alcohol, as described in this Policy.
    b. That the employee has been approved to commence or return to work on the public works project, in accordance with this Policy.
    c. That the employer has provided to the contracting agency for the public works project documentation evidencing (a) and (b) above.

4. An employee who is barred or removed from work on a public works project under this Policy may commence or return to work on the public works project upon his or her employer providing to the contracting agency documentation showing all of the following:

    a. The employee has tested negative for the presence of drugs in his or her system and is not under the influence of alcohol or drugs as described in this Policy.
    b. The employee has been approved to commence or return to work on the public works project, in accordance with the employer's substance abuse prevention program.
    c. Testing for the presence of drugs or alcohol in an employee’s system and the handling of test specimens was conducted in accordance with guidelines for laboratory testing procedures and chain-of-custody procedures established by the Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services.

5. Upon successfully completing a rehabilitation program, an employee shall be reinstated to his or her former employment status, if work for which he or she is qualified still exists.

Definitions

Words or phrases used in this Policy include the following:

Adulterated specimen means a specimen that contains a substance that is not expected to be present in human urine, or contains a substance expected to be present, but is at a concentration so high that it is not consistent with human urine.

Alcohol means the intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohol, including methyl and isopropyl alcohol.

Alcohol concentration (or content) means the alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath.

Alcohol use means the consumption of any beverage, mixture, or preparation, including any medication, containing alcohol. (Caution: Many cough medicines contain alcohol.)

CFR means Code of Federal Regulations.

Confirmation (or confirmatory) drug test means a second analytical procedure performed on a urine specimen to identify and quantify the presence of a specific drug or drug metabolite.

Confirmed drug test means a confirmation test result received by an MRO from a laboratory.

Dilute specimen means a specimen with creatinine and specific gravity values that are lower than expected for human urine.

Drug means any substance or chemical that has mind- or function-altering effects on the human body, including prescription and over-the-counter medications.

Drug paraphernalia means any item used for the administering, transferring, or snorting of a drug.

First aid means one-time, short-term treatment and requires little technology or training to administer. First aid can include cleaning minor cuts, scrapes, or scratches; treating a minor burn; applying bandages and dressings; the use of non-prescription medicine; draining blisters; removing debris from the eyes; massage; and drinking fluids to relieve heat stress.

Illegal drug means a controlled substance included in Schedule I or II, as defined by section 802(6) of Title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term “illegal drug” does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

Invalid drug test means the result of a drug test for a urine specimen that contains an unidentified adulterant or an unidentified interfering substance, has abnormal physical characteristics, or has an endogenous substance at an abnormal concentration that prevents the laboratory from completing or obtaining a valid drug test result.

Laboratory means a laboratory certified by HHS under the National Laboratory Certification Program as meeting the minimum standards of the HHS Mandatory Guidelines for Federal Workplace Drug Testing Programs.

Licensed medical practitioner means a person who is licensed, certified, and/or registered, in accordance with applicable federal, state, local, or foreign laws and regulations, to prescribe controlled substances and other drugs.

Medical treatment means the management and care of a patient to combat disease or disorder.

Medical Review Officer (MRO) means a licensed physician responsible for receiving laboratory results who is knowledgeable of controlled substance use. The MRO must have appropriate medical training to interpret and evaluate test results in conjunction with medical history and any other bio-medical information.

Possession means on one's person, in one's personal effects, in one's vehicle, or under one's control.

Primary specimen means the urine specimen bottle that is opened and tested by a first laboratory to determine whether the employee has a drug or drug metabolite in his or her system, and for the purpose of validity testing. The primary specimen is distinguished from the split specimen, defined in this section.

Refuse to submit (to an alcohol or controlled substances test) means an employee (or applicant):

1. Fails to appear for any test (except a pre-employment test) within a reasonable time (generally 30 minutes plus reasonable driving time after notification to go for a test), as determined by Celtic Commercial Painting, LLC. after being directed to do so by Celtic Commercial Painting, LLC.;

2. Fails to remain at the testing site until the testing process is complete. Fails to remain at the testing site for a pre-employment test occurs when an applicant leaves once the specimen collection kit has been opened;

3. Fails to provide a urine or breath specimen for any drug or alcohol test required by this Policy. An applicant who does not provide a urine specimen because he/she left the testing site before the testing process commences for a pre-employment test is not deemed to have refused to test;

4. Fails to provide a sufficient amount of urine or breath when directed, and it has been determined, through a required medical evaluation, that there was no adequate medical explanation for the failure;

5. Declines to submit a second specimen when directed to do so by Celtic Commercial Painting, LLC. or collector. A second urine specimen is required when the first specimen

is not within the acceptable temperature range. The second collection is by direct observation;

6. Fails to cooperate with any part of the testing process (e.g., refuses to empty pockets when so directed by the collector, behaves in a confrontational way that disrupts the collection process); or

7. Is reported by the MRO as having a verified adulterated or substituted test result.

Sale means any exchange, transfer, or sharing, whether for money or otherwise.

Screening test (or initial test) means:

1. In drug testing, a test to eliminate "negative" urine specimens from further analysis or to identify a specimen that requires additional testing for the presence of drugs, and

2. In alcohol testing, an analytical procedure to determine whether an employee may have a prohibited concentration of alcohol in a breath or saliva specimen.

Split specimen means a part of the urine specimen that is sent to a first laboratory and retained unopened, and which is transported to a second laboratory in the event the employee requests it be tested following a verified positive test of the primary specimen or a verified adulterated or substituted test result.

Substance Abuse Professional (SAP) means a person who evaluates employees who have violated the drug and alcohol Policy and makes recommendations concerning education, treatment, follow-up testing, and aftercare. Must be a licensed physician (Doctor of Medicine or Osteopathy); licensed or certified social worker; licensed or certified psychologist; licensed or certified employee assistance professional; or a drug and alcohol counselor certified by the National Association of Alcoholism and Drug Abuse Counselors Certification Commission (NAADAC) or by the International Certification Reciprocity Consortium/Alcohol and Other Drug Abuse (ICRC).

Substituted specimen means a specimen with creatinine and specific gravity values that are so diminished that they are not consistent with human urine.

Verified test means a drug test result or validity testing result from an HHS certified laboratory that has undergone review and final determination by the MRO.

Use means any form of consumption, ingestion, inhaling, or injecting.

Employee Acknowledgement Receipt of Abuse Policy and Consent to Search

I, the undersigned employee of Celtic Commercial Painting, LLC., hereby acknowledge:

I have received a copy of Celtic Commercial Painting, LLC. Substance Abuse Policy for review. I have had an opportunity to ask questions about the Substance Abuse Policy and understand the requirements of the Substance Abuse Policy.

I understand that, among other things, Celtic Commercial Painting, LLC. Substance Abuse Policy requires employees to submit to tests to be analyzed for the presence of unauthorized controlled substances and/or alcohol; the presence of a detectable trace of any unauthorized controlled substance and/or alcohol is grounds for disciplinary action up to and including termination of my employment; and my cooperation is voluntary, but that refusal to submit a specimen for testing is grounds for my termination.

I understand and consent to searches as outlined in the Searches section of the Abuse Policy.

I agree to comply with the terms of the Abuse Policy or any changes or amendments thereto and understand that noncompliance with the Abuse Policy shall result in disciplinary action up to and including termination.

Employee's Signature	Date
Print Employee's Name	Social Security Number

Return to Work

Overview

A Return to Work – Modified Duty program is for the benefit of the employee and the employer. Its purpose is to keep the employee in the working environment actively employed (receiving his/her normal rate of pay in a modified position) and contributing to the company's productivity. Placement in a modified duty position is not a permanent reassignment. The modified duty assignment will continue until the employee reaches Maximum Medical Improvement (MMI) or is released to return to his/her regular position by a physician.

Policy and Procedure

1. Once it is determined that an employee has sustained a work-related injury and the proper paperwork has been completed, the supervisor will determine if a modified duty job is available.

2. The injured employee must provide his/her supervisor a Fitness for Duty Medical Certification completed by the attending physician. This certification shall indicate whether or not the employee may return to work with restrictions, limitations, and the specified time period restrictions should be observed. The Fitness for Duty Medical Certification will assist the supervisor and Human Resources Department in placing the employee in a modified position.

3. Celtic Commercial Painting, LLC. will make every effort to return the employee in a modified duty assignment within the employee's regular work unit.

4. If applicable, local health care providers will be notified by the employer that the employer offers modified work to employees unable to perform regular duties.

5. The supervisor may communicate with Human Resources to clarify and obtain specifications on physical restrictions relative to job duties, responsibilities, work availability, and workload demands. This communication will assist Celtic Commercial Painting, LLC. in determining appropriate placement of the modified duty employee.

6. Any modified duty job assigned by the supervisor must adhere to the medical restrictions imposed by the Medical Certification.

7. A supervisor should limit his/her discussion of an employee's medical restrictions to the minimum amount necessary to reasonably inform co-workers of safety matters which may be affected by the employee's restrictions. A supervisor should not discuss the employee's medical treatment with any co-workers.

8. If it is determined that no modified duty jobs are available in the employee's regular unit, Human Resources will make the modified position assignment based on standard modified positions currently available.

9. It is not the responsibility of the employer to create modified duty jobs if they are not available. If there are no modified/light duty positions available, the employee will adhere to the Workers' Compensation Program without the option of modified duty.

10. If a modified job assignment is available, the offer will be made in writing to the employee outlining the new assignment and the duration.

11. Failure to report for work on the start date of modified duty, as written in the job offer, will be interpreted as a refusal of the offer.

12. If the employee refuses the modified duty job offer that is within the specified physical restrictions, Celtic Commercial Painting, LLC. is not obligated to provide alternatives. The employee may be subject to termination and/or cancellation of income benefits under Workers' Compensation Insurance.

13. Wages in a modified position may continue at the employee's current rate.

14. In the event that an employee's physician determines that the employee's injury/illness has resulted in permanent disability as defined in the American's with Disabilities Act (ADA), the employee should notify his/her supervisor and Human Resources. If there are other positions for which the employee is qualified and those positions are available, the Department of Human Resources will assist the employee in applying for those vacancies.

15. If there is no work for which the employee is qualified given the imposed restrictions, Human Resources will assist the employee in applying for Long Term Disability and any other programs the employee would be eligible to receive. At this point the employer/employee relationship would be terminated.

16. All employees shall be informed of the company's Return to Work (Modified Duty) Program. This can be handled via a safety meeting, Toolbox Talks, program review, during new hire orientation, or other means.

17. All documentation related to an incident shall be maintained by the employer.

Corrective Action

A successful safety program can only be obtained through the efforts and achievements of company personnel. To realize this end-all, personnel shall be subject to corrective action if violations are made against company safety standards and regulations.

1. Violation of safety rules shall result in the following penalties:

   1st violation: Verbal reprimand
   2nd violation: Written reprimand
   3rd violation: Unpaid Suspension or Termination

2. Typical corrective action pattern:

   - **Verbal Reprimand** – The employee shall be informed that he/she has committed a safety violation which, if repeated, will result in further corrective action. If the infraction continues, a formal written notice will be issued to the employee. Future violations will result in mandatory attendance at the next company Supplementary Safety Training Review Session.
   - **Written Reprimand** – A formal written notice will be issued to the employee. The employee will be notified that future violations will result in suspension or termination. Prior to written notification of suspension or termination, Celtic Commercial Painting, LLC. may use documentation of jobsite safety inspections to display a history of the infraction(s).
   - Employment shall be suspended, without pay, or terminated as a result of a serious safety violation or pattern of safety violations. Decision for type of action will be at the discretion of company management.

3. Whenever corrective action is administered, proper documentation of the action shall be taken. Documentation should include the date of occurrence, description of violation, location, time, and corrective action taken.

4. All corrective action documentation shall be filed in the employee's personnel record.

Note: All supervisors who receive corrective action may be required to attend a safe work practice review session, which the company will conduct on an as-needed basis. This training will be conducted in effort to further employee safety knowledge and raise employee safety awareness.

Note: While the company prefers to follow a step-by-step, progressive disciplinary policy, the company reserves the right to change disciplinary action at any step, including dismissal without warning if company management determines, in its judgement, that such action is appropriate.

Corrective Action Notice

Name: _____

Date: _____

Type of Corrective Action Taken:

1. Recorded Verbal Reprimand (___)
2. Written Reprimand (___)
3. Supplemental Safety Training Attendance (___) Date: _____
4. Suspension (___)
5. Termination (___)

Safety Violation: (Explain Details)

_____

_____

_____

_____

I have discussed the above cited reprimand with employee effective this date:

_____ _____
Employee Date

_____ _____
Supervisor Date

_____ _____
Celtic Commercial Painting, LLC. Mgmt. Date

Comments:

_____

_____

_____

_____

_____

OSHA Requirements and Inspections

General Requirements

1. The Supervisor shall notify the main office when OSHA personnel arrive onsite to conduct inspections.

2. First and foremost of importance, be polite and respectful.

3. Ask to see the compliance officer's credentials. Copy down all pertinent information concerning the nature of the inspection.

4. An opening conference shall be conducted prior to starting the inspection. During the opening conference, the compliance officer will explain the nature and purpose of the inspection, scope, and necessary records needed for review.

5. Notify the compliance officer that it is Celtic Commercial Painting, LLC. policy to have a safety representative accompany you on the inspection. The compliance officer will allow a reasonable amount of time to transpire, approximately forty-five minutes to an hour, before resuming the inspection. If the safety representative is not able to attend the inspection, the foreman shall act as the company representative.

6. When the compliance officer takes pictures, the safety representative shall also photograph the area of concern. Notes shall be taken throughout the entire inspection. Samples of materials taken by the compliance officer shall similarly be obtained and documented.

7. If personnel are asked questions, answers shall be given factually, without speculation, and without judgmental conjectures. However, the company reserves the right to have all employee interviews scheduled and have the employee properly prepared prior to the interview.

8. Document all corrective actions initiated during the inspection. Refrain from copying company documentation for the compliance officer. The main office will review documentation requests on a case-by-case basis.

9. The compliance officer outlining the unsafe or unhealthy conditions observed during the inspection will conduct a closing conference. However, due to time restraints, that closing conference may be held at a later time. Before the compliance officer leaves the project, question the individual as to whether they believe a citation will be issued. All information shall be recorded and sent to the corporate office upon completion of the closing conference.

10. Project site inspections by OSHA compliance officers are usually conducted without advance notice. There are some special circumstances under which OSHA may give notice prior to an inspection normally less than twenty-four (24) hours. These circumstances include the following:

- Imminent danger situations that require immediate correction.
- Inspections that must take place after regular business hours or require special preparation.
- Cases where notice is required to ensure Celtic Commercial Painting, LLC. and employee representatives or other requested personnel are present.
- Cases where an inspection must be delayed for more than five (5) working days when there is proper justification and due cause for the delay.
- Situations in which the OSHA area director determines advance notice would produce a more thorough or effective inspection.

11. If an employer refuses to admit an OSHA compliance officer or if an employer attempts to interfere with the inspection process, the act permits appropriate legal action by OSHA.

12. However, OSHA may not conduct warrantless inspections without the consent of the general contractor's project representative. The only exception being that certain federal government construction projects usually have within the contract documents a stipulation of unlimited jobsite access to federal government agencies. The compliance officer must only indicate his or her presence on the project.

13. OSHA may conduct an inspection after acquiring a judicially authorized search warrant based upon administrative probable cause or upon evidence of a violation. Court orders, if needed, can usually be obtained within thirty-six (36) hours.

14. The following is OSHA's established inspection priorities listed in order of their importance based on the fact that the worst situation is OSHA's first priority:

    - **Imminent Danger** – A condition where there is reasonable certainty that a dangerous condition exists that can be expected immediately to cause death or serious physical harm.
    - **Fatalities and Catastrophes** – Investigation of fatalities and those accidents that result in hospitalization of three (3) or more workers.

Note: Fatalities must be reported to OSHA within eight (8) hours. Any work-related in-patient hospitalization, amputation, or loss of an eye must be reported to OSHA within 24 hours.

- **Complaints/Referrals** – Alleged violations of standards or of unsafe or unhealthy working conditions. Complaints deemed serious will be investigated within 30 days of receipt. Complaints deemed non-serious will be investigated within 120 days.

Note: Employees filing a complaint have the right to request confidentiality.

- **Programmed Inspections** – Aimed at specific high hazard industries, occupations or health substances, or other industries identified in OSHA's current inspection procedures. Industries are selected for inspection on the basis of such factors as injury incidence rates, previous citation history, employee exposure to toxic substances, or random monthly listing of projects in each OSHA region using F.W. Dodge Reports.

- **Follow-up Inspections** – Used to determine if previously cited violations have been corrected.
- **Record Review** – An examination of an employer's injury and illness records (OSHA Form 300) to determine whether there will be a comprehensive inspection for Celtic Commercial Painting, LLC.'s workplace, based on the average lost workday injury record of Celtic Commercial Painting, LLC..

Pre-Inspection

1. OSHA compliance/inspection officers are expected to conduct their business affairs in a courteous and professional manner. Once on site, an OSHA compliance officer should display their official credentials and ask to meet the appropriate general contractor representative.

2. An opening conference will be organized by the compliance officer. All subcontractors on site will be required to have a representative at this conference. The compliance officer will explain why the project site was selected for inspection, the purpose of the visit, the scope of the inspection, and the standards that apply.

3. The general contractor and subcontractors will be asked to select an employer representative to accompany the compliance officer during the inspection. This person is usually the same individual who is selected to represent Celtic Commercial Painting, LLC. at the opening conference.

Inspection Process

1. Following the opening conference, the compliance officer will proceed through the jobsite to inspect work areas by observing safety and health conditions and practices; consult with employees; if necessary, take photographs and instrument readings; examine records; collect air samples; measure noise levels; survey existing engineering controls; and monitor jobsite employees' exposure to toxic fumes, gases, and dusts.

2. The route and duration of the inspection are determined by the compliance officer. Celtic Commercial Painting, LLC. and the subcontractor employees will be consulted during the inspection tour and may be talked to in private by the compliance officer. Although, the compliance officer should make every effort possible to minimize employee work interruption.

3. OSHA places special importance on hazard communication, electrical grounding, posting, and recordkeeping.

4. The compliance officer will ask for Hazard Communication Programs from those subcontractors on-site during the inspection day. These programs must contain a written, comprehensive Hazard Communication Program that contains provisions for hazardous material labeling, an employee training program, along with a list of hazardous materials and Safety Data Sheets.

5. Compliance officers will also ask to see a copy of the summary of injuries and illnesses report for the previous calendar year (OSHA Form 300A) and will look to see if OSHA safety and health posters are visible.

6. Violations detected by the compliance officer should be corrected immediately. The apparent violations, even though corrected, will still serve as the basis for a written citation and, if appropriate, a notification of proposed penalty.

Closing Conference

1. After the inspection tour, a closing conference is held with the compliance officer, general contractor representative, and the subcontractor representatives.

2. The compliance officer will discuss with all present the unsafe or unhealthy conditions observed during the inspection and will indicate all apparent violations for which a citation and a proposed penalty may be issued or recommended.

3. All employer representatives will be informed of their appeal rights, the OSHA procedures for processing apparent violations, and the OSHA conditions imposed on those employers who receive citations and notifications of proposed penalty by the compliance officer.

4. During the closing conference, it is recommended that all those subcontractors with apparent violations produce company records to show their previous compliance efforts.

5. Employers who receive citations must post a copy of each citation at or near the place where the violation occurred for three (3) days or until the violation is abated, whichever is longer.

Focused Inspections

1. Effective October 1, 1994, OSHA has initiated a program which allows its Compliance Safety and Health Officers (CSHOs) the option to perform a focused inspection in lieu of the standard comprehensive inspection. The purpose of this initiative is to reduce the time required to inspect compliant sites so more time may be spent identifying non-compliant sites.

2. The decision to perform a focused inspection is based on the following criteria. All programmed inspections will have an opening conference as described above. During and subsequent to the opening conference, the CSHO will determine whether or not the controlling contractor: a) has an effective safety program, and b) has a person responsible for and capable of implementing the program. If the controlling contractor meets **both** criterion, then a focused inspection will be made, which will include all subcontractors working on site. If either of the above criterion is not met, then a comprehensive inspection will be conducted.

3. Whether or not the controlling contractor meets the two above listed criteria for a focused inspection will be based on the following criteria: a) the comprehensiveness of the safety

program, b) the degree to which it is implemented, c) the presence of competent persons as are required by relevant standards i.e., excavation, scaffolding, confined entry, and d) the means by which the program is enforced.

4. Focused inspections shall concentrate primarily on the four groups of activities that account for the most fatalities and serious injuries in the construction industry: falls, electrical hazards, caught in/between hazards, and struck by hazards. During the course of any focused inspection, violations shall be proposed for any serious violations, whether part of the focused group or not. Other-than-serious violations abated in the presence of the CSHO will not be cited.

5. If, during the focused inspection, the CSHO determines that the numbers of serious and other than serious violations are excessive, the inspection can be expanded to a comprehensive inspection.

6. The requirements and procedures for the closing conference of a focused inspection remain as previously discussed.

7. Those employers who wish to contest a written citation and notification of proposed penalty, after it is received, must submit a written objection to the OSHA area director within fifteen (15) working days.

8. An informal meeting with the OSHA area director may be requested by any employer receiving a citation to discuss the case. The area director is authorized and may elect to enter into a settlement agreement that revises citations and penalties to avoid prolonged legal disputes and that result in expediting safety and hazard abatement.

Inspection Guidelines

Everyone involved with the construction industry is eventually going to be under the scrutiny of an OSHA compliance inspection. The following list of suggestions will help our firm limit the number of violations and minimize the amount of fines:

- Request and review the compliance officer's credentials and make record of the officer's name, serial number, and the name of his or her supervisor.
- Ask the OSHA compliance officer the reason for the inspection. If there was an employee compliant, ask whether it was a formal written, or informal verbal type of complaint.
- Ask the compliance officer for copies of any complaints and the applicable OSHA standards.
- Notify Celtic Commercial Painting, LLC. management when the compliance officer arrives. If management is unavailable, request that the inspection process be delayed until management personnel arrive. Compliance officers normally will delay inspections for at least one hour.
- Do not admit to a violation, volunteer information, or engage in long conversations with the compliance officer. Be polite, to the point, and firm. Remember, everything you say can be held against you. Also, do not ask the compliance officer whether something is or isn't in compliance.

- Discuss Celtic Commercial Painting, LLC. safety measures and programs which you have instituted to show our company's concern for the preservation of safety and health.
- Subcontractor safety representatives must be present during the inspection of their work areas.
- Make a note of every apparent violation the compliance officer points out. Whenever possible, make every effort to correct a violation on the spot, and make certain the compliance officer records reflect the correction.
- Note the total amount of time the compliance officer is on the project site.
- Never admit the existence of a violation when answering a compliance officer's questions. If the compliance officer asks you how much time you need to amend or correct an apparent violation, make it clear in your response that you admit to no violation.
- OSHA inspectors can inspect whatever is in sight. Do your best to escort him/her via the safest route.
- Should the compliance officer notice some violations which are exceptions to the norm of what is in compliance, be sure to clarify this fact.
- For example, if the compliance officer notices an unguarded floor opening, point out the many guarded floor openings, and if a worker is without a hard hat, indicate the many workers who are wearing their hard hats.
- If a compliance officer takes photographs of what he/she considers to be an unsafe condition, be sure to photograph the same area from a wider angle that may show safe conditions in the background. If an inspector takes a measurement, do the same.
- Compliance officers may speak to employees at the jobsite for a reasonable amount of time in private and may ask for workers' home phone numbers. However, you need not allow for long discussions, which disrupt production, and workers should know they are not obligated to discuss specifics with an OSHA compliance officer.
- At the closing conference, discuss every situation of topic for which citations may be written. Check the item against the OSHA standard. If anyone disagrees with the compliance officer's position, they should politely, yet firmly, point out their position or opinion. Avoid discussing the possible fine to be levied for an apparent violation. This could be misconstrued and considered a bribe.
- If a serious, repeat, failure to abate, or willful citation is written on your jobsite, you can be assured of a follow-up compliance inspection.

Injury/Illness Recordkeeping

1. Celtic Commercial Painting, LLC. shall record those work-related injuries and illnesses that result in:

    - Death,
    - Loss of consciousness,
    - Days away from work,
    - Restricted work activity or job transfer, or
    - Medical treatment beyond first aid.

2. Celtic Commercial Painting, LLC. shall record any significant work-related injury or illness that is diagnosed by a physician or other licensed health care professional.

3. Celtic Commercial Painting, LLC. shall record any work-related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum.

4. All recordable work-related injuries and illnesses shall be recorded on the OSHA 300 Log within 7 calendar days of receiving information that a recordable injury or illness has occurred.

5. An OSHA 301 Incident Form, or equivalent, shall be completed for each recordable work-related injury and illness on the OSHA 300 Log.

6. At the end of each calendar year, Celtic Commercial Painting, LLC. shall:

    - Review the OSHA 300 Log to verify that the entries are complete and accurate, and correct any deficiencies identified;
    - Create an annual summary (OSHA Form 300A) of injuries and illnesses recorded on the OSHA 300 Log;
    - Certify the summary; and
    - Post the annual summary.

7. Celtic Commercial Painting, LLC. shall post a copy of the annual summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. You must ensure that the posted annual summary is not altered, defaced, or covered by other material.

8. Celtic Commercial Painting, LLC. shall post the annual summary (OSHA Form 300A) no later than February 1 of the year following the year covered by the records and keep the posting in place until April 30.

9. Celtic Commercial Painting, LLC. shall save the OSHA 300 Log, the privacy case list (if one exists), the annual summary (300A), and the OSHA 301 Incident Report forms for five (5) years following the end of the calendar year that these records cover.

10. If a Celtic Commercial Painting, LLC. establishment had 20 or more employees at any time in the previous calendar year, Celtic Commercial Painting, LLC. shall electronically submit the information from the annual summary (300A) to OSHA no later than March 2 of the year after the calendar year covered by the form.

11. If a Celtic Commercial Painting, LLC. establishment had 100 or more employees at any time in the previous calendar year, and the establishment is classified in an industry listed in appendix B to subpart E (see below link), Celtic Commercial Painting, LLC. shall electronically submit the information from OSHA Forms 300 and 301 to OSHA no later than March 2 of the year after the calendar year covered by the form.

    https://www.osha.gov/laws-regs/regulations/standardnumber/1904/1904SubpartEAppB

12. Each establishment subject to the above electronic reporting requirements shall provide the Employer Identification Number (EIN) used by the establishment.

Injury/Illness Reporting

1. All work-related fatalities shall be reported to OSHA within 8 hours.

2. All work-related inpatient hospitalizations, amputations, and losses of an eye shall be reported to OSHA within 24 hours.

Hand and Power Tools

Purpose

The purpose of this procedure is to ensure that the employees of Celtic Commercial Painting, LLC. and sub-contractors are properly protected against all occupational exposures to hand and power tools, in all forms, in all construction work, where an employee may potentially be exposed.

Hand Tools

1. Hand tools are non-powered. They include anything, from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance. Some examples include:

    - Using a screw driver as a chisel may cause the tip of the screwdriver to break and fly, hitting the user or other employees.
    - If a wooden handle on a tool, such as a hammer or an axe, is loose, splintered, or cracked, the head of the tool may fly off and strike the user or another worker.
    - A wrench must not be used if its jaws are sprung, because it might slip.
    - Impact tools, such as chisels, wedges, or drift pins, are unsafe if they have mushroomed heads. The heads might shatter on impact, sending sharp fragments flying.

2. Celtic Commercial Painting, LLC. is responsible for the safe condition of tools and equipment used by employees, but the employees have the responsibility for properly using and maintaining tools in a safe, usable condition.

3. Celtic Commercial Painting, LLC. should caution employees that saw blades, knives, or other tools be directed away from employees who are working in close proximity. Knives and scissors must be sharp. Dull tools can be more hazardous than sharp ones.

4. Appropriate personal protective equipment, e.g., safety goggles, gloves, etc., shall be worn due to hazards that may be encountered while using portable power tools and hand tools.

5. Working surfaces shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

6. Around flammable substances, sparks produced by iron and steel hand tools can be dangerous ignition sources. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will provide safety.

Power Tool Precautions

1. Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

2. Employees should be trained in the use of all tools, not just power tools. They should understand the potential hazards, as well as the safety precautions, to prevent those hazards from occurring.

3. The following general precautions should be observed by power tool users:

    - Never carry a tool by the cord or hose.
    - Never yank the cord or the hose to disconnect if from the receptacle.
    - Keep cords and hoses away from heat, oil, and sharp edges.
    - Disconnect tools when not in use, before servicing, and when changing accessories, such as blades, bits, and cutters.
    - All observers should be kept at a safe distance away from the work area.
    - Secure work with clamps or a vise, freeing both hands to operate the tool.
    - Avoid accidental starting. The employee should not hold a finger on the switch button while carrying a plugged-in tool.
    - Tools should be maintained with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
    - The proper apparel should be worn. Loose clothing, ties, or jewelry can become caught in moving parts.
    - All portable, electric tools that are damaged shall be removed from use and tagged "Do Not Use."

4. Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded if exposed to contact by employees.

5. Guards, as necessary, should be provided to protect the operator and others from the following:

    - Point of operation,
    - In-running nip points,
    - Rotating parts, and
    - Flying chips and sparks.

6. Safety guards must never be removed when a tool is being used. For example, portable circular saws must be equipped with guards. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw, except when it

makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the work.

Safety Switches

1. All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber saws, and other similar operating powered tools shall be equipped with a momentary contact "on-off" control and may have a lock-on control, provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

2. All hand-held powered platen sanders, grinders with wheels 2-inch diameter or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jigsaws with blade shanks one-fourth of an inch wide or less may be equipped with only a positive "on-off" control.

3. All other hand-held powered tools, such as circular saws, chain saws, and percussion tools without positive accessory holding means, shall be equipped with a constant pressure switch that will shut off the power when the pressure is released.

4. The above 3 points do not apply to concrete vibrators, concrete breakers, powered tampers, jackhammers, rock drills, and similar, hand-operated power tools.

Electric Tools

1. Celtic Commercial Painting, LLC. employees using electrical tools must be aware of several dangers; the most serious is the possibility of electrocution. Among the chief hazards of electric-powered tools are burns and slight shocks, which can lead to injuries or even heart failure. Under certain conditions, even a small amount of current can result in fibrillation of the heart and eventual death. A shock also can cause the user to fall off a ladder or other elevated work surface.

2. To protect the user from shock, tools must either have a three-wire cord with a ground and be grounded, be double-insulated, or be powered by a low-voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor. One end of the grounding conductor connects to the tool's metal housing; the other end is grounded through a prong on the plug. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong should never be removed from the plug.

3. Double-insulation is more convenient. The user and the tools are protected in two ways: by normal insulation on the wires inside, and by a housing that cannot conduct electricity to the operator in the event of a malfunction.

4. These general practices should be followed when using electric tools:

- Electric tools should be operated within their design limitations.
- Appropriate personal protective equipment should be utilized.
- When not in use, tools should be stored in a dry place.
- Electric tools should not be used in damp or wet locations.
- Work areas should be well lit.

Powered Abrasive Wheel Tools

1. Powered abrasive grinding, cutting, polishing, and wire buffing wheels create special safety problems, because they may throw off flying fragments.

2. Before an abrasive wheel is mounted, it should be inspected closely and sound- or ring-tested to be sure it is free from cracks or defects. To test, wheels should be tapped gently with a light, non-metallic instrument. If they sound cracked or dead, they could fly apart in operation, and so must not be used. A sound and undamaged wheel will give a clear metallic tone or "ring."

3. To prevent the wheel from cracking, the user should be sure it fits freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place, without distorting the flange. Follow the manufacturer's recommendations. Care must be taken to ensure the spindle wheel will not exceed the abrasive wheel specifications.

4. Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee should never stand directly in front of the wheel as it accelerates to full operating speed.

5. Portable grinding tools need to be equipped with safety guards to protect workers not only from the moving wheel surface, but also from flying fragments in case of breakage.

6. In addition, when using a powered grinder:

    - Always use eye protection.
    - Turn off the power when not in use.
    - Never clamp a hand-held grinder in a vise.

Pneumatic Tools

1. Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

2. There are several dangers encountered in the use of pneumatic tools. The main one is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool.

3. Eye protection is required for employees working with pneumatic tools.

4. When using pneumatic tools, employees must check to see that they are fastened securely to the hose to prevent them from becoming disconnected. A positive locking device

attaching the air hose to the tool shall be utilized, as specified by the equipment manufacturer.

5. A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.

6. Compressed air guns should never be pointed toward anyone. Users should never "dead-end" it against themselves or anyone else. Compressed air used for cleaning purposes shall be limited to less than 30 psi and then only with effective chip guarding and personal protective equipment. Compressed air shall not be used to clean the skin or clothing.

7. Compressed air cylinders shall be visually inspected prior to use.

8. Every air receiver shall be equipped with an indicating pressure gage (so located as to be readily visible) and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.

9. A drain pipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.

10. All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

11. The use of hose for hoisting or lowering tools is prohibited.

12. The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.

13. All hoses exceeding ½ inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

Powder-Actuated Tools

1. Powder-actuated tools operate like a loaded gun and should be treated with the same respect and precautions. In fact, they are so dangerous that they must be operated only by specially trained employees.

2. Safety precautions to remember include the following:

    - Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool.

- The tool shall be tested each day before loading to ensure the safety devices are in proper working condition. The method of testing shall be in accordance with the manufacturer's recommended procedure.
- Any tool found not in proper working order, or that develops a defect during use, shall be immediately removed from service and not used until properly repaired.
- Proper personal protective equipment must be worn.
- Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employees. Hands shall be kept clear of the open barrel end.
- Loaded tools shall not be left unattended.
- Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile.
- Driving into materials easily penetrated shall be avoided, unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side.
- No fastener shall be driven into a spalled area caused by an unsatisfactory fastening.
- Tools shall not be used in an explosive or flammable atmosphere.
- All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer.

Hydraulic Power Tools

1. The fluid used in hydraulic power tools must be an approved fire-resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed.

2. The manufacturer's recommended safe operating pressure for hoses, valves, pipes, filters, and other fittings must not be exceeded.

Jacks

1. The manufacturer's rated capacity shall be legibly marked on all jacks and not be exceeded.

2. All jacks shall have a positive stop to prevent over-travel.

3. **Blocking –** When it is necessary to provide a firm foundation, the base of the jack shall be blocked or cribbed. Where there is a possibility of slippage of the metal cap of the jack, a wood block shall be placed between the cap and the load.

Operation and Maintenance

1. After the load has been raised, it shall be cribbed, blocked, or otherwise secured at once.

2. Hydraulic jacks exposed to freezing temperatures shall be supplied with an adequate antifreeze liquid.

3. All jacks shall be properly lubricated at regular intervals.

4. Each jack shall be thoroughly inspected at times, which depend upon the service conditions. Inspections shall be not less frequent than the following:

    - For constant or intermittent use at one locality, once every 6 months,
    - For jacks sent out of shop for special work, when sent out and when returned,
    - For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.

5. Repair or replacement parts shall be examined for possible defects.

6. Jacks which are out of order shall be tagged accordingly and shall not be used until repairs are made.

General Safety

1. Employees who use hand and power tools and who are exposed to the hazards of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases must be provided with the particular personal equipment necessary to protect them from the hazard.

2. All hazards involved in the use of power tools can be prevented by following five basic safety rules:

    - Keep all tools in good condition with regular maintenance.
    - Use the right tool for the job.
    - Examine each tool for damage before use.
    - Operate according to the manufacturer’s instructions.
    - Provide and use the proper protective equipment.

3. Employees and Celtic Commercial Painting, LLC. have a responsibility to work together to establish safe working procedures. If a hazardous situation is encountered, it should be brought to the attention of the proper individual immediately.

Machine Guarding

This program was developed to communicate the company's policies and procedures, as well as to serve as a reference guide when evaluating the workplace for machine hazards.

Policy

No employee shall operate and/or cause to be operated any machinery without proper protective guards in place. No employee shall modify, disable, or remove any protective guards on machinery unless he/she is considered an "authorized employee," as described in the company Lockout/Tagout (LOTO) program, **and** that program has been fully implemented. Such guards shall be provided to protect the operator and other employees from the hazards associated with the point of operation, in-running nip points**,** rotating parts, flying chips, and sparks.

Responsibilities

Management

1. Ensure all machinery is properly guarded.
2. Provide training to employees to ensure full comprehension of the requirements.
3. Ensure all newly purchased equipment meets OSHA machine guard requirements prior to use.
4. Monitor and inspect to ensure machine guards are functional.
5. Immediately correct machine guard deficiencies.
6. Ensure the implementation of the company Lockout/Tagout Program when guards are not in place or are not functional.
7. Conduct a thorough investigation for each injury related to machine guarding.

Employees

1. Comply with all aspects of this program.
2. Report all damaged tools, equipment, and equipment guards to your supervisor immediately.
3. Do not operate equipment unless guards are in place and functional.
4. Do not remove machine guards unless you are considered an "authorized employee," as described in the company Lockout/Tagout Program, **and** that program has been fully implemented.

General Requirements

Guards shall be designed and constructed so the operator does not have any part of his/her body in the danger zone during the operating cycle. Guards shall be affixed to the machine and shall not offer an accident hazard in itself.

Special hand feeding tools for placing and removing material shall be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools shall not be, in lieu of other guarding, required by this policy, but shall only be used to supplement protection provided.

Basic Areas Requiring Safeguarding

Dangerous moving parts in three basic areas require safeguarding:

- **Point of Operation** – The area on a machine where work is actually performed on the material being processed (e.g., cutting, shaping, boring, forming of stock);
- **Power Transmission Apparatus** – All components of the mechanical system, which transmit energy to the part of the machine performing the work. These components include, but are not limited to, flywheels, pulleys, belts, connecting rods, couplings, spindles, chains, cranks, and gears;
- **Other Moving Parts** – All parts of the machine, which move while the machine is working, including, but not limited to, reciprocating, rotating, and transverse moving parts, as well as feed mechanisms and auxiliary parts of the machine.

Exposure of Blades

When the periphery of the blades of a fan is less than seven feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than one-half inch.

Anchoring Fixed Machinery

All machines designed for a fixed location shall be securely anchored to prevent walking or moving of the machine.

Hazardous Mechanical Motions

Rotating Motion

Rotating motion can be dangerous, because it can grip clothing and, through mere skin contact, force an arm or hand into a dangerous position. Collars, couplings, clutches, flywheels, shaft ends, spindles, meshing gears, and horizontal or vertical shafting are some examples of common rotating mechanisms, which may be hazardous. The danger increases when projections, such as set screws, bolts, nicks, abrasions, and projecting keys are exposed on rotating parts (see ***Figure 1***).

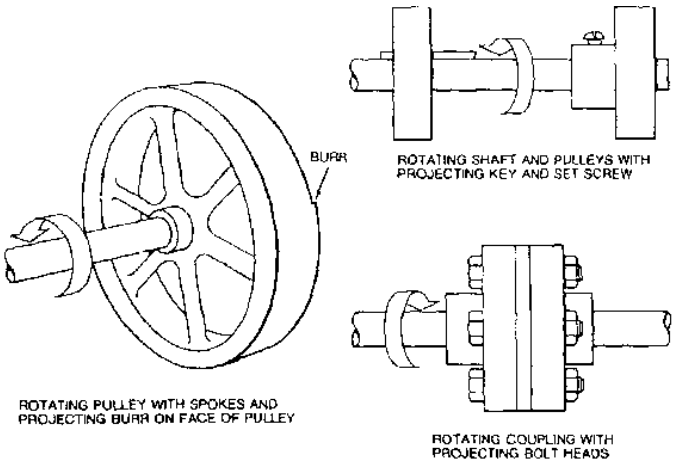


Figure 1

Nip Points

Nip point hazards are caused by the rotating parts on machinery. There are three main causes of nip points:

- Parts can rotate in opposite directions while their axes are parallel to each other. These parts may be in contact or in close proximity to each other, thereby creating a nip point (see Figure 2).

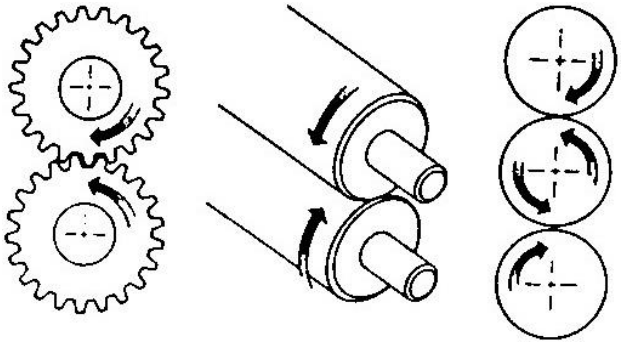


Figure 2

Parts can rotate in the same direction with each other. Some examples would be the point of contact between a power transmission belt and its pulley, a chain and a sprocket, or a rack and pinion (see Figure 3).

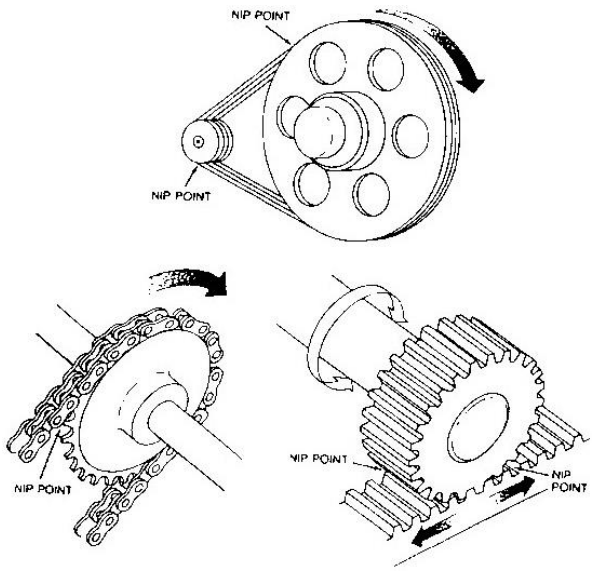


Figure 3

A part can rotate among a fixed part, creating a shearing or crushing action. Examples are spoked handwheels/flywheels, screw conveyors, or the periphery of an abrasive wheel and an incorrectly adjusted work rest (see Figure 4).

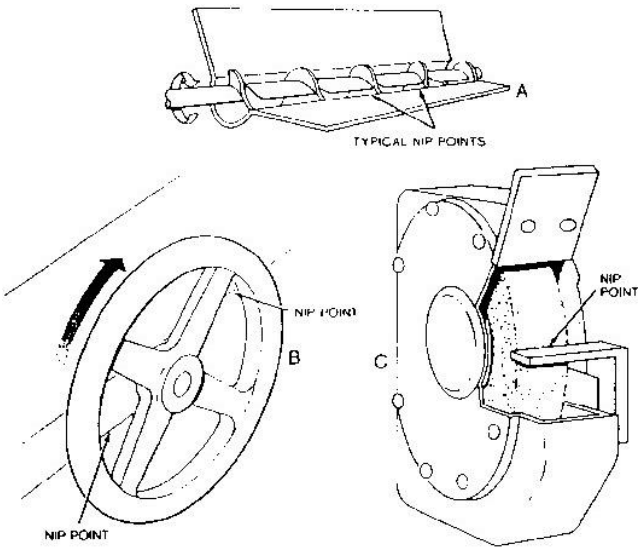


Figure 4

Reciprocating motions may be hazardous because, during the back-and-forth or up-and-down motion, a worker may be struck by or caught between a moving and stationary part (Figure 5).

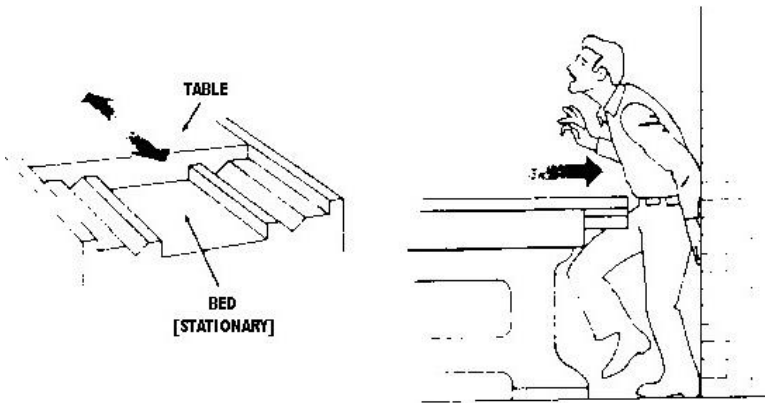


Figure 5

Transverse motion (movement in a straight, continuous line) creates a hazard, because a worker may be struck or caught in a pinch point or shear point by the moving part.

Cutting action may involve rotating, reciprocating, or transverse motion. The danger of cutting action exists at the point of operation where finger, arm, and body injuries can occur and where flying chips or scrap material can strike the head, particularly in the area of the eyes or face. Such hazards are present at the point of operation in cutting wood, metal, or other materials. Examples of mechanisms involving cutting hazards include bandsaws, circular saws, boring or drilling machines, turning machines (lathes), or milling machines. The die cutters, which form the shape of the tortilla, is one example of this type of hazard.

Punching action results when power is applied to a slide (ram) for the purpose of blanking, drawing, or stamping metal or other materials. The danger of this type of action occurs at the point of operation where stock is inserted, held, and withdrawn by the hand. Typical machines used for punching operations are power presses and iron workers.

Shearing action involves applying power to a slide or knife in order to trim or shear metal or other materials. A hazard occurs at the point of operation where stock is actually inserted, held, and withdrawn. Examples of machines used for shearing operations are mechanically, hydraulically, or pneumatically powered shears.

Bending action results when power is applied to a slide in order to draw or stamp metal or other materials. A hazard occurs at the point of operation where stock is inserted, held, and withdrawn. Equipment that uses bending action includes power presses, press brakes, and tubing benders.

Requirements for Safeguards

Safeguards shall meet these minimum general requirements:

- **Prevent Contact –** The safeguard shall prevent hands, arms, and any other part of a worker's body from making contact with dangerous moving parts. A good safeguarding

system eliminates the possibility of the operator or another worker placing parts of their bodies near hazardous moving parts.

- **Secure –** Workers should not be able to easily remove or tamper with the safeguard. Guards and safety devices shall be made of durable material that will withstand the conditions of normal use. They shall be firmly secured to the machine.
- **Protect from Falling Objects –** The safeguard shall ensure no objects can fall into moving parts. A small tool that is dropped into a cycling machine could easily become a projectile that could strike and injure someone.
- **Create No New Hazards –** A safeguard defeats its own purpose if it creates a hazard of its own, such as a shear point, jagged edge, or unfinished surface that can cause a laceration. The edges of guards, for instance, should be rolled or bolted in such a way that they eliminate sharp edges.
- **Create No Interference –** Any safeguard that impedes a worker from performing the job quickly and comfortably might soon be overridden or disregarded. Proper safeguarding can actually enhance efficiency, since it can relieve the worker's apprehensions about injury.
- **Allow Safe Lubrication –** If possible, one should be able to lubricate the machine without removing the safeguards. Locating oil reservoirs outside the guard, with a line leading to the lubrication point, will reduce the need for the operator or maintenance worker to enter the hazardous area.

Non-Mechanical Hazards

When machines produce noise, which can startle and disrupt concentration, and can interfere with communications, thus hindering the worker's safe job performance, refer to the company's Hearing Conservation Program.

Training

Management shall provide training regarding the following:

- Description and identification of the hazards associated with particular machines;
- The safeguards on the particular machines including, but not limited to: how they provide protection; the hazards for which they are intended; how to use them; and what to do if a safeguard is damaged, missing, or unable to provide adequate protection.
- This training shall be provided to all new operators and maintenance personnel, when any new or altered safeguards are put in service, employees are assigned to a new machine or operation, or employees demonstrate a lack of knowledge regarding the machine guarding requirements.

Material Handling, Storage, and Disposal

Purpose

The following requirements are designed to eliminate or reduce injuries involving material handling, whether performed manually or through automation. The use of material handling equipment and other engineering controls shall be given priority over the manual handling of materials and shall be provided to employees when it is feasible to do so.

Before work begins, consideration must be given to project wastes, trash, and scrap materials that will accumulate during work. Disposal of waste, trash, and scrap materials shall be handled, organized, and stored in such a way as to have as little an impact upon the environment as possible.

Material Handling Equipment

1. Inspect the equipment prior to use. Check the braking system on all equipment. The brakes shall be capable of stopping the equipment when fully loaded.
2. Do not exceed speed limits. Watch for obstructions and elevation changes. Hazardous areas shall be roped off or similarly marked.
3. Equipment shall not be stored on or allowed to roll over hole covers.
4. All controls shall be in the neutral position with the motors stopped and brakes set, unless work being performed requires otherwise.

Material Handling Methods

1. Inspect materials for slivers, jagged edges, burrs, and rough or slippery surfaces.
2. Get a firm grip on the object.
3. Keep fingers away from pinch points, especially when setting down materials.
4. When handling lumber, pipe, or other long objects, keep hands away from the ends to prevent them from being pinched.
5. Wipe off greasy, wet, slippery, or dirty objects before trying to handle them.
6. Keep hands free of oil and grease.

Where the potential for hand injury exists, gloves or other hand protectors shall be used to prevent hand injuries.

When opening a wire-bound bale or box, employees must wear eye protection as well as stout gloves and take special care to prevent the ends of the bindings from flying loose and striking

their face or body. The same precaution applies to coils of wire, strapping, or cable. Use cutters that clamp ends when cut.

Lifting and Carrying

- Before employees are assigned to jobs that require manual lifting, a hazard assessment shall be conducted in an effort to limit the hazard and determine appropriate hazard controls.
- Before employees are assigned to jobs requiring heavy and/or frequent lifting, make sure they are physically suited for the job.
- If a load is thought to be more than one employee can handle, supply material handling equipment or assign two employees to the operation. Instruct employees in proper ways to lift and how to avoid musculoskeletal injuries.
- All injuries caused by improper lifting techniques shall be investigated. The findings of such investigations shall be incorporated into work procedures to avoid future injuries.
- Frequent and regular inspections of the workplace shall be conducted to evaluate work techniques and assess the potential for and prevention of injuries.

Proper Way to Lift

Here are six steps to safe lifting:

1. Keep your feet apart: one alongside and one behind the object.
2. Keep your back straight, nearly vertical; bend at the knees instead of the waist.
3. Grip the object with the whole hand.
4. Tuck elbows and arms in, keeping the object close to the body.
5. Keep your body weight directly over your feet.
6. Use your legs to lift.

Note: When bulky objects are to be handled or when objects are to be carried on the shoulder, employees shall be trained in these techniques for special situations.

Handling Barrels and Drums

- Whenever possible, use a dolly or other mechanical device when moving barrels or drums.
- If two employees are assigned to up-end a full drum, they should use the following procedures:
    - Stand on opposite sides of the drum and face each other;
    - Grasp both chimes (rolled edges at both ends of the barrel) near their high points, lift one end, and press down on the other;

    - As the drum is up-ended and brought to balance on the bottom chime, release the grip on the bottom chime and straighten the drum.
- When two employees are to overturn a full drum, they should use this procedure:
    - Make sure there is enough room; cramped quarters can result in badly injured hands.
    - Both stand near each other, facing the drum. Grip the closest point of the top chime with both hands, resting your palms against the side of the drum, and push until the drum balances on the lower chime.
    - Step forward a short distance, and each employee should release one hand from the top chime in order to grip the bottom chime; ease the drum down to a horizontal position until it rests solidly on its side.
- To roll a barrel or drum, an employee should push against the sides with his/her hands. To change direction of the roll, he/she should grip the chime, not kick the drum with his/her feet.

Equipment and Handling

Hand Trucks (Dollies)

- A truck designed for a specific purpose should be used only for that purpose;
- Foot brakes can be installed on wheels of two-wheeled trucks so that operators need not place their feet on the wheel or axle to hold the truck.
- Handles should have knuckle guards.
- Four-wheeled truck operations follow rules similar to those for two-wheeled trucks. Extra emphasis must be placed on proper loading. Four-wheeled trucks must be evenly loaded to prevent tipping. They are to be pushed rather than pulled, except for a truck that has a fifth wheel and a handle for pulling. Trucks shall not be loaded so high that operators cannot see where they are going.

Dock Boards (Bridge Plates)

- Portable and powered dockboards shall be strong enough to carry the load imposed on them.
- Portable dockboards shall be secured in position, either by being anchored or equipped with devices that will prevent their slipping.
- Handholds, or other effective means, shall be provided on portable dockboards to permit safe handling.
- Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

Hoisting Materials

1. Employees shall not exceed manufacturer’s specifications and limitations. Know the safe load limit prior to using equipment.

2. Inspect controls to ensure the proper reaction results from the operation of a certain control.
3. Visually inspect hoist cables for fraying, kinking, twisting, or crushing.
4. Check the hoist drum for proper cable alignment or improper stacking.
5. Inspect the hook for cracks, bending, or distortion.
6. Do not use damaged equipment; do not attempt to repair or lengthen the load chain.
7. Position the hoist directly over the load. Avoid swinging the load.
8. Attach guide ropes to control the load when necessary.
9. Raise the load only high enough to clear obstructions. Never raise a load over personnel.

Material Storage

1. All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse.
2. Maximum safe load limits of floors within buildings and structures, in pounds per square foot, shall be conspicuously posted in all storage areas, except for floor or slab on grade. Maximum safe loads shall not be exceeded.
3. Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.
4. When a difference in road or working levels exist, means, such as ramps, blocking, or grading, shall be used to ensure the safe movement of vehicles between the two levels.
5. Material stored inside buildings under construction shall not be placed within 6 feet of any hoistway or inside floor openings, nor within 10 feet of an exterior wall that does not extend above the top of the material being stored.
6. Non-compatible materials shall be segregated in storage.
7. Bagged materials shall be stacked by stepping back the layers and cross-keying the bags at least every 10 bags high.
8. Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.
9. Brick stacks shall not be more than 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be tapered back 2 inches in every foot of height above the 4-foot level.

10. When masonry blocks are stacked higher than 6 feet, the stack shall be tapered back one-half block per tier above the 6-foot level.

11. Lumber:

    - Used lumber shall have all nails withdrawn before stacking.
    - Lumber shall be stacked on level and solidly supported sills.
    - Lumber shall be stacked as to be stable and self-supporting.
    - Lumber piles shall not exceed 20 feet in height, provided the lumber to be handled manually shall not be stacked more than 16 feet high.

12. Structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, shall be stacked and blocked as to prevent spreading or tilting.

13. During the performance of roofing work, materials shall not be stored within 6 feet of an unprotected edge. Where guardrails are used as falling object protection, openings shall be small enough to prevent the passage of materials.

14. Materials that are piled, grouped, or stacked near a roof edge shall be stable and self-supporting.

Housekeeping

1. During construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures.

2. Combustible scrap and debris shall be removed at regular intervals during construction. Safe means shall be provided to facilitate such removal.

3. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

4. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

Disposal of Waste Materials

1. Employees shall be made aware of the proper method of disposing waste.

2. Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, shall be used. An enclosed chute is a slide, closed in on all sides, through which material is moved from a high place to a lower one.

3. When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.

4. All scrap lumber, waste material, and rubbish shall be removed from the immediate work area as the work progresses.

5. All solvent waste, oily rags, and flammable liquids shall be kept in fire-resistant, covered containers until they are removed from the worksite.

6. When opportunities arise and if possible, waste should be segregated for purposes of recycling.

Personal Protective Equipment

Purpose

The purpose of the Personal Protective Equipment policy is to protect the employees of Celtic Commercial Painting, LLC. from exposure to workplace hazards and mitigate the risk of injury through the use of personal protective equipment (PPE). PPE is not a substitute for more effective control methods, and its use will be considered only when other means of protection against hazards are not adequate or feasible. It will be used in conjunction with other controls, unless no other means of hazard control exist.

Personal protective equipment will be provided, used, and maintained when it has been determined that its use is required to ensure the safety and health of our employees and that such use will lessen the likelihood of occupational injury and/or illness.

This section addresses general PPE requirements, including eye and face, head, foot and leg, hand and arm, and body (torso) protection. Separate programs exist for respiratory protection and hearing protection, as the need for participation in these programs is established through industrial hygiene monitoring.

Responsibilities

Program Administrator

The Program Administrator is responsible for the development, implementation, and administration of the PPE policy. This involves:

1. Conducting workplace hazard assessments to determine the presence of hazards that necessitate the use of PPE.

2. Selecting and purchasing PPE.

3. Reviewing, updating, and conducting PPE hazard assessments whenever:

    - A job change,
    - New equipment is used,
    - There has been an accident,
    - A supervisor or employee requests it, or
    - At least every year.

4. Maintaining records on hazard assessments.

5. Maintaining records on PPE assignments and training.

6. Providing training, guidance, and assistance to supervisors and employees on the proper use, care, and cleaning of approved PPE.

7. Periodically re-evaluating the suitability of previously selected PPE.
8. Reviewing, updating, and evaluating the overall effectiveness of PPE use, training, and policy.

Supervisors

Supervisors have the primary responsibility for implementing and enforcing PPE use and policy in their work area. This involves:

1. Providing appropriate PPE, and making it available to employees.
2. Ensuring employees are trained on the proper use, care, and cleaning of PPE.
3. Ensuring PPE training certification and evaluation forms are signed and given to company management.
4. Ensuring employees properly use and maintain their PPE, and follow Celtic Commercial Painting, LLC. PPE policy and rules.
5. Notifying Celtic Commercial Painting, LLC. management and the Program Administrator when new hazards are introduced or when processes are added or changed.
6. Ensuring defective or damaged PPE is immediately disposed of and replaced.

Employees

The PPE user is responsible for following the requirements of the PPE policy. This involves:

1. Properly wearing PPE, as required.
2. Attending required training sessions.
3. Properly caring for, cleaning, maintaining, and inspecting PPE, as required.
4. Following Celtic Commercial Painting, LLC. PPE policy and rules.
5. Informing the supervisor of the need to repair or replace PPE.

Employees who disregard and do not follow PPE policy and rules will be subject to the Corrective Action program.

General Requirements

1. Personal Protective Equipment (PPE) shall be worn when required and maintained in a sanitary and reliable condition.
2. Employees shall review with their supervisors any portions of their job they do not understand.

3. Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets. The type and class of hardhat shall be appropriate for the hazard. Protective helmets shall meet the requirements of ANSI Z89.1

4. Eye protection shall be worn at all times when eye hazards are encountered. Eye protection shall meet the requirements specified in ANSI Z87.1. The type of eye protection shall be appropriate for the hazard. For laser and welding exposures, see Table 1 and Table 2.

5. Face shields shall be worn to prevent sparks and flying debris from striking the face during grinding and cutting operations. Face shields shall also be worn where chemical and/or hot material splash hazards are encountered. Face shields shall be used in addition to eye protection and not as a substitute for eye protection. Face shields shall meet the requirements specified in ANSI Z87.1.

6. Gloves shall be worn when handling hot materials for protection against acids and other chemicals and when handling materials that present a laceration hazard. The type of gloves shall be appropriate for the hazard.

7. Appropriate work clothing shall be worn at all times. Shorts or sleeveless shirts are not permitted at any time. Long pants, long-sleeve shirts, gloves, and durable work boots shall be worn when warranted to protect against exposure to physical and chemical hazards.

8. Work clothing used to protect against the hazards of hot asphalt shall be made of 100% natural fibers. Synthetic fiber clothing and synthetic/natural fiber blends are prohibited.

9. Durable work boots shall be worn at all times. Safety-toe footwear shall meet the requirements and specifications in ANSI Z41. Tennis shoes are prohibited. Slip-resistant footwear shall be worn when warranted and where slip hazards cannot be eliminated or controlled by other means.

10. Safety harnesses and lanyards shall only be used for fall protection. All equipment shall be inspected prior to use.

11. Hearing protection shall be worn when noise levels exceed OSHA-designated limits.

12. Employees shall be required to wear high-visibility and reflective vests when jobsite policies dictate and when working around, near, or directing moving traffic. Garments shall conform to Part VI of the Manual on Uniform Traffic Control Devices.

PPE Hazard Assessment

The workplace shall be assessed to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If necessary, PPE shall be selected and employees shall be required to use the types of PPE that will protect them from the

hazards identified in the hazard assessment. Selected PPE shall properly fit each affected employee. Selection decisions shall be communicated to affected employees.

A written certification of hazard assessment shall be maintained and shall be identifiable as such. The written certification shall identify the workplace evaluated, the person certifying that the evaluation has been performed, and the date(s) of the hazard assessment.

Selection of PPE

Once the hazards of a workplace have been identified, the Program Administrator will determine if the hazards can first be eliminated or reduced by methods other than PPE, i.e., methods that do not rely on employee behavior, such as engineering controls.

If such methods are not adequate or feasible, then the Program Administrator will determine the suitability of the PPE presently available; and as necessary, will select new or additional equipment which ensures a level of protection greater than the minimum required to protect our employees from the hazards. Care will be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards will be recommended for purchase.

All personal protective equipment will be of safe design and construction for the work to be performed and will be maintained in a sanitary and reliable condition. Only those items of protective equipment that meet NIOSH or ANSI (American National Standards Institute) standards will be procured or accepted for use. Newly purchased PPE must conform to the updated ANSI standards which have been incorporated into the PPE regulations, as follows:

- Eye and Face Protection ANSI Z87.1
- Head Protection ANSI Z89.1
- Foot Protection ANSI Z41.1
- Hand Protection ANSI/ISEA 105

Affected employees whose jobs require the use of PPE will be informed of the PPE selection and will be provided PPE at no charge (see below). Careful consideration will be given to the comfort and proper fit of PPE in order to ensure that the right size is selected and that it will be used. Defective or damaged PPE shall be immediately disposed of and replaced.

Radiant Energy

For protection against injurious light radiation, filter lenses must meet the test for transmission of radiant energy prescribed by ANSI Z87.1

Table 1 shall be used as a guide for the selection of the proper shade numbers of filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual’s needs.

Table 1 – Filter Lens Shade Numbers for Protection against Radiant Energy

Welding Operation	Shade Number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes	12
5/16-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8-inch	4 or 5
Gas welding (medium), 1/8-inch to 1/2-inch	5 or 6
Gas welding (heavy), over 1/2-inch	6 or 8

Employees whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table 2 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8.

Table 2

Intensity, continuous wave maximum power density (watts/cm^2)	Attenuation	
	Optical Density (O.D.)	Attenuation Factor
10^-2	5	10^5
10^-1	6	10^6
1.0	7	10^7
10.0	8	10^8

Note: Output levels falling between lines in Table 2 shall require the higher optical density. All protective goggles used for laser protection shall bear a label identifying the following data:

- The laser wavelengths for which use is intended,
- The optical density of those wavelengths, and
- The visible light transmission.

Training

Any worker required to wear PPE will receive training in the proper use and care of PPE before being allowed to perform work requiring the use of PPE. Periodic retraining will be offered to PPE users as needed. The training will include, but not necessarily be limited to, the following subjects:

- When PPE is necessary to be worn.
- What PPE is necessary.
- How to properly don, doff, adjust, and wear PPE.
- The limitations of the PPE.
- The proper care, maintenance, useful life, and disposal of the PPE.

After the training, the employees will demonstrate that they understand how to use PPE properly, or they will be retrained. Training of each employee will be documented and include the name of the employee and date of training and be kept on file. The document certifies that the employee has received and understood the required training on the specific PPE he/she will be using.

Retraining

Retraining shall be conducted when:

1. Changes in the workplace render previous training obsolete,
2. Changes in the types of PPE to be used render previous training obsolete, or
3. Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

Cleaning and Maintenance of PPE

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. Employees must inspect, clean, and maintain their PPE according to the manufacturers' instructions before and after each use.

Employee-Owned Equipment

Where employees provide their own protective equipment, Celtic Commercial Painting, LLC. shall be responsible to assure its adequacy, including proper maintenance and sanitation of such equipment.

Payment for PPE

Except as provided below, PPE shall be provided at no cost to employees:

- Celtic Commercial Painting, LLC. is not required to pay for non-specialty safety-toe protective footwear (including steel-toe shoes or steel-toe boots) and non-specialty prescription safety eyewear, provided that such items are permitted to be worn off the jobsite.
- When metatarsal guards are provided and employees are allowed to use shoes or boots with built-in metatarsal protection, employees do not have to be reimbursed for the shoes or boots.
- Celtic Commercial Painting, LLC. is not required to pay for everyday clothing, such as long-sleeve shirts, long pants, street shoes, and normal work boots; or ordinary clothing, skin creams, or other items, used solely for protection from weather, such as winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, ordinary sunglasses, and sunscreen.

Celtic Commercial Painting, LLC. must pay for replacement PPE, except when the employee has lost or intentionally damaged the PPE.

When an employee chooses to use their own PPE, Celtic Commercial Painting, LLC. is not required to reimburse the employee for that equipment. Celtic Commercial Painting, LLC. shall not require an employee to provide or pay for his or her own PPE, unless it is one of the exceptions listed above.

Defective or Damaged PPE

Defective or damaged PPE will not be used and will be immediately discarded and replaced. It is also important to ensure that contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

PPE Hazard Assessment Certification Guidance

1. Do a walk through survey of each work area and job/task. Read through the list of work activities in the first column, putting a check next to the activities performed in that work area or job.

2. Read through the list of hazards in the second column, putting a check next to the hazards to which employees may be exposed while performing the work activities or while present in the work area. (e.g., work activity: chopping wood; work-related exposure: flying particles).

3. Decide how you are going to control the hazards. Try considering engineering, work place, and/or administrative controls to eliminate or reduce the hazards before resorting to using PPE. If the hazard cannot be eliminated without using PPE, indicate which type(s) of PPE will be required to protect your employee from the hazard.

4. Make sure that you complete the following fields on the form (indicated by *) to certify that a hazard assessment was done:

   *Name of your work place
   *Address of the work place where you are doing the hazard assessment
   *Name of person certifying that a workplace hazard assessment was done

*Date the hazard assessment was done

PPE Hazard Assessment Certification Form

*Name of workplace: _____

*Assessment peformed by: _____

*Workplace Address: _____

*Date of Assessment: _____

Work Area: _____

Job Task(s): _____

Use a separate sheet for each job/task or work area

Eyes		
Work Activities, such as: ☐ abrasive blasting ☐ sanding ☐ sawing ☐ cutting ☐ grinding ☐ drilling ☐ hammering ☐ welding ☐ other: _____	**Exposure to:** ☐ airborne dust ☐ flying particles ☐ blood splashes ☐ hazardous chemicals ☐ intense light ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:** ☐ Safety Glasses ☐ Safety Goggles ☐ Side Shields ☐ Dust-tight goggles ☐ Shading/Filter (#_____) ☐ Welding Shield ☐ Other:_____
Face		
Work Activities, such as: ☐ cleaning ☐ welding ☐ mixing ☐ painting ☐ pouring molten ☐ other: _____	**Exposure to:** ☐ hazardous chemicals ☐ extreme heat/cold ☐ potential irritants ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:** ☐ Face Shield ☐ Shading/Filter (#_____)

		☐ Welding Shield ☐ Other:_____
Head		
Work Activities, such as: ☐ building maintenance ☐ construction ☐ confined space operations ☐ walking/working under catwalks ☐ walking/working under conveyor belts ☐ walking/working under crane loads ☐ other: _____	**Exposure to:** ☐ potential falling objects ☐ potential flying debris ☐ impact ☐ electrical ☐ moving parts/machinery ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:** ☐ Protective helmet ☐ Type I ☐ Type II ☐ Class (E/C/G):_____ ☐ Hair net / restraint ☐ Other:_____
Hands/Arms		
Work Activities, such as: ☐ material handling ☐ sanding ☐ grinding ☐ sawing ☐ welding ☐ hammering ☐ other: _____	**Exposure to:** ☐ hazardous chemicals ☐ cut/laceration hazards ☐ extreme heat/cold ☐ electrical ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:** ☐ Gloves ☐ Cut Resistant ☐ Chemical Resistant ☐ Heat/Cold Protection ☐ Slip Resistance ☐ Arm Protection ☐ Other:_____
Feet/Legs		
Work Activities, such as: ☐ building maintenance ☐ construction ☐ demolition	**Exposure to:** ☐ potential falling objects ☐ rolling objects ☐ extreme heat/cold	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:**

☐ plumbing ☐ trenching ☐ use of flammables ☐ welding ☐ other: _____	☐ electrical ☐ heavy equipment ☐ slippery surfaces ☐ other: _____	☐ Safety shoes or boots ☐ Toe protection ☐ Metatarsal proection ☐ Electrical protection ☐ Slip Resistance ☐ Heat/Cold protection ☐ Leggings or chaps ☐ Foot-leg guards ☐ Other:_____
Lungs/Respiratory		
Work Activities, such as: ☐ cleaning ☐ mixing ☐ painting ☐ fiberglass install ☐ confined space ☐ pouring ☐ sawing ☐ other: _____	**Exposure to:** ☐ Dust ☐ Vapor/Gas ☐ Aerosol ☐ Fume ☐ Biological ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, refer to 1910.134:** ☐ Supplied Air ☐ PAPR ☐ Air-purifying ☐ Full Face ☐ Half mask ☐ Dust mask ☐ Other:_____
Body/Whole		
Work Activities, such as: ☐ building maintenance ☐ construction ☐ logging ☐ utility work ☐ compressed air or gas	**Exposure to:** ☐ elevated work ☐ work near water ☐ vehicle/heavy equipment ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No, use:** ☐ Fall Arrest/Restraint – Type: _____

☐ other: _____		☐ PFD – Type: _____ ☐ High-visibility clothing – Type: _____ ☐ Other:_____
Ears/hearing		
Work Activities, such as: ☐ use of generator ☐ grinding ☐ sawing ☐ compressed air ☐ other: _____	**Exposure to:** ☐ Continuous noise ☐ Intermittent noise ☐ Impulsive noise ☐ other: _____	**Can hazard be eliminated without the use of PPE?** Yes ☐ No ☐ **If No*, use:** ☐ Ear plugs ☐ Ear muffs ☐ Both ☐ Other:_____ * Noise monitoring is necessary to determine exposure levels and appropriate Noise Reduction Ratings (NRR) for protectors

The work environment may include tasks/conditions, hazards, and PPE that are not listed on this document. The hazard assessment must be completed in its entirety, including any PPE chosen following additional research/testing

Respiratory Protection

Objective

Celtic Commercial Painting, LLC. Respiratory Protection Program is designed to protect employees by establishing accepted practices for respirator use, providing guidelines for training and respirator selection, and explaining proper storage, use, and care of respirators. This program also serves to help the company and its employees comply with Occupational Safety and Health Administration (OSHA) respiratory protection requirements as found in 29 CFR 1910.134.

Assignment of Responsibility

1. The guidelines in this program are designed to help reduce employee exposures to occupational dust, fumes, mists, gases, and vapors. The primary objective is to prevent excessive exposure to these contaminants.

2. When feasible, exposure to contaminants shall be eliminated or minimized by engineering controls (example: general and local ventilation, enclosure or isolation, and substitution of a less hazardous process or material). When engineering controls are not effective or feasible, the use of personal respiratory protective equipment will be required to achieve this goal.

3. Pre-employment and annual medical examinations shall be performed for all working personnel required to wear respiratory protection in an effort to assure they are in adequate, healthy condition, physically able to perform their work, and can use respiratory equipment as required. Medical evaluations will be conducted prior to fit testing and initial respirator use. Additional medical evaluations will be conducted under the following circumstances:

    a. When an employee gives a positive response to any question among questions 1 through 8 in Section 2, part A of appendix C (29 CFR 1910.134) or when the initial medical examination demonstrates the need for a follow-up medical examination;

    b. When an employee reports medical signs or symptoms that are related to ability to use a respirator;

    c. When a physician or other licensed health care professional (PLHCP), supervisor, or the respirator program administrator indicates that an employee needs to be reevaluated;

    d. When information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or

    e. When a change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

4. Supervisors of each work area are responsible for ensuring all personnel under their control are completely knowledgeable of respiratory protection requirements for the areas in which they work. They are also responsible for ensuring employees comply with all facets of this respiratory program, including respirator inspection and maintenance.

5. It is the responsibility of the employee to have an awareness of the respiratory protection requirements for their work areas as explained by the company. Employees are also responsible for wearing respirators properly and maintaining the equipment in a clean and operable condition.

6. To assure the adequacy of the Respiratory Protection Program, monitoring will be conducted on a periodic basis. Personal sampling equipment will be used in accordance with accepted industrial hygiene practices. Monitoring results will be used to identify areas/activities where respiratory protection may be necessary, and as a basis for respirator selection.

7. The selection of respirators will be based upon the physical and chemical properties of the air contaminants and the concentration levels to which employees are exposed. The company shall make respiratory protection available immediately to each employee who is placed as a new hire or as a transferee in a job that requires respiratory protection. This will be conducted in our orientation of new hires. Replacement respirators, filters, and cartridges will be made available as required. Only National Institute for Occupational Safety and Health (NIOSH) certified respirators shall be utilized.

8. The Supervisor may provide a respirator at the request of a worker or permit workers to utilize their own respiratory protection as long as the supervisor determines that the respirator use will not in itself create a hazard. Voluntary use of filtering face pieces, e.g., dust masks, do not require medical evaluation, however workers should be instructed to properly use, maintain, store and dispose of equipment (see Appendix D of 29 CFR 1910.134, located at the end of this section).

9. Each employee, upon assignment to an area/job requiring respirators, must be instructed by his/her supervisor of the responsibilities in the respiratory program.

10. The Program Administrator is responsible for respirator selection, employee training, fit testing, recordkeeping, and program evaluation. Prior to being required to wear a respirator, employees must be provided effective training. The training must be comprehensive, understandable, and recur annually, and more often if necessary. Employees shall be able to demonstrate at least the following:

    - Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
    - What the limitations and capabilities of the respirator are;
    - How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
    - How to inspect, put on and remove, use, and check the seals of the respirator;
    - What the procedures are for maintenance and storage of the respirator;

- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- The general requirements of this respiratory protection program

Employees will be retrained annually and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete;
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

11. Employees required to wear a respirator will be fitted properly and tested for a face seal prior to the use of the respirator in a contaminated area. Fit testing must also be conducted when a different make, model, style, or size of respirator is used, and at least annually thereafter. An employee must be clean-shaven in areas that affect the fit of the respirator.

Fit-Testing Procedures

1. An employee using a tight-fitting facepiece respirator must be fit tested prior to initial use of the respirator, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.

2. An additional fit test must be conducted whenever an employee reports, or Celtic Commercial Painting, LLC., a PLHCP, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

3. Fit test procedures shall be conducted in accordance with 29 CFR 1910.134 Appendix A and the fit test kit manufacturer instructions.

4. Prior to a fit test, employees must receive a medical evaluation. The fit test shall not be conducted if the employee is not clean-shaven.

5. Employees shall be allowed to select a respirator from a variety of models and sizes so that the respirator is acceptable to, and correctly fits, the user. The respirator used for the fit test must be the same make, model, style, and size respirator that will be used in the work environment.

6. The employee shall hold each face piece up to their face to eliminate those that are obviously not fitting comfortably. Assessment of comfort and respirator fit shall include reviewing the following:

    - Position of the mask on the nose,

- Room for eye protection,
- Room to talk,
- Position of the mask on the face and cheeks,
- Chin is properly placed,
- Adequate strap tension, not overly tightened,
- Fit across nose bridge,
- Respirator of proper size to span the distance from nose to chin,
- Tendency of respirator to slip, and
- Self-observation in the mirror to evaluate fit and respirator position.

7. Irritant smoke (stannic chloride) shall be the media utilized to ensure a quality respirator fit. Regardless of the filters/cartridges to be used in the work environment, P-100 filters must be used for the irritant smoke fit test.

8. The fit test shall be performed while the employee is wearing any applicable safety equipment that may be worn during actual respirator use that could interfere with the respirator fit.

9. No form of test enclosure or hood shall be used for the fit test.

10. The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

11. The test conductor shall take precautions to minimize employee exposure to irritant smoke. Care shall be taken when performing the sensitivity screening checks to use only the minimum amount of smoke necessary to elicit a response from the test subject.

12. **Sensitivity Screening Check** – Prior to donning the respirator, the employee shall be allowed to smell a weak concentration of the irritant smoke to familiarize them with its characteristic odor. The test conductor shall advise the employee that the smoke can be irritating to the eyes, lungs, and nasal passages, and instruct the subject to keep his/her eyes closed while the test is performed.

13. A short piece of tubing shall be used to cover the end of the smoke tube to prevent potential injury from the jagged end of the tube. The test conductor shall carefully direct a small amount of the irritant smoke in the employee's direction to determine that he/she can detect it. Failure to evoke a response shall void the fit test.

14. The employee shall properly don the respirator selected. Fit test procedures shall be reviewed with the employee prior to conducting the fit test.

15. The employee shall conduct negative and positive pressure seal checks prior to the fit test and each time the respirator is donned. A user seal check is not a substitute for the fit test.

16. The positive pressure seal check shall be conducted by closing off the exhalation valve and exhaling gently into the face-piece. The fit is considered satisfactory if a slight

positive pressure can be built up inside the face-piece without any evidence of outward leakage of air at the seal.

17. The negative pressure seal check shall be conducted by closing off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s). The employee shall inhale gently so that the face-piece collapses slightly and hold their breath for ten seconds. The fit is considered satisfactory if the face-piece remains in its slightly collapsed condition and no inward leakage of air is detected.

18. Failure of either seal check shall be cause to readjust the respirator or select an alternate respirator.

19. The test conductor shall direct the stream of irritant smoke from the tube towards the face-seal area of the employee. The test conductor shall begin at least twelve (12) inches from the face piece moving around the whole perimeter of the mask. The test conductor shall gradually make two more passes around the perimeter of the mask, moving to within six (6) inches of the respirator. The following exercises shall be conducted for one minute each:

    - Normal breathing
    - Deep breathing
    - Turning head from side-to-side
    - Moving head up and down
    - Talking, slowly and distinctly
    - Bending over
    - Normal breathing

20. If at any point the employee involuntarily reacts (coughs) to the test, the test has failed. The employee being retested must repeat the entire sensitivity screening check and fit test procedure.

21. Each employee successfully passing the fit test without evidence of a response shall again undergo a sensitivity screening check from the same irritant smoke tube. Failure to evoke a response shall void the fit test.

22. The wearer of a respirator will be responsible for the hygiene of his/her respirator. Each wearer will be instructed on cleaning and disinfecting his/her respirator. This will also include storage. Inspections and repair will be the responsibility of the Supervisor. Disposable respirators will be discarded after it has fulfilled their protection against said contaminant.

23. Respirators are to be regularly cleaned and disinfected. Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least once a day. Supplied air respirators are to be cleaned and disinfected after each use. The following procedure is to be used when cleaning and disinfecting respirators:

    - Disassemble respirator, removing all filters, canisters, or cartridges.

- Wash the face piece and associated parts in a mild detergent with warm water. Use a detergent recommended by the respirator manufacturer. Do not use organic solvents.
- Rinse completely in clean, warm water.
- Disinfect respirator per manufacturer instructions.
- Air dry in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other tight container.

Note: Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirators in a plastic bag in their own locker. Each employee will have his/her name on the bag, and that bag will only be used to store that employee's respirator.

Defective Respirators

Respirators that are defective or have defective parts shall be taken out of service immediately. If, during the inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of a supervisor. The supervisor will decide whether to:

- Temporarily take the respirator out of service until it can be repaired.
- Perform a simple fix on the spot, such as replacing a head strap.
- Dispose of the respirator, due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of similar make, model, and size.

Respirators are to be properly maintained at all times in order to ensure they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. Repairs to the regulators or alarms of atmosphere-supplying respirators will only be conducted by the manufacturer.

The following checklist will be used when inspecting respirators:

- Face Piece:
  - Cracks, tears, or holes
  - Facemask distortion
  - Cracked or loose lenses/face shield
- Head Straps:
  - Breaks or tears
  - Broken buckles
- Valves:
  - Residue or dirt

    - Cracks or tears in valve material
- Filters/Cartridges:
    - Approval designation
    - Gaskets
    - Cracks or dents in the housing
    - Proper cartridge for hazard
- Air Supply Systems:
    - Breathing air quality/grade
    - Condition of supply hoses
    - Hose connection
    - Settings on regulators and valves

Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respiratory face piece to prevent any eye or skin irritation; to replace the filter, cartridge, or canister; if they detect vapor or gas breakthrough or leakage in the face piece; or if they detect any other damage to the respirator or its components.

Self-contained breathing apparatus will be required in specific areas for emergency use. Only trained personnel will use this equipment when it is necessary to enter hazardous atmospheres. The following points will be considered:

- All potential users will be fully trained in the use of this equipment.
- When the equipment is used, it will be tested in an uncontaminated atmosphere prior to entering the hazardous area, if possible.
- An employee will not work with this apparatus in a hazardous atmosphere on an individual basis. At least one additional employee, suitably equipped with a similar breathing apparatus, must be in contact with the first employee and must be available to render assistance, if necessary.
- This equipment will be inspected monthly by the Supervisor. Inspections and maintenance information will be recorded in a logbook.

The Program Administrator will conduct quarterly evaluations of the workplace to ensure the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring, and a review of records.

Problems identified will be noted in an inspection log and addressed by the company. These findings will be reported to the company management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

Appendix D to Sec. 1910.134 (Mandatory)
Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, of if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so you do not mistakenly use someone else's respirator.

Program for Voluntary Use of Dust Masks

This program is designed to protect employee health, even though it has been determined that respirators are not required. Filtering face piece dust masks will be allowed for those employees who wish to use them. This program is designed for compliance with OSHA standard 29 CFR 1910.134(c)(2)(i), with the exception in 1910.134(c)(2)(ii).

Celtic Commercial Painting, LLC. has determined that respirators are not required for the following jobs, tasks, or departments:

_____ _____

_____ _____

The use of dust mask respirators by employees is **strictly voluntary**.

Celtic Commercial Painting, LLC. will provide, and employees are to read, Appendix D of the OSHA Respirator Standard – 29 CFR 1910.134, a copy of which follows:

Appendix D to 29 CFR 1910.134 (Non-Mandatory)
Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard. You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors or very small solid particles of fumes or smoke.
4. Keep track of your respirator so you do not mistakenly use someone else's respirator.

I, _____ , have read and understand the program for voluntary use of dust masks.

Signature: _____ Date: _____

Job Position: _____

Electrical

Electricity is a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires, and explosions. This program is designed to minimize the hazards associated with the use of electrical equipment.

Use of Electrical Equipment

- All electrical tools, machinery, or equipment must be approved by a Nationally Recognized Testing Laboratory (NRTL).
- Listed, labeled, or certified equipment shall be installed and used in accordance with instructions, included in the listing, labeling, or certification.
- All electrical tools, machinery, or equipment must be grounded or double insulated. The frame of a portable generator does not need to be grounded and may serve as the grounding electrode for a system supplied by the generator under the following conditions:
    - The generator supplies only equipment mounted on the generator and/or cord and plug-connected equipment through receptacles mounted on the generator; and
    - The noncurrent-carrying metal parts of equipment and equipment grounding conductor terminals of the receptacles are bonded to the generator frame.
- All receptacle outlets that are not a part of the permanent wiring of the building or structure and are in use by employees shall have approved ground-fault circuit interrupters (GFCI) for personnel protection.
- Never use damaged, defective, or unsafe tools or equipment.
- All employees using electrical equipment must visually inspect all plugs and cords on tools and equipment, including extension cords, to identify external defects such as:
    - Deformed or missing prongs,
    - Damage to the outer “jacket” (insulation) on a power cord, and
    - Any cord with electrical tape.
- Immediately remove damaged or defective tools or equipment from service. Take steps to prevent its use by others and notify your supervisor.
- Extension cords may only be used on a temporary basis. Extension cords shall be grounded and of adequate capacity for the device being used. Extension cords must never be:
    - Used in place of permanent wiring,
    - Stapled or nailed,
    - Passed through a wall or partition or run under a rug or carpet, or
    - Used in wet areas.
- Electrical equipment must never be operated in wet or damp areas or with wet hands.
- Every junction box, switch, and wall receptacle must have a faceplate, which prevents unintentional contact with exposed wires.
- A minimum of 36-inch clearance must be maintained in front of all electrical panels’ boxes and disconnects. All electrical panel boxes must be equipped with a functioning door and have clear labeling to identify the areas served by each circuit breaker.

Installation, Maintenance, and Repair of Electrical Equipment

- To prevent shock or electrocution, only qualified employees who have received training in "Lockout/Tagout" and "Electrical Safety-Related Work Practices" are permitted to perform any installation, maintenance, or repair of electrical tools, machinery, equipment, or electrical systems.
- When a qualified Celtic Commercial Painting, LLC. employee or outside contractor is performing any installation, maintenance, or repair of electrical equipment, or any other electrical work, the employee or contractor must:
    - Follow all applicable electrical safety-related work practices contained in the OSHA regulations,
    - Never work on live electrical equipment, and
    - Follow Celtic Commercial Painting, LLC. Lockout/Tagout Procedures when the work is performed by Celtic Commercial Painting, LLC. employees only, or
    - Follow agreed upon Lockout/Tagout Procedures when work is performed by outside contractors.

Electrical Protection

1. All receptacle outlets that are not a part of the permanent wiring of the building or structure, and which are in use by employees, shall have approved ground-fault circuit interrupters (GFCI) for personnel protection.

2. All ground-fault circuit interrupters shall be tested prior to use each work shift.

3. All extension cords used during company operations shall be a minimum of 12-gauge and have three operating prongs at the plug.

4. All electric hand tools shall have three operating prongs at the plug, unless specifically marked as being double insulated.

5. All electric hand tools and extension cords shall be inspected daily before use to determine if the cords are in good shape and functional. Return faulty equipment to the shop for repair.

6. All extension cords must have serviceable connectors; the plug configurations for 120-volt at 240-volt cords must be different so they cannot be interchanged.

7. The electrical loads may not exceed the capacity of cords and connectors.

8. Do not use extension cords in lieu of ropes for lifting or other purposes.

9. Work on or near energized parts is prohibited.

10. No employee shall be permitted to work in such proximity to any part of an electric power circuit that the employee could contact the electric power circuit in the course of work, unless the employee is protected against electric shock by de-energizing the circuit

and grounding it or by guarding it effectively by insulation or other means. De-energized parts shall still be treated and respected as if they are live.

Training

Employees shall be trained in safety related work practices that pertain to their respective job assignments in accordance with NFPA 70E and the Lockout/Tagout program contained in this manual.

Lockout/Tagout

Scope

This program covers the servicing and maintenance of machines and equipment in which the unexpected energization or startup of the machines or equipment, or release of stored energy, could harm employees.

- This program applies to the control of energy during servicing and/or maintenance of machines and equipment. Such energy includes, but is not limited to:
    - Electrical,
    - Steam,
    - Hydraulic, and
    - Gravity.
- Normal production operations are not covered by this standard (see the Machine Guarding Program). Servicing and/or maintenance that takes place during normal production operations is covered by this standard only if:
    - An employee is required to remove or bypass a guard or other safety device; or
    - An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.
- Minor tool changes and adjustments and other minor servicing activities that take place during normal production operations are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided the work is performed using alternative measures that provide effective protection (i.e., Machine Guarding).
- This program does not apply to the following:
    - Work on cord- and plug-connected electric equipment, for which exposure to the hazards of unexpected energization or start-up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.
    - Hot tap operations involving transmission and distribution systems for substances, such as gas, steam, water, or petroleum products, when they are performed on pressurized pipelines, provided that the employer demonstrates that:
        - Continuity of service is essential,
        - Shutdown of the system is impractical,
        - Documented procedures are followed, and
        - Special equipment that will provide proven, effective protection for employees is used.

Procedures for Lockout/Tagout

1. **Preparation for shut down –** Authorized employees will refer to company procedures, which will identify the type and magnitude of the energy to be controlled, the methods of controlling the hazardous energy, and means of controlling the hazardous energy.

2. **Notification –** Employees who will be affected by the shutdown of machinery or equipment shall be notified prior to the implementation of lockout/tagout procedures.

3. **Shutdown –** Follow normal shutdown procedures for the specific piece of machinery or equipment.

4. **Isolation –** Deactivate the energy isolating device(s) so the machine or equipment is isolated from the energy source(s).

5. **Apply Locks or Tags –** The application of locks or tags to prevent the accidental reenergization of the machine or equipment to be serviced or maintained. Locks shall be considered the preferred method of isolating energy sources. In the event that the energy-isolating device is not capable of accepting lockout devices, a tagout system shall be utilized (see the following section, Full Employee Protection). The individual placing the lock/tag shall include his/her name on the lock/tag.

6. **Control of Stored or Residual Energy –** The repositioning, blocking, bleeding, etc. of the system to relieve, disconnect, and restrain stored or residual energy. Examples of stored energy can be springs, capacitors, rotating flywheels, hydraulic systems, air, gas, steam, water pressure, etc. Consideration should also be given for energy, which may reaccumulate.

7. **Verification –** The processes of attempting to restart the machine or equipment and using testing equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed, to ensure all energy sources have been properly isolated. Verification shall be performed by a qualified person. Prior to verification of the lockout/tagout procedures, a check of the area shall be conducted to ensure that all personnel are in a safe location. Upon completion of the verification process, all controls shall be returned to their original position.

Full Employee Protection

1. In the event an energy-isolating device is not capable of accepting a lockout device, a tagout system shall be utilized. When a tagout device is used on an energy-isolating device, the tagout device shall be attached at the same location that the lockout device would have been attached, and Celtic Commercial Painting, LLC. will ensure the tagout program provides a level of safety equivalent to that obtained by using a lockout device. To achieve such a level of safety, Celtic Commercial Painting, LLC. will utilize additional safety measures, such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

2. Whenever replacement or major repair, renovation, or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy-isolating devices for such machine or equipment shall be designed to accept a lockout device.

Procedures for Testing or Positioning of Machines

During the course of maintenance and servicing work, machines and equipment may need to be tested or repositioned, which might require the removal of locks and tags and temporary reenergization. When this is required, the following procedures shall be followed:

1. Clear the machines or equipment of tools and materials.
2. Notify employees that will be affected by the reenergization.
3. Remove employees from the machines or equipment area to a safe location.
4. Remove the lockout/tagout devices.
5. Energize and proceed with testing or positioning.
6. Reimplement lockout/tagout procedures once testing or positioning is complete.

Procedures for Removing Locks and Tags

1. Inspect the work area to ensure all tools and materials have been removed from the work area.
2. Remove all personnel from the work area to a safe location.
3. Remove the lockout/tagout devices.
4. Reenergize the equipment.
5. Notify employees affected by the shutdown that the machine or equipment has been put back into service.

Additional Procedures

1. **Implementation of Lockout/Tagout Procedures –** Only authorized employees properly trained in Lockout/Tagout Procedures will be allowed to implement the program.

2. **Multiple Employees Lockout/Tagout Procedures –** When more than one employee will be conducting maintenance or service on a machine or equipment, each employee shall install his or her own personal lock or tag.

3. **Shift Operations –** Oncoming shifts shall verify the lockout/tagout procedures and apply their own locks or tags.

4. **Lock Removal –** No employee shall remove another employee's lockout/tagout devices. If lockout procedures need to be terminated or an employee forgets to remove lockout devices and the employee who implemented the lockout/tagout procedure is unavailable (ex. employee has gone home), management shall make every effort to contact the employee who installed the lockout devices. If attempts to contact the employee are unsuccessful, another authorized employee and supervisor shall inspect the equipment to ensure it is safe to remove the lockout devices. Only supervisors will be allowed to

remove the lockout devices. Upon return to work of the employee who originally implemented the lockout/tagout, he or she shall be notified of the removal.

5. **Outside Contractors –** Outside contractors shall implement the lockout/tagout procedures enforced by their employer. A copy of the contractor's lockout/tagout procedures shall be provided to management prior to the start of work. Employees shall be notified when outside contractor's lockout/tagout procedures are in place and any special precautions need to be taken.

Training

All employees involved in lockout/tagout procedures must receive initial training and retraining when deemed necessary. All training(s) and retrainings shall be documented, signed, certified, and placed in the employee's personnel file. The level of training will depend on the employee's involvement with the lockout/tagout procedures.

1. **Authorized Employee** – Those employees who are charged with the responsibility for implementing the lockout/tagout procedures and performing the servicing or maintenance.

   When working in a group lockout setting, the authorized employee should ascertain the exposure status of individual group members. Each authorized employee shall attach a personal lockout or tagout device to the group's device while he/she is working and then removes it when finished. During shift change or personnel changes, there should be specific procedures to ensure the continuity of lockout or tagout procedures. An authorized employee has primary responsibility for a set number of employees working under the protection of a group lockout or tagout device. Documentation should be specific.

   Training shall include:

   - Recognition of applicable hazardous energy sources,
   - Details about the type and magnitude of the hazardous energy sources present in the workplace, and
   - Methods and means necessary to isolate and control those energy sources.

2. **Affected/Other Employees** – Those employees who operate, use, or work in the area of machines or equipment where servicing or maintenance is being performed under lockout/tagout procedures. These employees will NOT be involved in implementing lockout/tagout procedures nor the servicing, maintenance, or repair of equipment that has been locked out.

   Training shall include:

   - Purpose, function, and restrictions of the lockout/tagout procedures,
   - Authorized employees are the only employees allowed to implement the procedures, and

- Never attempt to energize or operate equipment or machinery that is locked out.

When tagout systems are used, employees shall also be trained in the following limitations of tags:

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

Retraining

Retraining must be provided whenever there is a change in job assignments, machines, equipment, or processes that present a new hazard or change in energy control procedures. Employees may also require retraining if the periodic inspection reveals deficiencies or management has reason to believe there are deviations from inadequacies in the employee's knowledge or use of the energy control procedures.

Periodic Inspection

An inspection shall be conducted periodically, no less frequent than annually, to ensure the lockout/tagout procedures are being implemented properly and authorized employees understand their responsibilities pertaining to the Lockout/Tagout Program. A member of management who is an authorized employee and not involved with the lockout/tagout procedures that are being inspected shall conduct the inspection. The inspector shall be able to identify the following:

1. If the lockout/tagout procedures are being followed.
2. If authorized and affected employees understand their responsibilities pertaining to the Lockout/Tagout Program.
3. If current lockout/tagout procedures are providing adequate protection.
4. What changes need to be implemented.

The inspection shall be documented and include the following information:

1. Identify the machine or equipment on which lockout/tagout procedures were implemented.
2. Date of the inspection.

3. Employee(s) observed in the inspection.
4. Person performing the inspections.
5. Deficiencies discovered and actions taken to correct the deficiencies.

The inspector shall record his or her findings on the Annual Inspection Form and keep the findings on file at the main office.

Requirements for Lockout/Tagout Devices

1. **Durability** – Locks and tags must be able to withstand the environment in which they will be used. Tags must remain legible when used in corrosive or wet environments.

2. **Standardized** – Both lockout and tagout devices must be standardized according to color, shape, or size. Tags must be standardized according to print and format.

3. **Substantial** – Lockout and tagout devices substantial enough to minimize early or accidental removal. Tag attachments must be non-reusable unless attached to a lock.

4. **Identifiable** – Locks and tags must clearly identify the employee who applied them. Tags shall indicate one or more following: DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE.

Lockout/Tagout Audit

Auditor: _____ **Date:** _____

Area	Satisfactory	Action Required	Action completed
Employee Knowledge			
Date of Training			
Purpose of LOTO			
Devices Used			
Procedure Location			
Energy Control Methods			
Programs Administration			
Training Certificates			
Annual Review of Program			
Equipment Procedures			
Annual Proficiency Review			
List of Equipment Issued			
Safeguards			
Engineering Safeguards			
Administrative Safeguards			
Training Safeguards			
Area Inspection			
Standardized Locks and Tags			
Locks Issued to Individuals			
Notification Procedures			
LOTO Procedure Used			
Sufficient Devices Available			

Operational Questions	
	Is all machinery or equipment capable of movement, required to be de-energized or disengaged, and locked out during cleaning, servicing, adjusting, or setting up operations whenever required?
Where the power disconnecting means for equipment does not also disconnect the electrical control circuit:	
	Are the appropriate electrical enclosures identified?
	Is means provided to ensure the control circuit can also be disconnected and locked out?
	Is the locking out of control circuits in lieu of locking out main power disconnects prohibited?
	Are all equipment control valve handles provided with a means for locking out?

	Does the lockout procedure require stored energy (mechanical, hydraulic, air, etc.) be released or blocked before equipment is locked out for repairs?
	Are appropriate employees provided with individually keyed personal safety locks?
	Are employees required to keep personal control of their key(s) while they have safety locks in use?
	Is it required that only the employee exposed to the hazard place or remove the safety lock?
	Is it required that employees check the safety of the lockout by attempting a startup after making sure no one is exposed?
	Are employees instructed to always push the control circuit stop button immediately after checking the safety of the lockout?
	Is there a means provided to identify any or all employees who are working on locked-out equipment by their locks or accompanying tags?
	Are a sufficient number of accident preventive signs or tags and safety padlocks provided for any reasonably foreseeable repair emergency?
	When machine operations, configuration, or size requires the operator to leave his or her control station to install tools or perform other operations and that part of the machine could move if accidentally activated, is such element required to be separately locked or blocked out?
	In the event equipment or lines cannot be shut down, locked out, and tagged, is a safe job procedure established and rigidly followed?

Notes

Lockout/Tagout Annual Inspection

Date: _____

Inspector: _____

Employee(s) Being Inspected: _____

_____

Machine or Equipment: _____

_____

_____

Deficiencies: _____

_____

_____

_____

_____

_____

_____

_____

Recommendations: _____

_____

_____

_____

_____

_____

_____

_____

Inspector's Signature: _____

Lockout/Tagout Inspection

Manager/Supervisor: _____ **Date/Time:** _____

Inspector(s): _____

Yes	No	NA	Cor. Date	Area Inspected
				Are all hazardous energy sources required to be deenergized, disengaged, blocked, or locked out during cleaning, servicing, adjusting, setting up operations, or as required?
				When electrical control circuit cannot be disconnected, are the appropriate electrical enclosures identified?
				When electrical control circuit cannot be disconnected, is a means provided to ensure control circuit that can also be disconnected and locked out?
				Is lockout of control circuits in lieu of locking out main power disconnects prohibited?
				Are all equipment control valve handles provided with a means for lockout?
				Does the lockout procedure require stored energy be released or blocked?
				Are appropriate employees provided with individually keyed personal safety locks?
				Are employees required to keep personal control of their key(s) while they have safety locks in use?
				Is it required that only the employee who is exposed to the hazard place or remove the safety lock?
				Is it required that employees verify equipment lockout by attempting a start-up after making sure no one is exposed?
				Are employees instructed to always push the control circuit stop button prior to reenergizing the main power switch?
				Is a means established to identify any/all employees who are working on locked-out equipment by their locks or accompanying tags?
				In the event equipment or lines cannot be shutdown, locked, and tagged out, is a safe job procedure established and rigidly followed?

Authorized Employee Lockout/Tagout Training Certificate

Name: _____ Department: _____

I understand the training I have received on the mandatory Lockout/Tagout Program. The training consisted of:

- Location of equipment, control operation, and energy isolation points,
- How to safely turn on and off equipment,
- Types and hazards of energy sources,
- Type and magnitude of the energy, and
- Methods and means necessary for energy isolation.

I understand the hazards of electricity, hydraulic force, and machines in motion.

I understand I have been trained to protect myself by not reaching into (breaking the plane) on any machinery until I have personally locked and tagged all sources of energy and ensured the machinery controls have been disabled.

I understand if I chose to isolate a machine energy source by unplugging the power cord, I must be in control of the plug at all time, and I may not leave the area until the machine is in a condition that would allow the machine to be safely plugged into a receptacle.

I acknowledge receipt of necessary locks, hasps, tags, etc. required for effective isolation of electrical power to a single piece of equipment, and I have available (from Supervisors) material needed for isolating hydraulic fluid flow to hydraulic motors. I understand that if I need additional LOTO material, I am accountable for requesting it from a Supervisor in my Department.

I understand VIOLATING THE LOCKOUT/TAGOUT PROCEDURE will result in disciplinary action up to and including termination of employment.

Employee: _____

Trainer Signature: _____ Date: _____

Authorized Employee Lockout/Tagout Annual Certification

The below listed Authorized Employee was observed conducting a Lockout/Tagout. The purpose of this observation is to ensure this employee understands the procedures used at this facility for the control of energy associated with equipment. The below listed employee successfully conducted the Lockout/Tagout and understands the 10-step procedure listed below.

Employee: _____ Date: _____

Department: _____ Shift: _____

Selected Piece of Equipment: _____

10-Step Procedure

Installing Locks and Tags

- ☐ Notified affected employees
- ☐ Shutdown equipment
- ☐ Isolated all energy to the equipment
- ☐ Locked and tagged energy controls
- ☐ Released stored and/or residual energy
- ☐ Tested controls to ensure inadvertent startup is not possible

Restoring from Lockout/Tagout

- ☐ Notified the affected employees that the locks and tags are to be removed
- ☐ Checked equipment to ensure all guards are in place and tools are removed
- ☐ Ensured controls were in neutral or off position
- ☐ Properly removed locks and tags, and made equipment ready for use

Changes or Recommendation in Procedure:

_____

_____

_____

Inspector Signature: _____

Employee Signature: _____

Fire Prevention

Purpose

The purpose of this fire prevention plan is to eliminate the causes of fire, prevent loss of life and property by fire, and to comply with the Occupational Safety and Health Administration's (OSHA) standard on fire prevention. It provides employees with information and guidelines that will assist them in recognizing, reporting, and controlling fire hazards.

An effective fire protection program focuses on fire prevention, frequent inspections of the workplace, and recognition of existing and potential fire hazards to achieve a safe work environment.

1. Post the local fire department telephone number within the field office, near the jobsite telephone. Firefighting equipment shall be conspicuously located, readily accessible at all times, and maintained in good, operating condition.

2. A fire alarm device, i.e., telephone system, will be established and maintained for emergency communications with local fire department.

3. Smoking shall be prohibited at or in the vicinity of operations that constitute a fire hazard, and "No Smoking or Open Flame" signs will be conspicuously posted.

4. Hot engine exhaust manifolds must be kept well away from combustible building materials and ventilated to the outside.

5. All building materials shall be stored, handled, and piled with regard to their fire characteristics.

6. Evacuation routes shall be maintained free of obstructions. Flammable materials shall not be stored near ladders, stairways, or scaffolding.

7. Housekeeping shall be maintained to prevent combustible material from accumulating and creating a fire hazard.

8. Flammable chemicals shall only be used for their intended purpose. Only qualified individuals may be authorized to handle/use flammable chemicals.

9. Training requirements for employees will familiarize employees with the general principles of fire extinguisher use and the hazards involved in incipient stage firefighting.

10. Employees shall be trained in extinguishing techniques and classification of fires. The following classificaitons outline the different types of fires:

    Class A: Ordinary combustibles, such as wood or paper. These are fires that require a cooling agent for extinguishing.
    Class B: Flammable petroleum products. These are fires that require a smothering effect for extinguishing.

Class C: Fires in or near energized electrical equipment. These are fires that require a non-conducting extinguishing agent.
Class D: Fires of combustible metals. These are fires that require inhibited chain reactions.

11. Training will be conducted prior to initial assignment and at least annually thereafter.

12. Fire extinguishers shall be located and accessible by all flammable/combustible materials.

13. Only approved containers shall be utilized for the storage and handling of flammable and combustible liquids.

14. Flammable liquid containers shall be clearly labeled and stored in a segregated area.

15. Fire extinguishers shall be visually inspected monthly and removed if damaged or discharged.

16. Fire extinguishers shall undergo an annual maintenance check.

17. Tampering or unauthorized removal of a fire extinguisher is prohibited.

18. Gasoline shall not be used for cleaning of equipment or tools or for starting fires.

19. Gasoline must be transported only in approved, metal, safety containers.

20. Transfer of flammable liquids from one container to another shall be done only when containers are electrically interconnected.

21. Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or tanks within a building or outside only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks is prohibited.

22. Dispensing devices and nozzles for flammable liquids shall be on an approved type.

23. Flammable liquids shall be kept in covered containers when not actually in use.

24. Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.

25. Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 feet of the operation, unless conditions warrant greater clearances.

26. All motors and engines shall be turned off and allowed to cool prior to refueling.

27. Work areas shall be maintained clear of recognizable hazards and employees shall practice good housekeeping.

28. Fight fires by starting at a safe distance, directing the extinguisher at the base of the flames, and moving slowly forward. Use a sweeping motion and extend the charge at least six (6) inches on each side of the flame.

29. All fires, regardless of size, shall be reported and investigated.

30. Flammable or combustible materials will not be stored in areas used for exits, stairways, normally used safe passage routes, near cutting/welding operations, or near operating heating equipment.

31. No more than 25 gallons of flammable liquids shall be stored in a room outside of an approved storage cabinet.

32. Prior to performing hot work, a hazard analysis shall be conducted. If the object to be worked on cannot readily be moved, all moveable fire hazards shall be taken to a safe place. If all fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards. Suitable fire extinguishing equipment shall be immediately available in the work area and maintained in a state of readiness for instant use.

33. When the hot work is such that normal fire prevention precautions are not sufficient, additional personnel (fire watcher) shall be assigned to guard against fire while the actual hot work is being performed, and for a sufficient period of time after completion of the work to ensure no possibility of fire exists. Fire watchers shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used.

34. No hot work shall be performed where the application of flammable paints, presence of other flammable compounds, or heavy dust concentrations creates a hazard.

35. Do not heat asphalt beyond the temperature recommended by the manufacturer.

36. Never leave a saturated asphalt mop on the roof. When done using the mop, spin out the excess asphalt, submerge it in water, and store it in a sealed metal container.

37. In cases of excessive use of bottled gas, torches, welding or flammable liquids, the local fire department will be notified prior to use.

38. All cutting torches and welders will have fire extinguishers at the equipment storage location and the area of operating use.

39. All bottled gases will be properly secured and stored in properly ventilated areas.

40. The building perimeter and exit doors shall remain as clear of obstructions as possible to benefit emergency vehicle access.

41. Liquefied petroleum gas storage, use, and handling will be maintained according to 29 CFR 1926.153.

42. Propane cylinders shall be secured, maintained in an upright position, and maintained at least 10 feet from kettle burners.

43. Propane cylinders shall not be hoisted by their valves or protective collar.

44. Carts used to transport propane cylinders shall be stable.

45. The torch flame shall not be applied to a combustible substrate for the membrane.

46. The flame of the torch shall not come into direct contact with wood nailers, cant strips, or metal flashing.

47. A torch shall not be used in areas where the flame impingement cannot be fully viewed.

48. The propane cylinder shall be sized for the torch used.

49. Propane cylinders shall never be placed on their side or heated with a torch flame.

50. A spark igniter shall be used to light the torch. Never use a cigarette lighter.

51. A fire watch shall be conducted for at least 2 hours after torches have been extinguished.

52. Temporary heating devices shall comply with 29 CFR 1926.154.

53. Portable heaters shall be equipped with approved, automatic fuel shut off devices. These units must not be located within 20 feet of any other portable heater or combustible liquids or materials. All non-integral heater/container unit fuel cells must be located at least 6 feet away and at the opposite end of the heater discharge opening.

HOT WORK PERMIT

BEFORE INITIATING HOT WORK, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE AN APPROPRIATE FIRE EXTINGUISHER IS READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and /or sparks.
This includes, but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torching,, and Cadwelding.

INSTRUCTIONS

A. Verify precautions listed at right (or do not proceed with the work).
B. Complete and retain this permit.

HOT WORK BEING DONE BY:
☐ EMPLOYEE
☐ CONTRACTOR _____

DATE	JOB NO

LOCATION/BUILDING & FLOOR

NATURE OF JOB/OBJECT

NAME OF PERSON DOING HOT WORK

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for work.

Permit Authorizing Individual (PAI) SIGNATURE:

PERMIT EXPIRES	DATE	TIME AM/PM

THIS PERMIT IS GOOD FOR ONE SHIFT ONLY!

REQUIRED PRECAUTIONS CHECKLIST

☐ Available sprinklers, hose streams, and/or extinguishers are in service/operable.
☐ Hot work equipment in good repair.

Requirements within 35 ft. (10m) of work

☐ Flammable liquids, dust, lint, and oil deposits removed.
☐ Explosive atmosphere in area eliminated.
☐ Floors swept clean.
☐ Combustible floors wet down, covered with damp sand or fire-resistant sheets.
☐ Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins or metal shields.
☐ All wall and floor openings covered.
☐ Fire-resistant tarpaulins suspended beneath work.

Work on walls or ceiling/enclosed equipment

☐ Construction is noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls moved away.
☐ Danger exists by conduction of heat into another area.
☐ Enclosed equipment cleaned of all combustibles.
☐ Containers purged of flammable liquids/vapors.

Fire watch/hot work area monitoring

☐ Fire watch will be provided during and for 30 minutes after work, including any coffee or lunch breaks.
☐ Fire watch is supplied with suitable extinguishers.
☐ Fire watch is trained in use of this equipment and in sounding the alarm.
☐ Fire watch may be required for adjoining areas, above, and below.
☐ Monitor hot work area for 30 minutes after job is completed.

Other precautions taken

☐ Confined space entry permit required.
☐ Fire Protection Impairment Permit
☐ Is area protected with smoke or heat detection
☐ Ample ventilation to remove smoke/vapor from work area.
☐ Lockout/tagout required.
☐ Disable detectors.
☐ _____
_____
☐ _____
_____

Fall Protection

Scope and Application

This Fall Protection Program sets forth requirements and criteria for fall protection in construction workplaces covered under 29 CFR Part 1926.

Exception: The provisions of this program do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of construction work or after all construction work has been completed.

Definition

Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices.

Body belt (safety belt) means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness means straps that may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching it to other components of a personal fall arrest system.

Buckle means any device for holding the body belt or body harness closed around the employee's body.

Connector means a device that is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system, such as a buckle or D-ring sewn into a body belt or body harness or a snaphook spliced or sewn to a lanyard or self-retracting lanyard.

Controlled access zone (CAZ) means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and access to the zone is controlled.

Dangerous equipment means equipment, such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units, which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

Deceleration device means any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration distance means the additional vertical distance a falling employee travels, excluding lifeline elongation and free-fall distance, before stopping from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall and the location of that attachment point after the employee comes to a full stop.

Equivalent means alternative designs, materials, or methods to protect against a hazard that the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials, or designs specified in the standard.

Failure means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Free-fall means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free-fall distance means the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail system means a barrier erected to prevent employees from falling to lower levels.

Hole means a gap or void 2 inches (5.1 cm) or more in its least dimension in a floor, roof, or other walking/working surface.

Infeasible means it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

Lanyard means a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Leading edge means the edge of a floor, roof, or formwork for a floor or other walking/working surface, such as the deck, which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Low-slope roof means a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

Lower levels means those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Mechanical equipment means all motor- or human-propelled, wheeled equipment used for roofing work, except wheelbarrows and mop carts.

Opening means a gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

Overhand bricklaying and related work means the process of laying bricks and masonry units, such that the surface of the wall to be jointed is on the opposite side of the wall from the mason requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning device system means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands-free while leaning.

Rope grab means a deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

Roof means the exterior surface on the top of a building. This does not include floors or formwork which, because a building has not been completed, temporarily become the top surface of a building.

Roofing work means the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

Safety monitoring system means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-retracting lifeline/lanyard means a deceleration device containing a drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snaphook means a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks are generally one of two types:

9. The locking type with a self-closing, self-locking keeper that remains closed and locked until unlocked and pressed open for connection or disconnection; or

10. The non-locking type with a self-closing keeper that remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snaphook as part of personal fall arrest systems and positioning device systems is prohibited.

Steep roof means a roof having a slope greater than 4 in 12 (vertical to horizontal).

Toeboard means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

Unprotected sides and edges means any side or edge, except at entrances to points of access, of a walking/working surface, e.g., floor, roof, ramp, or runway, where there is no wall or guardrail system at least 39 inches high.

Walking/working surface means any surface, whether horizontal or vertical, on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel, but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Warning line system means a barrier erected on a roof to warn employees they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

Work area means that portion of a walking/working surface where job duties are being performed.

Duty to Have Fall Protection

Fall protection required by this section shall conform to the criteria set forth in the section of this program titled “Fall Protection**.**”

Celtic Commercial Painting, LLC. shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.

Unprotected Sides and Edges

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge that is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

Leading Edges

Each employee who is constructing a leading edge 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

Exception: When Celtic Commercial Painting, LLC. can demonstrate it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of this program.

Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, Celtic Commercial Painting, LLC. has the burden of establishing that it is appropriate to implement a fall protection plan for a particular workplace situation, in lieu of implementing any of those systems.

Each employee on a walking/working surface 6 feet or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

Hoist Areas

Each employee in a hoist area shall be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, (or chain, gate, or guardrail) or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.

Holes

- Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.
- Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) by covers.
- Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers.

Formwork and Reinforcing Steel

Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

Ramps, Runways, and Other Walkways

Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet or more to lower levels by guardrail systems.

Excavations

- Each employee at the edge of an excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier.
- Each employee at the edge of a well, pit, shaft, or similar excavation 6 feet or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

Dangerous Equipment

- Each employee less than 6 feet above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.
- Each employee 6 feet or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

Overhand Bricklaying and Related Work

- Each employee performing overhand bricklaying and related work 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or shall work in a controlled access zone.
- Each employee reaching more than 10 inches below the level of the walking/working surface on which they are working shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

Roofing Work on Low-Slope Roofs

Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs 50-feet or less in width (see Appendix 1), the use of a safety monitoring system alone, i.e., without the warning line system, is permitted.

Steep Roofs

Each employee on a steep roof with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

Precast Concrete Erection

Each employee engaged in the erection of precast concrete members (including, but not limited to the erection of wall panels, columns, beams, and floor and roof "tees") and related operations, such as grouting of precast concrete members, who is 6 feet or more above lower levels, shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems, unless another provision of this program provides for an alternative fall protection measure.

Exception: When Celtic Commercial Painting, LLC. can demonstrate it is infeasible or creates a greater hazard to use these systems, Celtic Commercial Painting, LLC. shall develop and implement a fall protection plan that meets the requirements of this program.

Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, Celtic Commercial Painting, LLC. has the burden of establishing that it is appropriate to implement a fall protection plan for a particular workplace situation, in lieu of implementing any of those systems.

Residential Construction

Each employee engaged in residential construction activities 6 feet or more above lower levels shall be protected by guardrail systems, safety net system, or personal fall arrest system, unless another provision of this program provides for an alternative fall protection measure.

Exception: When Celtic Commercial Painting, LLC. can demonstrate it is infeasible or creates a greater hazard to use these systems, Celtic Commercial Painting, LLC. shall develop and implement a fall protection plan which meets the requirements of this program.

Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, Celtic Commercial Painting, LLC. has the burden of establishing that it is appropriate to implement a fall protection plan for a particular workplace situation, in lieu of implementing any of those systems.

Wall Openings

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside, bottom edge of the wall opening is 6 feet or more above lower levels

and the inside, bottom edge of the wall opening is less than 39 inches above the walking/working surface shall be protected from falling by the use of a guardrail system, safety net system, or personal fall arrest system.

Walking/Working Surfaces Not Otherwise Addressed

Each employee on a walking/working surface 6 feet or more above lower levels shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

Protection from Falling Objects

When an employee is exposed to falling objects, Celtic Commercial Painting, LLC. shall have each employee wear a hard hat and implement one of the following measures:

1. Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels;

2. Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so those objects would not go over the edge if they were accidentally displaced; or,

3. Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so those objects would not go over the edge if they were accidentally displaced.

Fall Protection Systems Criteria and Practices

General

1. Fall protection systems shall comply with the applicable provisions of this program.

2. Celtic Commercial Painting, LLC. shall provide and install all fall protection systems required by this program for an employee and comply with all other pertinent requirements of this program before that employee begins the work that necessitates the fall protection.

Guardrail Systems

Guardrail systems and their use shall comply with the following provisions:

1. Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches plus or minus 3 inches above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this section.

Note: When employees are using stilts, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the height of the stilts.

2. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches high.
    - Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.
    - Screens and mesh, when used, shall extend from the top rail to the walking/working level and along the entire opening between top rail supports.
    - Intermediate members (such as balusters), when used between posts, shall be not more than 19 inches apart.
    - Other structural members, such as additional midrails and architectural panels, shall be installed such that there are no openings in the guardrail system that are more than 19 inches wide.

3. Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.

3. When the 200-pound test load is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches above the walking/working level.

4. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

5. Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

6. The ends of all top rails and midrails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.

7. Steel banding and plastic banding shall not be used as top rails or midrails.

8. Top rails and midrails shall be at least one-quarter inch nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high-visibility material.

9. When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

10. When guardrail systems are used at holes, they shall be erected on all unprotected sides or edges of the hole.

11. When guardrail systems are used around holes used for the passage of materials, the hole shall have not more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover, or a guardrail system shall be provided along all unprotected sides or edges.

12. When guardrail systems are used around holes that are used as points of access, such as ladderways, they shall be provided with a gate or so offset that a person cannot walk directly into the hole.

13. Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.

14. Manila, plastic, or synthetic rope being used for top rails or midrails shall be inspected as frequently as necessary to ensure it continues to meet the strength requirements of this section.

Safety Net Systems

Safety net systems and their use shall comply with the following provisions:

1. Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed.

2. Safety nets shall extend outward from the outermost projection of the work surface as follows:

Vertical Distance from Working Level to Horizontal Plane of the Net	Minimum Required Horizontal Distance of Outer Edge of the Net from the Edge of the Working Surface
Up to 5 feet	8 feet
More than 5 feet, up to 10 feet	10 feet
More than 10 feet	13 feet

3. Safety nets shall be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test.

4. Safety nets and their installations shall be capable of absorbing an impact force equal to that produced by the drop test.

    - Except as provided in paragraph below of this section, safety nets and safety net installations shall be drop-tested at the jobsite after initial installation and before

being used as a fall protection system, whenever relocated, after major repair, and at 6-month intervals if left in one place. The drop-test shall consist of a 400-pound bag of sand 30 plus or minus 2 inches in diameter dropped into the net from the highest walking/working surface at which employees are exposed to fall hazards, but not from less than 42 inches above that level.

- When Celtic Commercial Painting, LLC. can demonstrate that it is unreasonable to perform the drop-test required by the above paragraph, Celtic Commercial Painting, LLC. (or a designated competent person) shall certify the net and net installation is in compliance with the provisions of the paragraphs above of this section by preparing a certification record prior to the net being used as a fall protection system. The certification record must include an identification of the net and net installation for which the certification record is being prepared; the date that it was determined that the identified net and net installation were in compliance with the above paragraph of this section and the signature of the person making the determination and certification. The most recent certification record for each net and net installation shall be available at the jobsite for inspection.

5. Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Defective components shall be removed from service. Safety nets shall also be inspected after any occurrence that could affect the integrity of the safety net system.

6. Materials, scrap pieces, equipment, and tools that have fallen into the safety net shall be removed as soon as possible from the net and at least before the next work shift.

7. The maximum size of each safety net mesh opening shall not exceed 36 square inches nor be longer than 6 inches on any side, and the opening, measured center-to-center of mesh ropes or webbing, shall not be longer than 6 inches. All mesh crossings shall be secured to prevent enlargement of the mesh opening.

8. Each safety net (or section of it) shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

9. Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

Personal Fall Arrest Systems

Personal fall arrest systems and their use shall comply with the provisions set forth below. **Body belts are not acceptable as part of a personal fall arrest system.**

Note: The use of a body belt in a positioning device system is acceptable and is regulated under positioning device systems of this program.

1. Connectors shall be drop forged, pressed, or formed steel, or made of equivalent materials.

2. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

3. D-rings and snaphooks shall have a minimum tensile strength of 5,000 pounds.

4. D-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.

5. Snap hooks shall be a locking-type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.

6. Unless the snaphook is a locking type **and** designed for the following connections, snaphooks shall not be engaged:

    - Directly to webbing, rope, or wire rope,
    - To each other,
    - To a D-ring to which another snaphook or other connector is attached,
    - To a horizontal lifeline, or
    - To any object that is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.

7. On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

8. Horizontal lifelines shall be designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two.

9. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

    - Except as provided in the below paragraph of this section, when vertical lifelines are used, each employee shall be attached to a separate lifeline.
    - During the construction of elevator shafts, two employees may be attached to the same lifeline in the hoistway, provided both employees are working atop a false car that is equipped with guardrails, the strength of the lifeline is 10,000 pounds (5,000 pounds per employee attached), and all other criteria specified in this paragraph for lifelines have been met.

10. Lifelines shall be protected against being cut or abraded.

11. Self-retracting lifelines and lanyards that automatically limit free-fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully-extended position.

12. Self-retracting lifelines and lanyards that do not limit free-fall distance to 2 feet or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully-extended position.

13. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

14. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

    - As part of a complete personal fall arrest system that maintains a safety factor of at least two; and
    - Under the supervision of a qualified person.

Note: For work involving the erection of tanks and communication and broadcast towers, lifelines shall be secured above the point of operation to an anchorage or structural member capable of supporting a minimum dead weight of 5,400 pounds.

15. Personal fall arrest systems, when stopping a fall, shall:

    - Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness;
    - Be rigged such that an employee can neither free-fall more than 6 feet, nor contact any lower level;
    - Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet; and
    - Have sufficient strength to withstand twice the potential impact energy of an employee free-falling a distance of 6 feet or the free-fall distance permitted by the system, whichever is less.

16. The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head.

17. Body belts, harnesses, and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

18. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

19. Celtic Commercial Painting, LLC. shall provide for prompt rescue of employees in the event of a fall or shall ensure employees are able to rescue themselves.

20. Personal fall arrest systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

21. Body belts shall be at least one and five-eighths (1-5/8) inches wide.

22. Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists.

23. When a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the walking/working surface.

Positioning Device System

1. Positioning devices shall be rigged such that an employee cannot free-fall more than 2 feet.

2. Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

3. Connectors shall be drop forged, pressed, or formed steel, or made of equivalent materials.

4. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of this system.

5. Connecting assemblies shall have a minimum tensile strength of 5,000 pounds.

6. D-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.

7. Snaphooks shall be a locking-type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.

8. Unless the snaphook is a locking type **and** designed for the following connections, snaphooks shall not be engaged:

    - Directly to webbing, rope, or wire rope;
    - To each other;
    - To a D-ring to which another snaphook or other connector is attached;
    - To a horizontal lifeline; or
    - To any object that is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.

9. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.

10. Body belts, harnesses, and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

Warning Line Systems

1. The warning line shall be erected around all sides of the roof work area.

    - When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet from the roof edge.
    - When mechanical equipment is being used, the warning line shall be erected not less than 6 feet from the roof edge that is parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge that is perpendicular to the direction of mechanical equipment operation.
    - Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.
    - When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area.

2. Warning lines shall consist of ropes, wires, or chains, and supporting stanchions erected as follows:

    - The rope, wire, or chain shall be flagged at not more than 6-foot intervals with high-visibility material;
    - The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface;
    - After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;
    - The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and, after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to it; and
    - The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

3. No employee shall be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.

4. Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

Controlled Access Zones

1. When used to control access to areas where leading edge and other operations are taking place, the controlled access zone shall be defined by a control line or by any other means that restricts access.

    - When control lines are used, they shall be erected not less than 6 feet nor more than 25 feet from the unprotected or leading edge, except when erecting precast concrete members.
    - When erecting precast concrete members, the control line shall be erected not less than 6 feet nor more than 60 feet or half the length of the member being erected, whichever is less, from the leading edge.
    - The control line shall extend along the entire length of the unprotected or leading edge and be approximately parallel to the unprotected or leading edge.
    - The control line shall be connected on each side to a guardrail system or wall.

2. When used to control access to areas where overhand bricklaying and related work are taking place:

    - The controlled access zone shall be defined by a control line erected not less than 10 feet nor more than 15 feet from the working edge.
    - The control line shall extend for a distance sufficient for the controlled access zone to enclose all employees performing overhand bricklaying and related work at the working edge and shall be approximately parallel to the working edge.
    - Additional control lines shall be erected at each end to enclose the controlled access zone.
    - Only employees engaged in overhand bricklaying or related work shall be permitted in the controlled access zone.

3. Control lines shall consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:

    - Each line shall be flagged or otherwise clearly marked at not more than 6-foot intervals with high-visibility material.
    - Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches from the walking/working surface and its highest point is not more than 45 inches (50 inches when overhand bricklaying operations are being performed) from the walking/working surface.
    - Each line shall have a minimum breaking strength of 200 pounds.

4. On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones shall be enlarged, as necessary, to enclose all points of access, material handling areas, and storage areas.

5. On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

Safety Monitoring Systems

1. Celtic Commercial Painting, LLC. shall designate a competent person to monitor the safety of other employees and the employer shall ensure the safety monitor complies with the following requirements:

    - The safety monitor shall be competent to recognize fall hazards;
    - The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner;
    - The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored;
    - The safety monitor shall be close enough to communicate orally with the employee; and
    - The safety monitor shall not have other responsibilities that could take the monitor's attention from the monitoring function.

2. Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-slope roofs.

3. No employee, other than an employee engaged in roofing work (on low-sloped roofs) or an employee covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

4. Each employee working in a controlled access zone shall be directed to comply promptly with fall hazard warnings from safety monitors.

Covers

Covers for holes in floors, roofs, and other walking/working surfaces shall meet the following requirements:

1. Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.

2. All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

3. All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.

4. All covers shall be color coded or they shall be marked with the word “HOLE” or “COVER” to provide warning of the hazard.

Note: This provision does not apply to cast iron manhole covers or steel grates used on streets or roadways.

Protection from Falling Objects

1. Toeboards, when used as falling object protection, shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

2. Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or outward direction at any point along the toeboard.

3. Toeboards shall be a minimum of 3-1/2 inches in vertical height from their top edge to the level of the walking/working surface. They shall have not more than 1/4 inch clearance above the walking/working surface. They shall be solid or have openings not over 1 inch in greatest dimension.

4. Where tools, equipment, or materials are piled higher than the top edge of a toeboard, paneling or screening shall be erected from the walking/working surface or toeboard to the top of a guardrail system’s top rail or midrail, for a distance sufficient to protect employees below.

5. Guardrail systems, when used as falling object protection, shall have all openings small enough to prevent passage of potential falling objects.

6. During the performance of overhand bricklaying and related work:

    - No materials or equipment, except masonry and mortar, shall be stored within 4 feet of the working edge.
    - Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear from the work area by removal at regular intervals.

7. During the performance of roofing work:

    - Materials and equipment shall not be stored within 6 feet of a roof edge, unless guardrails are erected at the edge.
    - Materials that are piled, grouped, or stacked near a roof edge shall be stable and self-supporting.

8. Canopies, when used as falling object protection, shall be strong enough to prevent collapse and penetration by any objects that may fall onto the canopy.

Fall Protection Plan

This option is available only to employees engaged in leading edge work, precast concrete erection work, or residential construction work who can demonstrate it is infeasible or creates a

greater hazard to use conventional fall protection equipment. The fall protection plan must conform to the following provisions:

1. The fall protection plan shall be prepared by a qualified person and developed specifically for the site where the leading edge work, precast concrete work, or residential construction work is being performed and the plan must be maintained up to date.

2. Any changes to the fall protection plan shall be approved by a qualified person.

3. A copy of the fall protection plan with all approved changes shall be maintained at the jobsite.

4. The implementation of the fall protection plan shall be under the supervision of a competent person.

5. The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety nets systems) are infeasible or why their use would create a greater hazard.

6. The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.

7. The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones, and Celtic Commercial Painting, LLC. must comply.

8. Where no other alternative measure has been implemented, Celtic Commercial Painting, LLC. shall implement a safety monitoring system.

9. The fall protection plan must include a statement that provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones.

10. In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g., new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents.

Training Requirements

1. Celtic Commercial Painting, LLC. shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and train each employee in the procedures to be followed in order to minimize these hazards.

2. Celtic Commercial Painting, LLC. shall ensure each employee has been trained, as necessary, by a competent person qualified in the following areas:

    - The nature of fall hazards in the work area;
    - The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
    - The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
    - The role of each employee in the safety monitoring system when this system is used;
    - The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
    - The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
    - The role of employees in fall protection plans; and
    - The requirements of this program.

Certification of Training

1. Celtic Commercial Painting, LLC. shall verify compliance of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

2. The latest training certification shall be maintained.

Retraining

When Celtic Commercial Painting, LLC. has reason to believe any affected employee who has already been trained does not have the understanding and skill required of this section, Celtic Commercial Painting, LLC. shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

1. Changes in the workplace render previous training obsolete,

2. Changes in the types of fall protection systems or equipment to be used render previous training obsolete, or

3. Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate the employee has not retained the requisite understanding or skill.

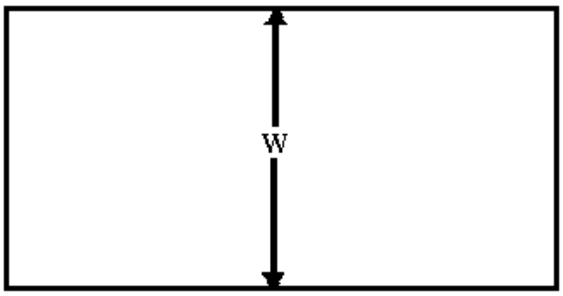
Appendix 1 – Guidelines for Determining Roof Widths

1. This Appendix serves as a guideline to assist in complying with the requirements of Roofing Work on Low-Slope Roofs. These guidelines allow the use of a safety monitoring system alone as a means of providing fall protection during the performance of roofing operations on low-sloped roofs 50 feet or less in width. Each example in the appendix shows a roof plan or plans and indicates where each roof or roof area is to be measured to determine its width. Section views or elevation views are shown where appropriate. Some examples show “correct” and “incorrect” subdivisions of irregularly shaped roofs divided into smaller, regularly shaped areas. In all examples, the dimension selected to be the width of an area is the lesser of the two primary dimensions of the area, as viewed from above. Example 1 shows that on a simple rectangular roof, width is the lesser of the two primary overall dimensions. This is also the case with roofs that are sloped toward or away from the roof center, as shown in Example 2.

2. Many roofs are not simple rectangles. Such roofs may be broken down into subareas as shown in Example 3. The process of dividing a roof area can produce many different configurations. Example 3 gives the general rule of using dividing lines of minimum length to minimize the size and number of the areas that are potentially less than 50 feet wide. The intent is to minimize the number of roof areas where safety monitoring systems alone are sufficient protection.

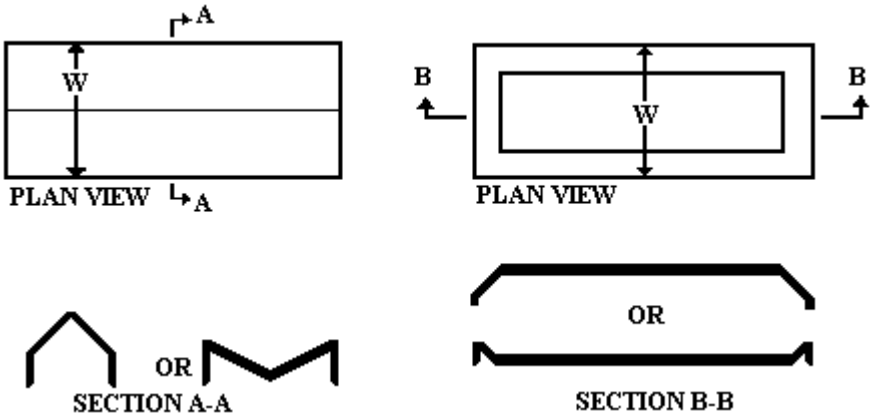
3. Roofs that are comprised of several separate, non-contiguous roof areas, as in Example 4, may be considered as a series of individual roofs. Some roofs have penthouses, additional floors, courtyard openings, or similar architectural features; Example 5 shows how the rule for dividing roofs into subareas is applied to such configurations. Irregular, non-rectangular roofs must be considered on an individual basis, as shown in Example 6.

Example 1 – Rectangular Shaped Roofs



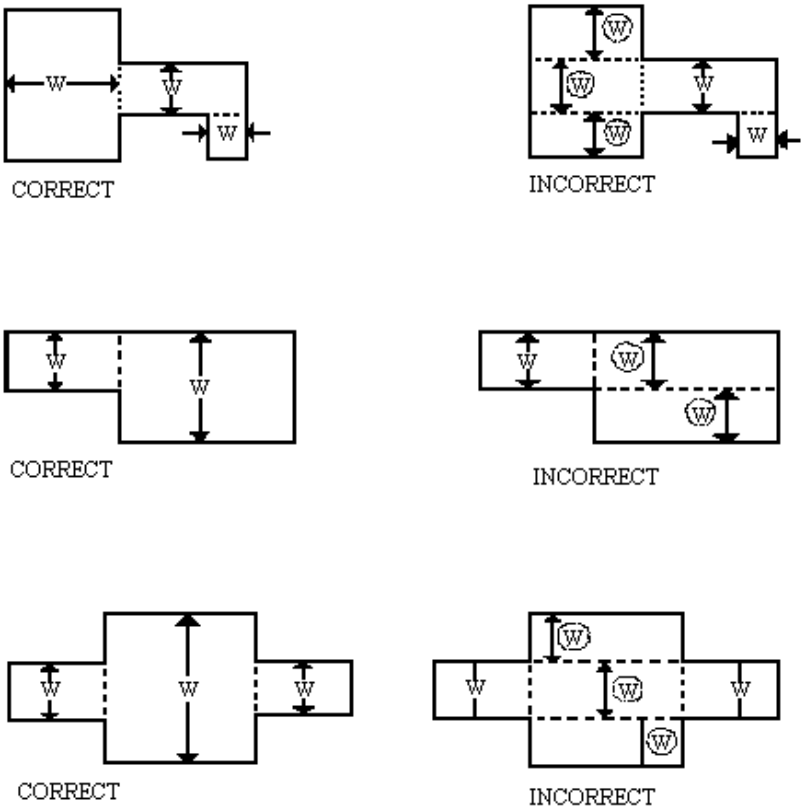
PLAN VIEW

Example 2 – Sloped, Rectangular Shaped Roofs

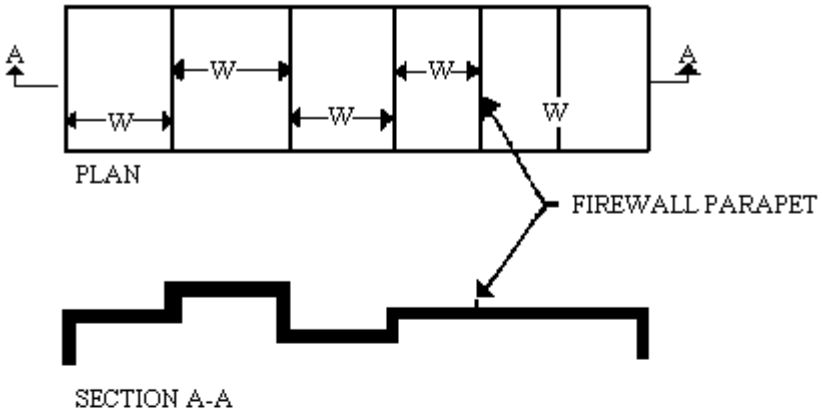


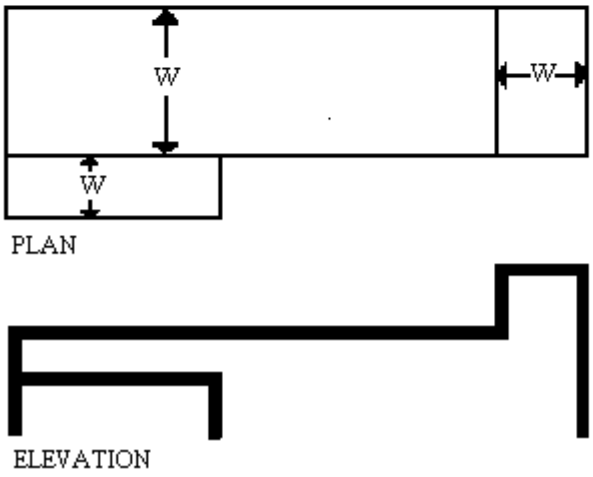
Example 3 – Irregularly Shaped Roofs with Rectangular Shaped Sections

Such roofs are to be divided into sub-areas by using dividing lines of minimum length to minimize the size and number of the areas that are potentially less than or equal to 50 feet in width, in order to limit the size of roof areas where the safety monitoring system alone can be used. Dotted lines are used in the examples to show the location of dividing lines. A **circled** "W" denotes incorrect measurements of width.



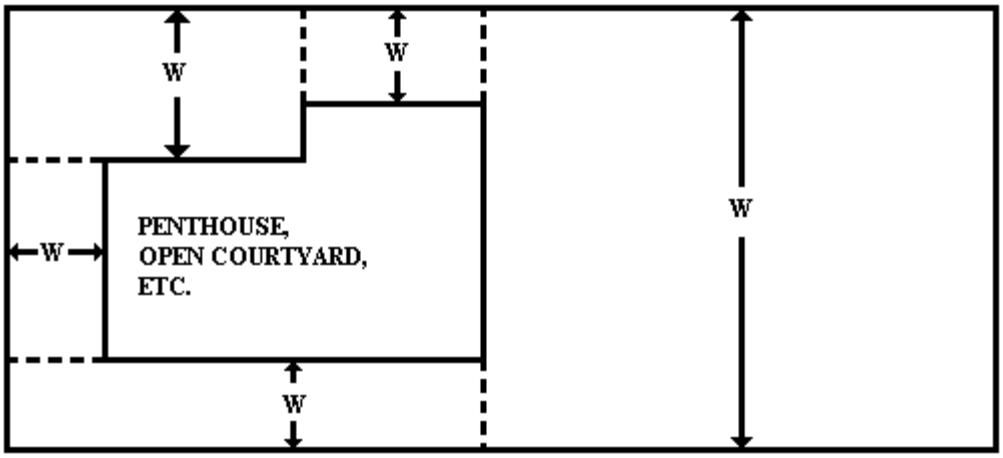
Example 4 – Separate, Non-Contiguous Roof Areas



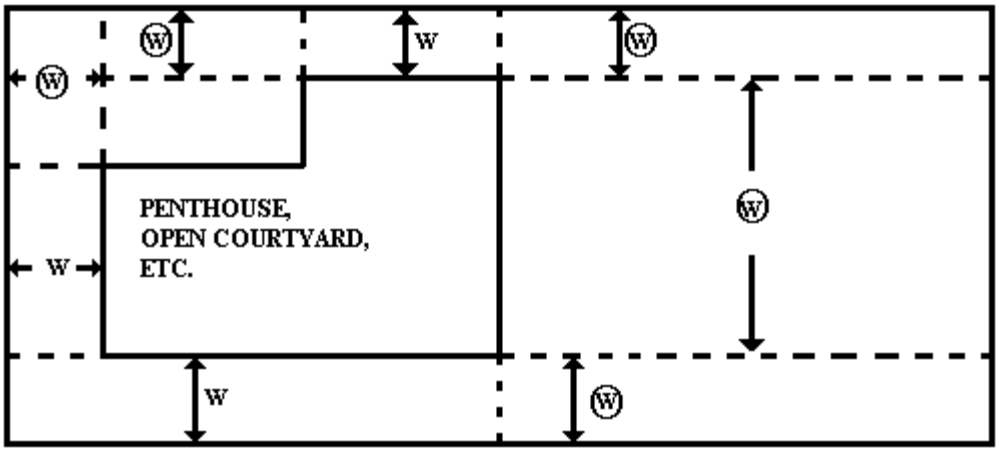


Example 5 – Roofs with Penthouses, Open Courtyards, Additional Floors, Etc.

Such roofs are to be divided into sub-areas by using dividing lines of minimum length to minimize the size and number of the areas that are potentially less than or equal to 50 feet in width, in order to limit the size of roof areas where the safety monitoring system alone can be used. Dotted lines are used in the examples to show the location of dividing lines. “W” denotes incorrect measurements of width.

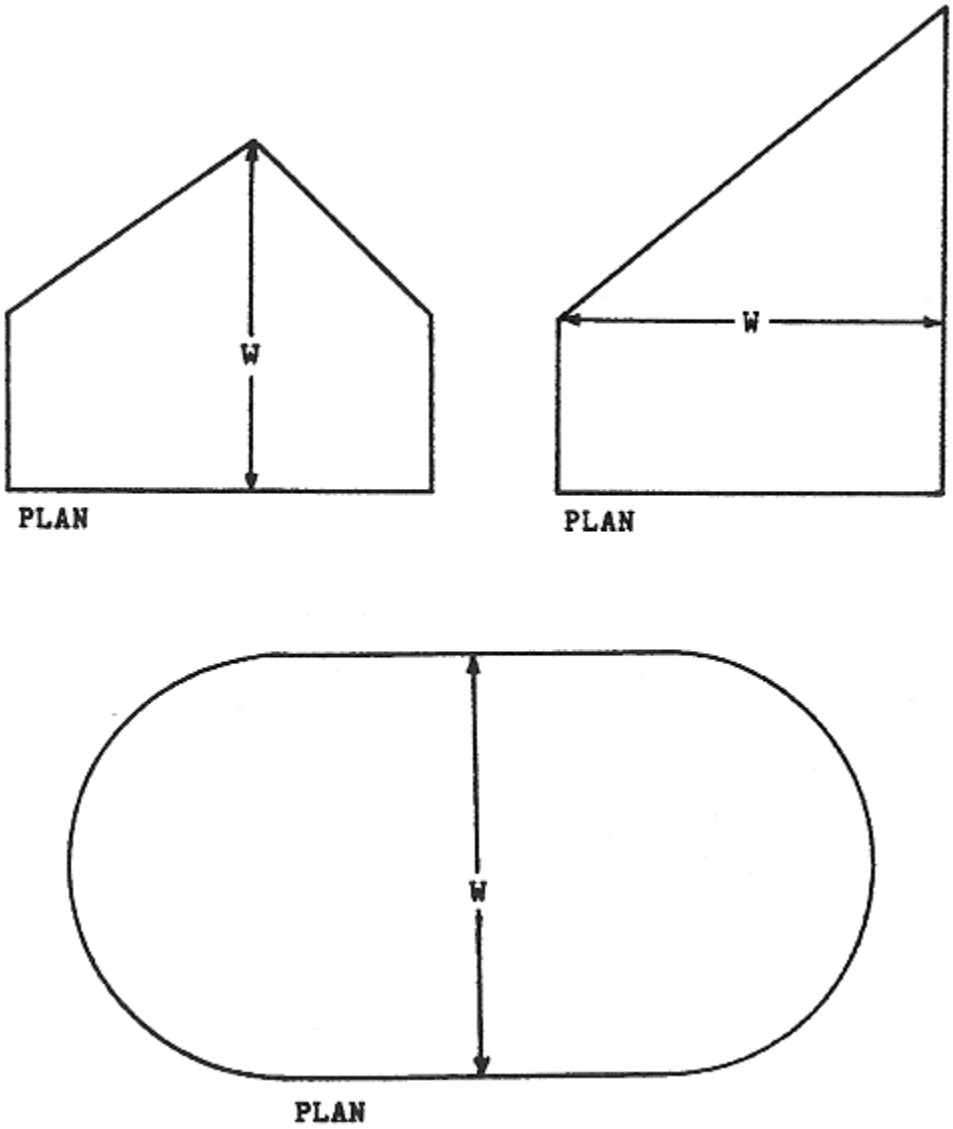


Correct



Incorrect

Example 6 – Irregular, Non-Rectangular Shaped Roofs



Ladders and Stairways

Purpose

The purpose of this program is to ensure employees are protected against the hazards associated with stairways and ladders. This program applies to all stairways and ladders used in construction, except requirements for hook-on, attachable, and stairway-type ladders designed for use with scaffolds and scaffold stair towers, are contained in the Scaffolds section of this manual.

Access Between Elevations

General Requirements

1. Celtic Commercial Painting, LLC. shall provide a stairway or ladder at all personnel points of access where there is a break in elevation of 19 inches or more and no ramp, runway, sloped embankment, or personnel hoist is provided.

2. A double-cleated ladder or two or more separate ladders shall be provided when ladders are the only means of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous, two-way traffic.

3. When a building or structure has only one point of access between levels, that point of access shall be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access shall be provided and used.

4. When a building or structure has two or more points of access between levels, at least one point of access shall be kept clear to permit free passage of employees.

5. Stairway and ladder fall protection systems required by this program shall be installed before employees begin the work that necessitates the installation and use of stairways, ladders, and their respective fall protection systems.

Ladders

General Requirements

1. Ladders and the use of ladders must comply with 29 CFR 1926.1053.

2. Maintain ladders free of oil, grease, and other slipping hazards.

3. Do not load ladders beyond the maximum intended load for which they were built, nor beyond their manufacturer’s rated capacity.

4. Only one employee shall be permitted on a ladder at any one time.

5. Use ladders only for the purpose for which they were designed.

6. Pallets, laddervators, or other non-ladder objects/devices shall not be used as ladders.
7. Use ladders only on stable and level surfaces.
8. Ladders shall be setup and utilized in accordance with the manufacturer specifications.
9. Ladders shall be equipped with slip-resistant feet per manufacturer design.
10. Do not use ladders on slippery surfaces, unless the ladder feet are secured to prevent movement.
11. When ladders are used to gain access to an upper landing surface, the ladder shall be secured at the top to prevent movement in any direction, and the ladder shall extend at least 3 feet above the landing surface to which the ladder is used to gain access.
12. Where ladders could be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, barricades shall be used to keep the activities or traffic away from the ladder.
13. The area around the top and bottom of ladders shall be kept clear.
14. The top of a non-self-supporting ladder shall be placed with the two rails supported equally, unless it is equipped with a single support attachment.
15. Do not move, shift, or extend ladders while in use.
16. Use ladders equipped with nonconductive side rails if the employee or ladder could contact exposed, energized electrical equipment.
17. Employees shall face the ladder at all times.
18. Employees shall maintain three points of contact when on ladders.
19. Do not carry objects or loads that could cause loss of balance and falling.
20. All ladders shall be inspected by a competent person periodically, before each use, and after any occurrence that could affect their safe use.
21. Damaged ladders shall not be used. Damaged ladders shall be removed from service and immediately tagged “DO NOT USE.”
22. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced when the ladder is in position for use.
23. Rungs, cleats, and steps of portable and fixed ladders must not be spaced less than 10 inches apart, nor more than 14 inches apart, along the ladder’s side rails.
24. Rungs, cleats, and steps of step stools must not be less than 8 inches apart, nor more than 12 inches apart, between center lines of the rungs, cleats, and steps.

25. Rungs, cleats, and steps at the base section of extension trestle ladders must not be less than 8 inches nor more than 18 inches apart between center lines of the rungs, cleats, and steps. The rung spacing on the extension section must not be less than 6 inches nor more than 12 inches.

26. Ladders must not be tied or fastened together to create longer sections, unless they are specifically designed for such use.

27. Except when portable ladders are used to gain access to a fixed ladder that has been elevated to limit access, when two or more separate ladders are used to reach an elevated work area, the ladders must be offset with a platform or landing between the ladders. The edges of the landing/platform must be guarded in accordance with the Fall Protection Program of this manual.

28. Ladder components must be surfaced to prevent snagging of clothing and injury from punctures or lacerations.

29. Wood ladders must not be coated with any opaque covering, except for identification or warning label, which may be placed only on one face of a side rail.

30. Single-rail ladders shall not be used.

31. When an employee is using a portable ladder that is supported by a floor, roof, or other walking/working surface that is subject to the requirements of the Fall Protection Program of this manual and a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height by which the employee is positioned above the walking/working surface. Alternatively, the employee shall be protected by a personal fall arrest system or safety net system that meets the requirements of the Fall Protection Program of this manual.

32. When an employee is using a portable ladder that is supported by a floor, roof, or other walking/working surface that is subject to the requirements of the Fall Protection Program of this manual and it is possible for the employee to fall to levels below the walking/working surface that is supporting the ladder, the employee shall be protected by a personal fall arrest system or a safety net system that meets the requirements of the Fall Protection Program of this manual.

Stepladders

1. Do not use the top or top step of a stepladder as a step.

2. Do not use cross bracing on the rear section of stepladders for climbing, unless the ladders are designated and provided with steps for climbing on both front and rear sections.

3. Do not use stepladders to support scaffold planks, unless they are specifically designed for such use, and used in accordance with the manufacturer specifications.

4. Metal spreader or locking devices must be provided on stepladders to hold the front and back sections in an open position when ladders are being used.

5. Never lean a stepladder. The metal spreader or locking device must be fully engaged and stepladder used in its open position, as intended by the manufacturer.

Portable Ladders

1. The minimum clear distance between side rails for all portable ladders must be 11.5 inches.

2. In addition, the rungs and steps of portable metal ladders must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.

3. Non-self-supporting and self-supporting portable ladders must support at least four times the maximum intended load; extra heavy-duty, type 1A metal or plastic ladders must sustain 3.3 times the maximum intended load.

4. When portable ladders are used for access to an upper landing surface, the ladder shall be secured and the side rails shall extend at least 3 feet above the upper landing surface to which the ladder is used to gain access.

5. If a 3-foot extension is not possible because of the ladder's length, the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grab-rail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that the ladder deflection under a load would, by itself, cause the ladder to slip off its support.

6. Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).

Job-Made Ladders

1. Job-made ladders shall be constructed, used, and maintained in accordance with ANSI A14.4.

2. Wood, job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.

3. Job-made ladders shall be secured at each point of support, and shall extend at least 3 feet above the upper landing surface to which the ladder is used to gain access.

Fixed Ladders

1. Fixed ladders must be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet, but the top of the ladder is at a distance greater than 24 feet above lower levels.

2. If the total length of the climb on a fixed ladder equals or exceeds 24 feet, the ladder must be equipped with ladder safety devices, self-retracting lifelines and rest platforms at intervals not to exceed 150 feet, or a cage or well and multiple ladder sections with each ladder sections not to exceed 50 feet in length. These ladder sections must be offset from adjacent sections, and landing platforms must be provided at maximum intervals of 50 feet. Guardrails should be provided along edges of landing platforms in accordance with the Fall Protection Program of this manual.

3. If a fixed ladder is required to be equipped with a ladder safety device or a self-retracting lifeline as described in items 1 and 1 above, employees shall utilize such devices.

4. Fixed ladders shall be utilized in a manner consistent with the manufacturer's intended use.

5. Fixed ladders must be able to support at least two loads of 250 pounds each, concentrated between any two consecutive attachments. Fixed ladders also must support added anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from using ladder safety devices.

6. Individual rung/step ladders must extend at least 42 inches above an access level or landing platform, either by the continuation of the rung spacing as horizontal grab bars, or by providing vertical grab bars that must have the same lateral spacing as the vertical legs of the ladder rails.

7. Each step or rung of a fixed ladder must be able to support a load of at least 250 pounds applied in the middle of the step or rung.

8. The minimum clear distance between the sides of individual rung/step ladders and side rails of other fixed ladders must be 16 inches.

9. Rungs of individual rung/step ladders must be shaped to prevent slipping off the ends of the rungs.

10. Rungs and steps of fixed metal ladders manufactured after March 15, 1991, must be corrugated, knurled, dimpled, coated with skid-resistant material, or treated to minimize slipping.

11. Minimum perpendicular clearance between fixed ladder rungs, cleats, and steps and any obstruction behind the ladder must be 7 inches, except that the clearance for an elevator pit ladder must be 4.5 inches.

12. Minimum perpendicular clearance between the centerline of fixed ladder rungs, cleats, and steps and any obstruction on the climbing side of the ladder must be 30 inches. If obstructions are unavoidable, clearance may be reduced to 24 inches, provided a deflection device is installed to guide workers around the obstruction.

13. Through fixed ladders at their point of access/egress shall have a step-across distance of not less than 7 inches, nor more than 12 inches, as measured from the centerline of the

steps or rungs to the nearest edge of the landing area. A landing platform must be provided if the step-across distance exceeds 12 inches.

14. Fixed ladders without cages or wells must have a least a 15-inch clearance width to the nearest permanent object on each side of the center line of the ladder.

15. Side rails of through- or side-step fixed ladders must extend 42 inches above the top level or landing platform served by the ladder. Parapet ladders must have an access level at the roof if the parapet is cut to permit passage through it. If the parapet is continuous, the access level is the top of the parapet.

16. Steps or rungs for through fixed ladder extensions must be omitted from the extension, and the extension of side rails must be flared to provide between 24 inches and 30 inches clearance between side rails.

17. When ladder safety devices are provided, the maximum clearance distance between side rail extensions must not exceed 36 inches.

18. Fixed ladders must be used at a pitch no greater than 90° from the horizontal, measured from the back side of the ladder.

Defective Ladders

1. Portable ladders with structural defects, such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components, must immediately be marked defective or tagged with “DO NOT USE” or similar language and withdrawn from service until repaired.

2. Fixed ladders with structural defects, such as broken or missing rungs, cleats, or steps or broken or split rails or corroded components, must be withdrawn from service until repaired.

3. Defective fixed ladders are considered withdrawn from use when they are immediately tagged with “DO NOT USE” or similar language or marked in a manner that identifies them as defective, or blocked, such as with a plywood attachment that spans several rungs.

4. Ladder repairs must restore the ladder to a condition meeting its original design criteria before the ladder is returned to use.

Rules for Stairways

Stairways and the use of stairways must comply with 29 CFR 1926.1052.

1. Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than 30 inches in the direction of travel and extend at least 22 inches in width at every 12 feet or less of vertical rise.

2. Stairs shall be installed between 30 and 50 degrees from horizontal.

3. Riser height and tread depth shall be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs. Variations in riser height or tread depth shall not be over ¼ inch in any stairway system.

4. Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20 inches.

5. Metal pan landings and metal pan treads, when used, shall be secured in place before filling with concrete or other material.

6. All parts of stairways shall be free of hazardous projections, such as protruding nails.

7. Slippery conditions on stairways shall be eliminated before the stairways are used to reach other levels.

8. Employees shall not use any spiral stairways that will not be a permanent part of the structure on which construction work is being performed.

9. Indoor stairways shall be illuminated to an intensity of not less than 5 foot-candles.

Temporary Service

The following requirements apply to all stairways as indicated:

1. Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.

2. Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.

3. Treads for temporary service shall be made of wood or other solid material and installed the full width and depth of the stair.

Stair Rail Systems

The following general requirements apply to all stair rail systems:

1. Stairways having four or more risers or rising more than 30 inches, whichever is less, shall be equipped with a stair rail system along each unprotected side or edge and at least one handrail.

2. Stair rail systems shall not be less than 36 inches from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

3. When the top edge of a stair rail system also serves as a handrail, the height of the top edge shall be not more than 37 inches, nor less than 36 inches from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

4. Stair rail systems shall be so surfaced as to prevent injury to employees from punctures or lacerations and snagging of clothing.

5. The ends of star rail systems shall be constructed so as not to constitute a projection hazard.

6. The top rails of stair rail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge in any downward or outward direction at any point along the top edge.

7. Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be provided between the top rail of the stair rail system and the stairway steps.

8. Midrails, when used, shall be located at a height midway between the top edge of the stair rail system and the stairway steps.

9. Screens or mesh, when used, must extend from the top rail to the stairway step and along the opening between top rail supports.

10. When intermediate vertical members, such as balusters, are used between posts, they shall be not more than 19 inches apart.

11. Other structural members, when used, shall be installed such that there are no openings in the star rail system that are more than 19 inches apart.

12. Unprotected sides and edges of stairway landings shall be provided with guardrail systems that meet the requirements of the Fall Protection Program of this manual.

Hand Rails

Requirements for handrails are as follows:

1. Stairways having four or more risers or rising more than 30 inches, whichever is less, shall be equipped with at least one handrail.

2. Handrails shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge in any downward or outward direction at any point along the top edge.

3. Handrails shall not be more than 37 inches, nor less than 30 inches, from the upper surface of the handrail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

Note: When the top edge of a stair rail system also serves as a handrail, the height of the top edge shall be not more than 37 inches, nor less than 36 inches, from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

4. Handrails shall be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.

5. The ends of handrails shall be constructed so as not to constitute a projection hazard.

6. Handrails shall provide an adequate handhold for employees grasping them to avoid falling.

7. Handrails that will not be a permanent part of the structure being built shall have a minimum clearance of 3 inches between the handrail and walls, stair rail systems, and other objects.

8. Winding and spiral stairways shall be equipped with a handrail offset sufficient to prevent walking on those portions of the stairways where the tread width is less than 6 inches.

Training

Celtic Commercial Painting, LLC. will provide a training program for each employee using ladders and stairways, as necessary. The training program will enable each employee to recognize hazards related to ladders and stairways. Employees will be trained in the procedures to be followed to minimize these hazards. Each employee will be trained by a competent person in the following areas, as applicable:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used;
- The proper construction, use, placement, and care in handling of all stairways and ladders;
- The maximum intended load-carrying capacities of ladders; and
- The requirements of this program.

Retraining

Celtic Commercial Painting, LLC. will provide retraining as necessary so each employee maintains the understanding and knowledge acquired through compliance with this program.

Scaffolds

General Requirements

1. Scaffolds shall be designed by a qualified person and constructed and loaded in accordance with that design.

2. Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

Note: This provision is not applicable to suspended scaffold suspension ropes, suspension rope connecting hardware, outrigger beam connections to floors or roofs, outrigger beam counterbalance, or fall protection components on scaffolds.

3. Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.

4. Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.

5. Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

6. The stall load of any scaffold hoist shall not exceed 3 times its rated load.

Scaffold Platforms

1. Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports.

2. There shall be no openings in scaffold platforms more than 1 inch wide.

3. Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches wide. All other scaffold platforms shall be at least 18 inches wide. These provisions do not apply to boatswains' chairs.

4. Except for outrigger scaffold platforms, the front edge of scaffold platforms shall not be more than 14 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are utilized.

5. The front edge of outrigger scaffold platforms shall not be more than 3 inches from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are utilized.

6. Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches.

7. Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches, unless guardrails are used to block employee access to the cantilevered end.

8. Each platform greater than 10 feet in length shall not extend over its support more than 18 inches, unless guardrails are used to block employee access to the cantilevered end.

9. On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate support surface. This provision does not preclude the use of common support members, such as “T” sections, to support abutting planks or hook-on platforms designed to rest on common supports.

10. On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports and shall not be less than 12 inches, unless the platforms are nailed together or otherwise restrained to prevent movement.

11. At all points of a scaffold where the platform changes direction, such as turning a corner, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms which rest at right angles over the same bearer shall be laid second, on top of the first platform.

12. Wood platforms shall not be covered with opaque finishes.

13. Scaffold components manufactured by different manufacturers shall not be intermixed.

14. Scaffold components made of dissimilar metals shall not be used together.

Erection of Supported Scaffolds

1. Celtic Commercial Painting, LLC. shall provide a safe means of access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. Celtic Commercial Painting, LLC. shall have a competent person determine whether it is feasible or would pose a greater hazard to provide and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

2. Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

3. When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level, and are not more than 22 inches apart

vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

4. Cross-braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

5. Celtic Commercial Painting, LLC. shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Employers are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

Supported Scaffolds

1. Supported scaffolds with a height-to-base-width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means as follows:

    - Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer legs.
    - Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet or less thereafter for scaffolds 3 feet wide or less, and every 26 feet or less thereafter for scaffolds greater than 3 feet wide. The top guy, tie, or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties, and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (measured from one end [not both] towards the other).
    - Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or transmitted to the scaffold.

2. Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills, or other adequate firm foundation.

    - Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
    - Unstable objects shall not be used to support scaffolds or platform units.
    - Unstable objects shall not be used as working platforms.
    - Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms, unless they have been specifically designed by the manufacturer for such use.
    - Forklifts shall not be used to support scaffold platforms, unless the entire platform is attached to the fork and the forklift is not moved horizontally while the platform is occupied.

3. Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

Suspension Scaffolds

1. All suspension scaffold support devices, such as outrigger beams, cornice hooks, parapet clamps, and similar devices shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).

2. Suspension scaffold outrigger beams, when used, shall be made of structural metal or equivalent strength material, and shall be restrained to prevent movement.

3. The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights, except masons' multi-point adjustable suspension scaffold outrigger beams shall not be stabilized by counterweights.

    - Before the scaffold is used, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed. In addition, masons' multi-point adjustable suspension scaffold connections shall be designed by an engineer experienced in such scaffold design.
    - Counterweights shall be made of non-flowable material. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.
    - Only those items specifically designed as counterweights shall be used to counterweight scaffold systems. Construction materials, such as, but not limited to, masonry units and rolls of roofing felt, shall not be used as counterweights.
    - Counterweights shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.
    - Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled.
    - Outrigger beams that are not stabilized by bolts or other direct connections to the floor or roof deck shall be secured by tiebacks.
    - Tiebacks shall be equivalent in strength to the suspension ropes.
    - Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). However, where the employer can demonstrate it is not possible to place an outrigger beam perpendicular to the face of the building or structure because of obstructions that cannot be moved, the outrigger beam may be placed at some other angle, provided opposing angle tiebacks are used.
    - Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorages include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

- Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.

4. Suspension scaffold outrigger beams shall be:

    - Provided with stop bolts or shackles at both ends;
    - Securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams;
    - Installed with all bearing supports perpendicular to the beam center line;
    - Set and maintained with the web in a vertical position; and
    - When an outrigger beam is used, the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.

5. Suspension scaffold support devices, such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be:

    - Made of steel, wrought iron, or materials of equivalent strength;
    - Supported by bearing blocks; and
    - Secured against movement by tiebacks installed at right angles to the face of the building or structure, or opposing angle tiebacks shall be installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.
    - Tiebacks shall be equivalent in strength to the hoisting rope.

6. When winding drum hoists are used on a suspension scaffold, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension ropes shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with a means to prevent the end from passing through the hoist.

7. The use of repaired wire rope as suspension rope is prohibited.

8. Wire suspension ropes shall not be joined together, except through the use of eye splice thimbles connected with shackles or cover-plates and bolts.

9. The load end of wire suspension ropes shall be equipped with proper size thimbles and secured by eye-splicing or equivalent means.

10. Ropes shall be inspected for defects by a competent person prior to each workshift and after every occurrence that could affect a rope’s integrity. Ropes shall be replaced if any of the following conditions exist:

- Any physical damage that impairs the function and strength of the rope.
- Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).
- Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
- Abrasion, corrosion, scrubbing, flattening, or peening causing loss of more than one-third of the original diameter of the outside wires.
- Heat damage caused by a torch or any damage caused by contact with electrical wires.

11. Swaged attachments or spliced eyes on wire suspension ropes shall not be used, unless they are made by the wire rope manufacturer or a qualified person.

12. When wire rope clips are used on suspension scaffolds:

    - There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart;
    - Clips shall be installed according to the manufacturer's recommendations;
    - Clips shall be retightened to the manufacturer's recommendations after the initial loading;
    - Clips shall be inspected and retightened to the manufacturer's recommendations at the start of each workshift thereafter;
    - U-bolt clips shall not be used at the point of suspension for any scaffold hoist;
    - When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.

13. Suspension scaffold power-operated hoists and manual hoists shall be tested by a qualified testing laboratory.

14. Gasoline-powered equipment and hoists shall not be used on suspension scaffolds.

15. Gears and brakes of power-operated hoists used on suspension scaffolds shall be enclosed.

16. In addition to the normal operating brake, suspension scaffold power-operated hoists and manually operated hoists shall have a braking device or locking pawl that engages automatically when a hoist makes either of the following uncontrolled movements: an instantaneous change in momentum or an accelerated overspeed.

17. Manually operated hoists shall require a positive crank force to descend.

18. Two-point and multi-point suspension scaffolds shall be tied or otherwise secured to prevent them from swaying, as determined to be necessary, based on an evaluation by a competent person. Window cleaners' anchors shall not be used for this purpose.

19. Devices whose sole function is to provide emergency escape and rescue shall not be used as working platforms. This provision does not preclude the use of systems that are designed to function both as suspension scaffolds and emergency systems.

Scaffold Access

1. When scaffold platforms are more than 24 inches above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers, stairway-type ladders, ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used.

2. Cross-braces shall not be used as a means of access or egress.

3. Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surface.

4. Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold.

5. Hook-on and attachable ladders shall be positioned so their bottom rung is not more than 24 inches above the scaffold supporting level.

6. When hook-on and attachable ladders are used on a scaffold more than 35 feet high, they shall have rest platforms at 35-foot maximum vertical intervals.

7. Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold used.

8. Hook-on and attachable ladders shall have a minimum rung length of 11-½ inches.

9. Hook-on and attachable ladders shall have uniformly spaced rungs with a maximum spacing between rungs of 16-¾ inches.

10. Stairway-type ladders shall:

    - Be positioned such that their bottom step is not more than 24 inches above the scaffold supporting level;
    - Be provided with rest platforms at 12-foot maximum vertical intervals;
    - Have a minimum step width of 16 inches, except that mobile scaffold stairway-type ladders shall have a minimum step width of 11-1/2 inches; and
    - Have slip-resistant treads on all steps and landings.

11. Scaffold stair towers shall meet the following requirements:

    - Stair towers shall be positioned such that their bottom step is not more than 24 inches above the scaffold supporting level.
    - A stair rail consisting of a top rail and a midrail shall be provided on each side of each scaffold stairway.

- The top rail of each stair rail system shall also be capable of serving as a handrail, unless a separate handrail is provided.
- Handrails, and top rails that serve as handrails, shall provide an adequate handhold for employees grasping them to avoid falling.
- Stair rail systems and handrails shall be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
- The ends of stair rail systems and handrails shall be constructed so they do not constitute a projection hazard.
- Handrails, and top rails that are used as handrails, shall be at least 3 inches from other objects.
- Stair rails shall be neither less than 28 inches, nor more than 37 inches, from the upper surface of the stair rail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
- A landing platform at least 18 inches wide by at least 18 inches long shall be provided at each level.
- Each scaffold stairway shall be at least 18 inches wide between stair rails.
- Treads and landings shall have slip-resistant surfaces.
- Stairways shall be installed between 40 and 60 degrees from the horizontal.
- Guardrails meeting the requirements of the Fall Protection section of this Scaffolds Program shall be provided on the open sides and ends of each landing.
- Riser height shall be uniform, within ¼ inch, for each flight of stairs.
- Tread depth shall be uniform, within ¼ inch, for each flight of stairs.

12. Ramps and walkways shall meet the following requirements:

- Ramps and walkways 6 feet or more above lower levels shall have guardrail systems that comply with the Fall Protection Program contained in this manual.
- No ramp or walkway shall be inclined more than a slope of one (1) vertical to three (3) horizontal (20 degrees above the horizontal).
- If the slope of a ramp or a walkway is steeper than one (1) vertical in eight (8) horizontal, the ramp or walkway shall have cleats not more than fourteen inches apart that are securely fastened to the planks to provide footing.

13. Integral prefabricated scaffold access frames shall:

- Be specifically designed and constructed for use as ladder rungs;
- Have a rung length of at least 8 inches;
- Not be used as work platforms;
- Be uniformly spaced within each frame section;
- Be provided with rest platforms at 35-foot maximum vertical intervals on all supported scaffolds more than 35 feet high; and
- Have a maximum spacing between rungs of 16-¾ inches. Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16-¾ inches.

14. Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.

Scaffold Use

1. Scaffolds and scaffold components shall not be loaded in excess of their maximum intended loads or rated capacities, whichever is less.

2. The use of shore or lean-to scaffolds is prohibited.

3. Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift and after any occurrence that could affect a scaffold's structural integrity. If scaffolds are found to be defective or unsafe, the competent person will tag the scaffold out of service. Scaffolds tagged out of service shall not be used.

4. Any part of a scaffold damaged or weakened such that its strength is less than that required by this program shall be immediately repaired, replaced, or removed from service until repaired.

5. Scaffolds shall not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement or, for mobile scaffolds, where the provisions this program are followed (see Mobile Scaffolds section of this program).

6. The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

Insulated Lines

Voltage	Minimum Distance	Alternatives
Less than 300 Volts	3 Feet	
300 to 50,000 Volts	10 Feet	
More than 50,000 Volts	10 Feet + 0.4 inches for each 1,000 Volts over 50,000 Volts	2 times the length of the line insulator, but never less than 10 feet

Uninsulated Lines

Voltage	Minimum Distance	Alternatives
Less than 50,000 Volts	10 Feet	
More than 50,000 Volts	10 Feet + 0.4 inches for each 1,000 Volts over 50,000 Volts	2 times the length of the line insulator, but never less than 10 feet

Note: Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer, and the utility

company, or electrical system operator, has de-energized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

7. Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling, or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

8. Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material, except as necessary for removal of such materials.

9. Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

10. Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.

11. Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.

12. Work on or from scaffolds is prohibited during storms or high winds, unless a competent person has determined it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

13. Debris shall not be allowed to accumulate on platforms.

14. Makeshift devices, such as, but not limited to, boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.

15. Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:

    - When the ladder is placed against a structure that is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder;
    - The platform units shall be secured to the scaffold to prevent their movement;
    - The ladder legs shall be on the same platform, or other means shall be provided to stabilize the ladder against unequal platform deflection; and
    - The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

16. Platforms shall not deflect more than 1/60 of the span when loaded.

17. To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:

    - An insulated thimble shall be used to attach each suspension wire rope to its hanging support, such as cornice hook or outrigger. Excess suspension wire rope and any additional independent lines from grounding shall be insulated;
    - The suspension wire rope shall be covered with insulating material extending at least 4 feet above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so it does not become grounded;
    - Each hoist shall be covered with insulated protective covers;
    - In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure. The size of this conductor shall be at least the size of the welding process work lead, and this conductor shall not be in series with the welding process or the work piece;
    - If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off; and
    - An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

Fall Protection

Each employee on a scaffold more than 10 feet above a lower level shall be protected from falling to that lower level. The type of fall protection required depends on the type of scaffold being utilized, as follows:

1. Each employee on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system.

2. Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system;

3. Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system when the platform is supported by the frame structure and both a personal fall arrest system and a guardrail system when the platform is supported by ropes.

4. For all scaffolds not otherwise specified above, each employee shall be protected by the use of personal fall arrest systems or guardrail systems.

Personal Fall Arrest Systems on Scaffolds

1. In addition to meeting the requirements of the Fall Protection Program of this manual, personal fall arrest systems used on scaffolds shall be attached by a lanyard to a vertical

lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

- When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, independent of the scaffold, and protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.
- When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.
- When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.
- Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, use the same point of anchorage, or attached to the same point on the scaffold or personal fall arrest system.

Guardrail Systems on Scaffolds

1. Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.

2. The top edge height of top rails or equivalent member on supported scaffolds shall be installed between 38 inches and 45 inches above the platform surface. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all of the below requirements.

3. When midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.

4. When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

5. When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform and along the entire opening between the supports.

6. When intermediate members, such as balusters or additional rails, are used, they shall not be more than 19 inches apart.

7. Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds.

8. When the 200-pound load is applied in a downward direction, the top edge shall not drop below a height of 38 inches above the platform surface.

9. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 150 pounds.

10. Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.

11. Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

12. The ends of all rails shall not overhang the terminal posts, except when such overhang does not constitute a projection hazard to employees.

13. Steel or plastic banding shall not be used as a top rail or midrail.

14. Manila or plastic (or other synthetic) rope being used for top rails or midrails shall be inspected by a competent person as frequently as necessary to ensure it continues to meet the strength requirements of this program.

15. Cross-bracing is acceptable in place of a midrail when the crossing point of two braces is between 20 inches and 30 inches above the work platform, or as a top rail when the crossing point of two braces is between 38 inches and 48 inches above the work platform. The end points at each upright shall be no more than 48 inches apart.

Falling Object Protection

1. In addition to wearing hardhats, each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy, or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.

2. Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

- The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area;
- A toeboard shall be erected along the edge of platforms more than 10 feet above lower levels for a distance sufficient to protect employees below;
- Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling, or screening extending from the toeboard or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below;
- A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or
- A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

3. Canopies, when used for falling object protection, shall comply with the following criteria:

    - Canopies shall be installed between the falling object hazard and the employees.
    - When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.
    - Independent support lines and suspension ropes shall not be attached to the same points of anchorage

4. Where used, toeboards shall be:

    - Capable of withstanding, without failure, a force of at least 50 pounds applied in any downward or horizontal direction at any point along the toeboard; and
    - At least 3-½ inches high from the top edge of the toeboard to the level of the walking/working surface. Toeboards shall be securely fastened in place at the outermost edge of the platform and have not more than ¼-inch clearance above the walking/working surface. Toeboards shall be solid or with openings not over one inch in the greatest dimension.

Additional Requirements for Specific Types of Scaffolds

Pole Scaffolds

1. When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced, prior to receiving the new platforms.

2. Cross-bracing shall be installed between the inner and outer sets of poles on double pole scaffolds.

3. Diagonal bracing in both directions shall be installed across the entire inside face of double-pole scaffolds used to support loads equivalent to a uniformly distributed load of 50 pounds or more per square foot.

4. Diagonal bracing in both directions shall be installed across the entire outside face of all double- and single-pole scaffolds.

5. Runners and bearers shall be installed on edge.

6. Bearers shall extend a minimum of 3 inches over the outside edges of runners.

7. Runners shall extend over a minimum of two poles and shall be supported by bearing blocks securely attached to the poles.

8. Braces, bearers, and runners shall not be spliced between poles.

9. Where wooden poles are spliced, the ends shall be squared, and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and extend at least 2 feet on either side of the splice, overlap the abutted ends equally, and have at least the same cross-sectional areas as the pole. Splice plates of other materials of equivalent strength may be used.

10. Pole scaffolds over 60 feet in height shall be designed by a registered professional engineer and constructed and loaded in accordance with that design.

Tube and Coupler Scaffolds

1. When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced prior to receiving the new platforms.

2. Transverse bracing forming an “X” across the width of the scaffold shall be installed at the scaffold ends and at least at every third set of posts horizontally (measured from only one end) and every fourth runner vertically. Bracing shall extend diagonally from the inner or outer posts or runners upward to the next outer or inner posts or runners. Building ties shall be installed at the bearer levels between the transverse bracing and shall conform to the Supported Scaffolds section of this program.

3. On straight run scaffolds, longitudinal bracing across the inner and outer rows of posts shall be installed diagonally in both directions and extend from the base of the end posts upward to the top of the scaffold at approximately a 45 degree angle. On scaffolds whose length is greater than their height, such bracing shall be repeated beginning at least at every fifth post. On scaffolds whose length is less than their height, such bracing shall be installed from the base of the end posts upward to the opposite end posts, and then in alternating directions until reaching the top of the scaffold. Bracing shall be installed as close as possible to the intersection of the bearer and post or runner and post.

4. Where conditions preclude the attachment of bracing to posts, bracing shall be attached to the runners as close to the post as possible.

5. Bearers shall be installed transversely between posts, and when coupled to the posts, shall have the inboard coupler bear directly on the runner coupler. When the bearers are coupled to the runners, the couplers shall be as close to the posts as possible.

6. Bearers shall extend beyond the posts and runners and provide full contact with the coupler.

7. Runners shall be installed along the length of the scaffold and located on both the inside and outside posts at level heights; when tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outside runners.

8. Runners shall be interlocked on straight runs to form continuous lengths and be coupled to each post. The bottom runners and bearers shall be located as close to the base as possible.

9. Couplers shall be of a structural metal, such as drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

10. Tube and coupler scaffolds over 125 feet in height shall be designed by a registered professional engineer and constructed and loaded in accordance with such design.

Fabricated Frame Scaffolds (Tubular Welded Frame Scaffolds)

1. When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.

2. Frames and panels shall be braced by cross, horizontal, or diagonal braces, or a combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so the erected scaffold is always plumb, level, and square. All brace connections shall be secured.

3. Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.

4. Where uplift can occur that would displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means.

5. Brackets used to support cantilevered loads shall:

    - Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames;
    - Not be bent or twisted from these positions; and

- Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold.

6. Scaffolds over 125 feet in height above their base plates shall be designed by a registered professional engineer and constructed and loaded in accordance with such design.

Bricklayers' Square Scaffolds (Squares)

1. Scaffolds made of wood shall be reinforced with gussets on both sides of each corner.

2. Diagonal braces shall be installed on all sides of each square.

3. Diagonal braces shall be installed between squares on the rear and front sides of the scaffold and extend from the bottom of each square to the top of the next square.

4. Scaffolds shall not exceed three tiers in height and be so constructed and arranged that one square rests directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

Horse Scaffolds

1. Scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height, whichever is less.

2. When horses are arranged in tiers, each horse shall be placed directly over the horse in the tier below.

3. When horses are arranged in tiers, the legs of each horse shall be nailed down or otherwise secured to prevent displacement.

4. When horses are arranged in tiers, each tier shall be cross-braced.

Form Scaffolds and Carpenters' Bracket

1. Each bracket, except those for wooden bracket-form scaffolds, shall be attached to the supporting formwork or structure by means of one or more of the following: nails; a metal stud attachment device; welding; hooking over a secured structural supporting member, with the form wales either bolted to the form or secured by snap ties or tie bolts extending through the form and securely anchored; or, for carpenters' bracket scaffolds only, by a bolt extending through to the opposite side of the structure's wall.

2. Wooden bracket-form scaffolds shall be an integral part of the form panel.

3. Folding type metal brackets, when extended for use, shall be either bolted or secured with a locking-type pin.

Roof Bracket Scaffolds

1. Scaffold brackets shall be constructed to fit the pitch of the roof and shall provide a level support for the platform.

2. Brackets, including those provided with pointed metal projections, shall be anchored in place by nails, unless it is impractical to use nails. When nails are not used, brackets shall be secured in place with first-grade manila rope of at least ¾ inch diameter, or equivalent.

Outrigger Scaffolds

1. The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of anchorage, shall be not less than 1-½ times the outboard end in length.

2. Outrigger beams fabricated in the shape of an I-beam or channel shall be placed so the web section is vertical.

3. The fulcrum point of outrigger beams shall rest on secure bearings at least 6 inches in each horizontal dimension.

4. Outrigger beams shall be secured in place against movement and securely braced at the fulcrum point against tipping.

5. The inboard ends of outrigger beams shall be securely anchored, either by means of braced struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or both.

6. The entire supporting structure shall be securely braced to prevent any horizontal movement.

7. To prevent their displacement, platform units shall be nailed, bolted, or otherwise secured to outriggers.

8. Scaffolds and scaffold components shall be designed by a registered professional engineer and constructed and loaded in accordance with such design.

Pump Jack Scaffolds

1. Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive gripping mechanisms to prevent any failure or slippage.

2. Poles shall be secured to the structure by rigid triangular bracing or equivalent at the bottom, top, and other points as necessary. When the pump jack has to pass bracing already installed, an additional brace shall be installed approximately 4 feet above the brace to be passed and left in place until the pump jack has been moved and the original brace reinstalled.

3. When guardrails are used for fall protection, a workbench may be used as the top rail only if it meets the strength and height requirements contained in the Guardrail Systems on Scaffolds section of this Scaffolds program.

4. Work benches shall not be used as scaffold platforms.

5. When poles are made of wood, the pole lumber shall be straight-grained, free of shakes; large, loose, or dead knots; and other defects that might impair strength.

6. When wood poles are constructed of two continuous lengths, they shall be joined together with the seam parallel to the bracket.

7. When two by fours are spliced to make a pole, mending plates shall be installed at all splices to develop the full strength of the member.

Ladder Jack Scaffolds

1. Platforms shall not exceed a height of 20 feet.

2. All ladders used to support ladder jack scaffolds shall meet the requirements of the Ladders and Stairways Program of this manual.

3. Job-made ladders shall not be used to support ladder jack scaffolds.

4. Employees shall not use either of the supporting ladders as a means of access.

5. Ladder jack scaffolds shall be utilized in accordance with the manufacturer specifications.

6. The ladder jack shall be so designed and constructed that it will bear on the side rails and ladder rungs or on the ladder rungs alone. If bearing on rungs only, the bearing area shall include a length of at least 10 inches on each rung.

7. Ladders used to support ladder jacks shall be placed, fastened, or equipped with devices to prevent slipping.

8. Scaffold platforms shall not be bridged one to another.

9. Guardrail systems are not permitted as a means of fall protection on ladder jack scaffolds.

10. Each employee on a ladder jack scaffold more than 10 feet above a lower level shall utilize a personal fall arrest system that meets the requirements of the Fall Protection program contained in this manual.

Window Jack Scaffolds

1. Scaffolds shall be securely attached to the window opening.

2. Scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

3. Window jacks shall not be used to support planks placed between one window jack and another, or for other elements of scaffolding.

Crawling Boards (Chicken Ladders)

1. Crawling boards shall extend from the roof peak to the eaves when used in connection with roof construction, repair, or maintenance.

2. Crawling boards shall be secured to the roof by ridge hooks or by a means that meet equivalent criteria (e.g., strength and durability).

Step, Platform, and Trestle Ladder Scaffolds

1. Scaffold platforms shall not be placed any higher than the second highest rung or step of the ladder supporting the platform.

2. All ladders used in conjunction with step, platform, and trestle ladder scaffolds shall meet the pertinent requirements of the Ladders and Stairways program of this manual.

3. Job-made ladders shall not be used to support such scaffolds.

4. Ladders used to support step, platform, and trestle ladder scaffolds shall be placed, fastened, or equipped with devices to prevent slipping.

5. Scaffolds shall not be bridged one to another.

Single-Point Adjustable Suspension Scaffolds

1. When two single-point adjustable suspension scaffolds are combined to form a two-point adjustable suspension scaffold, the resulting two-point scaffold shall comply with the requirements for two-point adjustable suspension scaffolds in the following section of this Scaffolds Program.

2. The supporting rope between the scaffold and suspension device shall be kept vertical, unless all of the following conditions are met:

    - The rigging has been designed by a qualified person,
    - The scaffold is accessible to rescuers,
    - The supporting rope is protected to ensure it will not chafe at any point where a change in direction occurs, and
    - The scaffold is positioned so swinging cannot bring the scaffold into contact with another surface.

3. Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly "eye-spliced" minimum five-eighth (5/8) inch first-

grade manila rope or other rope that will satisfy the criteria (e.g., strength and durability) of manila rope.

4. Boatswains' chair seat slings shall be reeved through four corner holes in the seat, cross each other on the underside of the seat, and be rigged so as to prevent slippage, which could cause an out-of-level condition.

5. Boatswains' chair seat slings shall be a minimum of five-eight (5/8) inch diameter fiber, synthetic, or other rope that will satisfy the criteria (e.g., strength, slip resistance, durability, etc.) of first grade manila rope.

6. When a heat-producing process, such as gas or arc welding, is being conducted, boatswains' chair seat slings shall be a minimum of three-eight (3/8) inch wire rope.

7. Non-cross-laminated wood boatswains' chairs shall be reinforced on their underside by cleats securely fastened to prevent the board from splitting.

Two-Point Adjustable Suspension Scaffolds (Swing Stages)

1. Platforms shall not be more than 36 inches wide, unless designed by a qualified person to prevent unstable conditions.

2. The platform shall be securely fastened to hangers (stirrups) by U-bolts or other means that satisfy the General Requirements section at the beginning of this Scaffolds Program.

3. The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.

4. Platforms shall be of the ladder-type, plank-type, beam-type, or light-metal type. Light metal-type platforms having a rated capacity of 750 pounds or less and platforms 40 feet or less in length shall be tested and listed by a nationally recognized testing laboratory.

5. Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations, unless the bridge connections are articulated (attached) and the hoists properly sized.

6. Passage may be made from one platform to another only when the platforms are at the same height, abutting, and walk-through stirrups specifically designed for this purpose are used.

Multi-Point Adjustable Suspension Scaffolds

1. This category of scaffold includes Stonesetters' Multi-Point Adjustable Suspension Scaffolds and Masons' Multi-Point Adjustable Suspension Scaffolds.

2. When two or more scaffolds are used, they shall not be bridged one to another, unless they are designed to be bridged, the bridge connections are articulated, and the hoists are properly sized.

3. If bridges are not used, passage may be made from one platform to another only when the platforms are at the same height and abutting.

4. Scaffolds shall be suspended from metal outriggers, brackets, wire rope slings, hooks, or means that meet equivalent criteria (e.g., strength, durability).

Catenary Scaffolds

1. No more than one platform shall be placed between consecutive vertical pickups, and no more than two platforms shall be used on a catenary scaffold.

2. Platforms supported by wire ropes shall have hook-shaped stops on each end of the platforms to prevent them from slipping off the wire ropes. These hooks shall be so placed that they will prevent the platform from falling if one of the horizontal wire ropes breaks.

3. Wire ropes shall not be tightened to the extent that the application of a scaffold load will overstress them.

4. Wire ropes shall be continuous and without splices between anchors.

Float (Ship) Scaffolds

1. The platform shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 inches beyond the platform on both sides. Each bearer shall be securely fastened to the platform.

2. Rope connections shall be such that the platform cannot shift or slip.

3. When only two ropes are used with each float:

    - They shall be arranged so as to provide four ends that are securely fastened to overhead supports.
    - Each supporting rope shall be hitched around one end of the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

Interior Hung Scaffolds

1. Scaffolds shall be suspended only from the roof structure or other structural member, such as ceiling beams.

2. Overhead supporting members (roof structure, ceiling beams, or other structural members) shall be inspected and checked for strength before the scaffold is erected.

3. Suspension ropes and cables shall be connected to the overhead supporting members by shackles, clips, thimbles, or other means that meet equivalent criteria (e.g., strength, durability).

Needle Beam Scaffolds

1. Scaffold support beams shall be installed on the edge.

2. Ropes or hangers shall be used for supports, except that one end of a needle beam scaffold may be supported by a permanent structural member.

3. The ropes shall be securely attached to the needle beams.

4. The support connection shall be arranged so as to prevent the needle beam from rolling or becoming displaced.

5. Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.

Multi-Level Suspension Scaffolds

1. Scaffolds shall be equipped with additional independent support lines, equal in number to the number of points supported, of equivalent strength to the suspension ropes, and rigged to support the scaffold in the event the suspension rope(s) fail.

2. Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

3. Supports for platforms shall be attached directly to the support stirrup and not to any other platform.

Mobile Scaffolds

1. Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

    - Scaffolds constructed of tube and coupler components shall also comply with the requirements of the Tube and Coupler Scaffolds section of this program;
    - Scaffolds constructed of fabricated frame components shall also comply with the requirements of the Fabricated Frame Scaffolds (Tubular Welded Frame Scaffolds) section of this program.

2. Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.

3. Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet above the supporting surface.

4. Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles, or add-on motors shall not be used to propel scaffolds, unless the scaffold is designed for such propulsion systems.

5. Scaffolds shall be stabilized to prevent tipping during movement.

6. Employees shall not be allowed to ride on scaffolds, unless the following conditions exist:

    - The surface on which the scaffold is being moved is within 3 degrees of level and free of pits, holes, and obstructions;
    - The height-to-base-width ratio of the scaffold during movement is two to one (2:1) or less, unless the scaffold is designed and constructed to meet or exceed nationally recognized stability test requirements, such as ANSI/SIA A92.5 and A92.6;
    - Outrigger frames, when used, are installed on both sides of the scaffold;
    - When power systems are used, the propelling force is applied directly to the wheels, and does not produce a speed in excess of 1 foot per second; and
    - No employee is on any part of the scaffold that extends outward beyond the wheels, casters, or other supports.

7. Platforms shall not extend outward beyond the base supports of the scaffold, unless outrigger frames or equivalent devices are used to ensure stability.

8. Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used.

9. Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws.

10. Before a scaffold is moved, each employee on the scaffold shall be made aware of the move.

Repair Bracket Scaffolds

1. Brackets shall be secured in place by at least one wire rope at least ½ inch in diameter.

2. Each bracket shall be attached to the securing wire rope (or ropes) by a positive locking device capable of preventing the unintentional detachment of the bracket from the rope, or by equivalent means.

3. Each bracket, at the contact point between the supporting structure and bottom of the bracket, shall be provided with a shoe (heel block or foot) capable of preventing the lateral movement of the bracket.

4. Platforms shall be secured to the brackets in a manner that will prevent the separation of the platforms from the brackets and the movement of the platforms or the brackets on a completed scaffold.

5. When a wire rope is placed around the structure in order to provide a safe anchorage for personal fall arrest systems used by employees erecting or dismantling scaffolds, the wire rope shall meet the requirements of the Fall Protection Program of this manual, but shall be at least 5/16 inch in diameter.

6. Each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be protected from damage due to contact with edges, corners, protrusions, or other discontinuities of the supporting structure or scaffold components.

7. Tensioning of each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be by means of a turnbuckle at least 1 inch in diameter, or by equivalent means.

8. Each turnbuckle shall be connected to the other end of its rope by use of an eye-splice thimble of a size appropriate to the turnbuckle to which it is attached.

9. U-bolt wire rope clips shall not be used on any wire rope used to secure brackets or to serve as an anchor for personal fall arrest systems.

10. The employer shall ensure materials shall not be dropped to the outside of the supporting structure.

11. Scaffold erection shall progress in only one direction around any structure.

Stilts

1. An employee may wear stilts on a scaffold only if it is a large area scaffold.

2. When an employee is using stilts on a large area scaffold where a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height of the stilts being used by the employee.

3. Surfaces on which stilts are used shall be flat and free of pits, holes, and obstructions, such as debris, as well as other tripping and falling hazards.

4. Stilts shall be properly maintained. Any alteration of the original equipment shall be approved by the manufacturer.

Training

1. Each employee who performs work while on a scaffold shall be trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:

- The nature of any electrical hazards, fall hazards, and falling object hazards in the work area;
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used;
- The proper use of the scaffold, and proper handling of materials on the scaffold;
- The maximum intended load and the load-carrying capacities of the scaffolds used; and
- Any other pertinent requirements of this subpart.

2. Each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold shall be trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

    - The nature of scaffold hazards;
    - The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question;
    - The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold;
    - Any other pertinent requirements of this subpart.

3. When there is reason to believe an employee lacks the skill or understanding needed for safe work involving the erection, use, or dismantling of scaffolds, each employee shall be retrained so the requisite proficiency is regained. Retraining is required in at least the following situations:

    - Where changes at the worksite present a hazard about which an employee has not been previously trained;
    - Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or
    - Where inadequacies in an affected employee's work involving scaffolds indicate the employee has not retained the requisite proficiency.

Aerial Lifts

General Requirements

1. Only authorized personnel shall be allowed to operate aerial lifts.

2. Operators shall be familiar with the manufacturer's operating instructions, safety rules, and safety decals for each lift. The lift shall be utilized and maintained in accordance with the manufacturer specifications.

3. Prior to each work shift, an inspection shall be performed to identify defects that would affect the safe operations and handling of the lift.

4. The work area shall be checked for adverse or hazardous conditions, e.g., ditches, holes, drop-offs, debris, etc. The operator shall keep the machine clear of such hazards.

5. Overhead obstructions and electrical conductors shall be identified and provisions instituted to avoid contact.

6. Operators, tools, and the aerial lift shall remain at least 10 feet from electrical power lines. Greater minimum clearance requirements must be maintained as specified by the aerial lift manufacturer.

7. Lifts shall only be utilized on a firm and level surface.

8. Do not operate or raise the platform while on trucks, trailers, railway cars, floating vessels, scaffolds, or other equipment.

9. Do not operate the equipment in hazardous environments.

10. Be sure the ground conditions are able to support the maximum load shown on the decals and in the manufacturer instructions.

11. Outriggers or stabilizers, if provided, shall be fully-extended.

12. The operator shall ensure safe working load restrictions are followed and the distribution of loads on the platform conforms to manufacturer's specifications. Rated load restrictions shall not be exceeded.

13. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition. Defects or malfunctions shall be reported to the supervisor immediately. Defective or malfunctioning equipment shall not be used.

14. Employees using extensible and articulating boom platforms shall be protected by personal fall arrest systems.

15. Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted. Personal fall arrest equipment shall be connected to the designated anchor points, as indicated by the aerial lift manufacturer instructions.

16. Only one personal fall arrest system shall be connected to a single anchorage point.

17. Personal fall arrest system equipment and its use shall meet the requirements of the Fall Protection Program contained in this manual.

18. Employees shall always stand firmly on the floor of the basket and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

19. Platform guardrails shall be installed and gates or chains closed during lift operation.

20. The operator shall ensure the area around the work platform is free of obstructions, equipment, materials, and personnel prior to moving the platform.

21. Keep the ground area around the machine clear during all driving and swing operations.

22. Always use a spotter when driving in areas where vision is obstructed.

23. Personnel shall not work, stand, or walk under a raised boom or platform. Utilize barricades on the ground to keep personnel out of the area.

24. Altering, modifying, or disabling safety devices or lift components is prohibited.

25. Do not use the equipment for any purpose other than positioning personnel, their tools, and equipment. All personnel, tools, and equipment shall be maintained in the basket and shall not exceed the rated capacity of the equipment.

26. Do not carry materials directly on the platform railing.

27. Do not attempt to use the machine as a crane. Do not tie-off the machine to any adjacent structure.

28. When two or more persons are in the platform, the operator shall be responsible for all machine operations.

29. Always ensure power tools are properly stowed and never left hanging by their cord from the platform work area.

30. Do not place the boom or platform against any structure to steady the platform or to support the structure. Do not use the machine to push or pull any object.

31. Do not operate the equipment in wind conditions that exceed the limits established by the aerial lift manufacturer. Do not increase the surface area of the platform or the load. Increase of the area exposed to the wind will decrease stability.

32. Never use the boom assembly to enter or leave the platform.

33. When entering or leaving the platform, face the machine, and maintain three points of contact.

34. Fuel tanks shall not be filled while the engine is running. Caution shall be exercised to avoid spilling fuel.

35. Battery charging shall only be performed in a well-ventilated area, free of sources of ignition, e.g., smoking, sparksm, or fire.

Powered Industrial Trucks

Purpose

The purpose of this Powered Industrial Trucks Program is to ensure each potential operator is properly trained in the safe procedures of operating a powered industrial truck. In order to comply with the most recent OSHA Regulation regarding powered industrial trucks, training will consist of formal instruction (lecture, discussion, video tapes, written materials), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

Pre-Qualifications for Powered Industrial Truck (PIT) Operators

Only authorized and trained Celtic Commercial Painting, LLC. employees may operate a forklift at Celtic Commercial Painting, LLC. jobs.

Training

All operational training shall be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a powered industrial truck (forklift, etc.) without continual and close supervision. All operator training and evaluation shall be conducted by persons who have the knowledge, training, and experience to train powered industrial truck operators and evaluate their competence. Training consists of:

1. Trainees may operate a powered industrial truck only:

    - Under the direct supervision of persons, selected by management, who have the knowledge, training, and experience to train operators and evaluate their competence; and
    - Where such operation does not endanger the trainee or other employees.

2. Training Content

    Training consists of a combination of formal instruction, practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace. Training shall include the following topics:

    Truck-related topics:

    - Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.
    - Differences between a truck and an automobile.
    - Truck controls and instrumentation: where they are located, what they do, and how they work.
    - Engine or motor operation.
    - Steering and maneuvering.

- Visibility, including restrictions due to loading.
- Fork and attachment adaptation, operation, and use limitations.
- Vehicle capacity.
- Vehicle stability.
- Any vehicle inspection and maintenance that the operator will be required to perform.
- Refueling and/or charging and recharging of batteries.
- Operating limitations.
- Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace-related topics:

- Surface conditions where the vehicle will be operated.
- Composition of loads to be carried and load stability.
- Load manipulation, stacking, and unstacking.
- Pedestrian traffic in areas where the vehicle will be operated.
- Narrow aisles and other restricted places where the vehicle will be operated.
- Hazardous (classified) locations where the vehicle will be operated.
- Ramps and other sloped surfaces that could affect the vehicle's stability.
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.
- Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.
- The requirements of this program.

3. Refresher Training and Evaluation

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted to ensure the operator has the knowledge and skills needed to operate the powered industrial truck safely. Forklift operators will be required to undergo refresher training if any of the following conditions should arise:

- The operator was observed operating the forklift truck in an unsafe manner.
- The operator was involved in an accident or a near-miss incident.
- If the operator has received a poor evaluation.
- If, and before, the operator is required to operate a different lift truck other than the one he/she was trained on.
- Whenever there are changes in the workplace that would affect the safe operation of the forklift truck and operator.

Each forklift truck operator will be evaluated to determine the operator's ability to handle the lift truck in a safe manner. This evaluation will be conducted at least once every 3 years. A record shall be maintained that certifies that each operator has been trained and evaluated. The certification record shall include the name of the operator, date of the

training, date of the evaluation, and identity of the person(s) performing the training or evaluation.

General Requirements

1. Powered industrial trucks shall meet the design and construction requirements for powered industrial trucks established in the American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969.

2. Only authorized and trained personnel will operate powered industrial trucks.

3. Seat belts shall be worn while operating a powered industrial truck.

4. The operator will perform daily pre- and post-trip inspections.

5. Any safety defects, (such as hydraulic fluid leaks, defective brakes, steering, lights, or horn) will be reported for immediate repair. The truck shall be removed from service until it has been restored to a safe operating condition.

6. Operators will follow the proper recharging or refueling safety procedures.

7. Operator will sound horn and use extreme caution when meeting pedestrians, making turns, cornering, approaching cross aisles and other locations where vision is obstructed.

8. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

9. Passengers may not ride on any portion of a powered industrial truck

10. If the lift is used as a man lift, an appropriate man lift platform (cage with standard rails and toeboards) will be used (see the Scaffolds section).

11. Lift capacity will be marked on all lifts. The operator will ensure the load does not exceed rated weight limits. All nameplates and markings shall be maintained in a legible condition.

12. Modifications and additions that affect capacity and safe operation shall not be performed without written approval from the manufacturer. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

Truck Operations

1. Truck operators shall not use cell phones or other electronic communication devices while operating the truck.

2. Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.

3. No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.

4. Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

5. The employer shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the truck.

6. When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.

    - A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle that remains in his view, or whenever the operator leaves the vehicle and it is not in his view.
    - When the operator of an industrial truck is dismounted and within 25 feet of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and brakes set to prevent movement.

7. A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Trucks shall not be used for opening or closing freight doors.

8. Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semitrailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto.

9. There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.

10. An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.

11. A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

12. Only approved industrial trucks shall be used in hazardous locations.

13. Fire aisles, access to stairways, and fire equipment shall be kept clear.

14. If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

15. Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

16. Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.

17. No truck shall be operated with a leak in the fuel system until the leak has been corrected.

18. Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

19. Concentration levels of carbon monoxide gas created by powered industrial truck operations shall not exceed 50 parts per million (8-Hour TWA).

Traveling

1. All traffic regulations shall be observed, including authorized speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.

2. The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

3. Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

4. The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

5. Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

6. The driver shall be required to look in the direction of and keep a clear view of the path of travel.

7. Grades shall be ascended or descended slowly.

    - When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.

    - On all grades, the load and load engaging means shall be tilted back, if applicable, and raised only as far as necessary to clear the road surface.

8. Under all travel conditions, the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

9. Stunt driving and horseplay shall not be permitted.

10. The driver shall be required to slow down for wet and slippery floors.

11. Dockboard or bridgeplates shall be properly secured before they are driven over. Dockboard or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.

12. Elevators shall be approached slowly and then entered squarely after the elevator car is properly leveled. Once on the elevator, the controls shall be neutralized, power shut off, and the brakes set.

13. Motorized hand trucks must enter the elevator or other confined areas with the load end forward.

14. Running over loose objects on the roadway surface shall be avoided.

15. While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

16. Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.

Loading

1. Only stable or safely arranged loads shall be handled.

2. Only loads within the rated capacity of the truck shall be handled.

3. The long or high (including multiple-tiered) loads that may affect capacity shall be adjusted.

4. Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.

5. A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.

6. Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward, except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

Fuel Handling and Storage

1. The storage and handling of liquid fuels, such as gasoline and diesel fuel, shall be in accordance with NFPA 30.

2. The storage and handling of liquefied petroleum gas fuel shall be in accordance with NFPA 58.

3. Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

4. Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting the engine.

5. No truck shall be operated with a leak in the fuel system until the leak has been corrected.

6. Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

Changing and Charging Storage Batteries

1. Battery charging installations shall be located in areas designated for that purpose.

2. Facilities shall be provided for flushing and neutralizing spilled electrolyte, fire protection, protecting charging apparatus from damage by trucks, and adequate ventilation for dispersal of fumes from gassing batteries.

3. A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.

4. Reinstalled batteries shall be properly positioned and secured in the truck.

5. A carboy tilter or siphon shall be provided for handling electrolyte.

6. When charging batteries, acid shall be poured into water; water shall not be poured into acid.

7. Trucks shall be properly positioned and the brake applied before attempting to change or charge batteries.

8. Care shall be taken to ensure vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

9. Smoking shall be prohibited in the charging area. “No Smoking” signs shall be posted.

10. Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

11. Tools and other metallic objects shall be kept away from the top of uncovered batteries.

Trucks and Railroad Cars

1. The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.

2. Wheel stops or other recognized positive protection shall be provided to prevent railroad cars from moving during loading or unloading operations.

3. Fixed jacks may be necessary to support a semitrailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.

4. Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

Maintenance

1. Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.

2. No repairs shall be made in Class I, II, and III locations.

3. Those repairs to the fuel and ignition systems of industrial trucks that involve fire hazards shall be conducted only in locations designated for such repairs.

4. Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.

5. All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.

6. Industrial trucks shall not be altered so the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts.

7. Industrial trucks shall be examined before being placed in service and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.

8. Water mufflers shall be filled daily or as frequently as is necessary to prevent depletion of the supply of water below 75 percent of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged shall not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system shall immediately be removed from service and not returned to service until the cause for the emission of such sparks and flames has been eliminated.

9. When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.

10. Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 °F) solvents shall not be used. High flash point (at or above 100 °F) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be consonant with the agent or solvent used.

Daily Checklist – Internal Combustion Industrial Truck (Gas/LPG/Diesel)

Record of Fuel Added

Date		Operator		Fuel	
Truck Number		Model Number		Engine Oil	
Department		Serial Number		Radiator Coolant	
Shift		Hour Meter		Hydraulic Oil	

Safety and Operational Checks (Prior to Each Shift)

Note: Have a **qualified** mechanic correct all problems.

Engine Off Checks	**OK**	**Maintenance**
Leaks – Fuel, Hydraulic Oil, Engine Oil, or Radiator Coolant		
Tires – condition and pressure		
Forks, Top Clip Retaining Pin, and Heel – check condition		
Load Backrest – securely attached		
Hydraulic Hoses, Mast Chains, Cables, and Stops – check visually		
Overhead Guard – attached		
Finger Guards – attached		
Propane Tank (LP Gas Truck) – rust corrosion, damage		
Safety Warnings – attached (refer to parts manual for location)		
Battery – check water/electrolyte level and charge		
All Engine Belts – check visually		
Hydraulic Fluid Level – check level		
Engine Oil Level – dipstick		
Transmission Fluid Level – dipstick		
Engine Air Cleaner – squeeze rubber dirt trap or check the restriction alarm (if equipped)		
Fuel Sedimentor (Diesel)		
Radiator Coolant – check level		
Operator's Manual – in container		
Nameplate – attached and information matches model, serial number, and attachments		
Seat Belt – functioning smoothly		
Hood Latch – adjusted and securely fastened		
Brake Fluid – check level		
Engine On Checks – unusual noises must be investigated immediately	**OK**	**Maintenance**
Accelerator or Direction Control Pedal – functioning smoothly		
Service Brake – functioning smoothly		
Parking Brake – functioning smoothly		
Steering Operation – functioning smoothly		
Drive Control – Forward/Reverse – functioning smoothly		
Tilt Control – Forward and Back – functioning smoothly		
Hoist and Lowering Control – functioning smoothly		
Attachment Control – operation		
Horn and Lights – functioning		
Cab (if equipped) – Heater, Defroster, Wipers – functioning		
Gauges – Ammeter, Engine Oil Pressure, Hour Meter, Fuel Level, Temperature, Instrument Monitors – functioning		

Daily Checklist – Electric Industrial Truck

Record of Fluid Added

Date		Operator		Battery Water	
Truck Number		Model Number		Hydraulic Oil	
Department		Serial Number			
Shift		Drive Hour Meter Reading		Hoist Hour Meter Reading	

Safety and Operational Checks (Prior to Each Shift)

Note: Have a **qualified** mechanic correct all problems.

Motor Off Checks	**OK**	**Maintenance**
Leaks – Hydraulic Oil, Battery		
Tires – condition and pressure		
Forks, Top Clip Retaining Pin, and Heel – condition		
Load Backrest Extension – attached		
Hydraulic Hoses, Mast Chains, Cables, and Stops – check visually		
Finger Guards – attached		
Overhead Guard – attached		
Safety Warnings – attached (refer to parts manual for location)		
Battery – water/electrolyte level and charge		
Hydraulic Fluid Level – dipstick		
Transmission Fluid Level – dipstick		
Operator's Manual – in container		
Capacity Plate Attached – information matches nodel, serial number, and attachments		
Battery Restraint System – adjust and fasten		
Operator Protection: **Sitdown Truck** – Seat Belt – functioning smoothly **Man-up Truck** – Fall Protection/Restraining Means – functioning		
Brake Fluid – Check level		
Motor On Checks – unusual noises must be investigated immediately	**OK**	**Maintenance**
Accelerator Linkage – functioning smoothly		
Parking Brake – functioning smoothly		
Service Brake – functioning smoothly		
Steering Operation – functioning smoothly		
Drive Control – Forward/Reverse – functioning smoothly		
Tilt Control – Forward and Back – functioning smoothly		
Hoist and Lowering Control – functioning smoothly		
Attachment Control – operation		
Horn – functioning		
Lights and Alarms (where present) – functioning		
Hour Meter – functioning		
Battery Discharge Indicator – functioning		
Instrument Monitors – functioning		

Rigging

Scope

1. This section applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting.

2. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).

3. The type of hardware covered includes shackles and hooks.

General Requirements

1. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.

2. Celtic Commercial Painting, LLC. must ensure rigging equipment:

    a. Has permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load;
    b. Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and
    c. Not be used without affixed, legible identification markings.

3. Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees.

4. Special custom design grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures, and similar materials, shall be marked to indicate the safe working loads and be proof-tested prior to use to 125 percent of their rated load.

5. **Inspections:** Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by Celtic Commercial Painting, LLC.. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

6. Materials shall be rigged to prevent unintentional displacement.

Alloy Steel Chain Slings

1. Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer.

2. Hooks, rings, oblong links, pear-shaped links, welded or mechanical coupling links, or other attachments, when used with alloy steel chains, shall have a rated capacity at least equal to that of the chain.

3. Job or shop hooks and links or makeshift fasteners formed from bolts, rods, etc., or other such attachments, shall not be used.

4. Celtic Commercial Painting, LLC. must not use alloy steel-chain slings with loads in excess of the rated capacities (i.e., working load limits) indicated on the sling by permanently affixed and legible identification markings prescribed by the manufacturer.

5. Whenever wear at any point of any chain link exceeds that shown in Table H-2 of 29 CFR 1926.251, the assembly shall be removed from service.

Alloy Steel Chain Inspections

1. In addition to the inspection required by other paragraphs of this section, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of

    a. Frequency of sling use,
    b. Severity of service conditions,
    c. Nature of lifts being made, and
    d. Experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months.

2. Celtic Commercial Painting, LLC. shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected and make such record available for examination.

Wire Rope Slings

1. Celtic Commercial Painting, LLC. must not use improved plow-steel wire rope and wire-rope slings with loads in excess of the rated capacities (i.e., working load limits) indicated on the sling by permanently affixed and legible identification markings prescribed by the manufacturer.

2. Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

3. Wire rope shall not be secured by knots, except on haul back lines on scrapers.

4. The following limitations shall apply to the use of wire rope:

    a. An eye splice made in any wire rope shall have not less than three full tucks. However, this requirement shall not operate to preclude the use of another form of splice or connection that can be shown to be as efficient and is not otherwise prohibited.

   b. Except for eye splices in the ends of wires and for endless rope slings, each wire rope used in hoisting or lowering, or in pulling loads, shall consist of one continuous piece without knot or splice.
   c. Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire rope clips or knots.
   d. Wire rope shall not be used if, in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect.

5. When U-bolt wire rope clips are used to form eyes, Table H-20 of 29 CFR 1926.251 shall be used to determine the number and spacing of clips.

   a. When used for eye splices, the U-bolt shall be applied so that the “U” section is in contact with the dead end of the rope.

6. Slings shall not be shortened with knots, bolts, or other makeshift devices.

7. Sling legs shall not be kinked.

8. Slings used in a basket hitch shall have the loads balanced to prevent slippage.

9. Slings shall be padded or protected from the sharp edges of their loads.

10. Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

11. Shock loading is prohibited.

12. A sling shall not be pulled from under a load when the load is resting on the sling.

13. Wire rope slings shall have permanently affixed, legible identification markings stating size, rated capacity for the type(s) of hitch(es) used and the angle upon which it is based, and the number of legs if more than one.

Minimum Sling Lengths

1. Cable laid and 6x19 and 6x37 slings shall have minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves, or end fittings.

2. Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

3. Cable laid grommets, strand laid grommets, and endless slings shall have a minimum circumferential length of 96 times their body diameter.

Safe Operating Temperatures

1. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200 °F. When non-fiber core wire rope slings of any grade are used at temperatures above 400 °F or below minus 60 °F, recommendations of the sling manufacturer regarding use at that temperature shall be followed.

End Attachments

1. Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.

2. All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. Celtic Commercial Painting, LLC. shall retain a certificate of proof test and make it available for examination.

Natural Rope and Synthetic Fiber

1. Celtic Commercial Painting, LLC. must not use natural- and synthetic-fiber rope slings with loads in excess of the rated capacities (i.e., working load limits) indicated on the sling by permanently affixed and legible identification markings prescribed by the manufacturer.

2. All splices in rope slings provided by the Celtic Commercial Painting, LLC. shall be made in accordance with fiber rope manufacturer’s recommendations.

    a. In manila rope, eye splices shall contain at least three full tucks, and short splices shall contain at least six full tucks (three on each side of the center line of the splice).
    b. Inlayed synthetic fiber rope, eye splices shall contain at least four full tucks, and short splices shall contain at least eight full tucks (four on each side of the center line of the splice).
    c. Strand end tails shall not be trimmed short (flush with the surface of the rope) immediately adjacent to the full tucks. This precaution applies to both eye and short splices and all types of fiber rope. For fiber ropes under 1-inch diameter, the tails shall project at least six rope diameters beyond the last full tuck. For fiber ropes 1-inch diameter and larger, the tails shall project at least 6 inches beyond the last full tuck. In applications where the projecting tails may be objectionable, the tails shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).
    d. For all eye splices, the eye shall be sufficiently large to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.
    e. Knots shall not be used in lieu of splices.

3. **Safe Operating Temperatures** – Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20 °F to plus 180 °F without decreasing the working load limit. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

4. **Splicing** – Spliced fiber rope slings shall not be used, unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:

    a. In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.
    b. In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.
    c. Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under 1 inch in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope 1 inch in diameter and larger, the tail shall project at least 6 inches beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).
    d. Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.
    e. Knots shall not be used in lieu of splices.
    f. Clamps not designed specifically for fiber ropes shall not be used for splicing.
    g. For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

5. **End Attachments** – Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

6. **Removal from Service** – Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

    a. Abnormal wear,
    b. Powdered fiber between strands,
    c. Broken or cut fibers,
    d. Variations in the size or roundness of strands,
    e. Discoloration or rotting, and
    f. Distortion of hardware in the sling.

7. Celtic Commercial Painting, LLC. must use natural- and synthetic-fiber rope slings that have permanently affixed and legible identification markings that state the rated capacity

for the type(s) of hitch(es) used and the angle upon which it is based, type of fiber material, and the number of legs if more than one.

Synthetic Webbing (Nylon, Polyester, and Polypropylene)

1. Celtic Commercial Painting, LLC. shall have each synthetic web sling marked or coded to show:

    a. Name or trademark of manufacturer,
    b. Rated capacities for the type of hitch, and
    c. Type of material.

2. Rated capacity shall not be exceeded.

3. **Webbing** – Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

4. **Fittings** – Fittings shall be:

    a. Of a minimum breaking strength equal to that of the sling, and
    b. Free of all sharp edges that could in any way damage the webbing.

5. **Attachment of End Fittings to Webbing and Formation of Eyes** – Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

6. **Environmental Conditions –** When synthetic web slings are used, the following precautions shall be taken:

    a. Nylon web slings shall not be used where fumes, vapors, sprays, mists, or liquids of acids or phenolics are present.
    b. Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.
    c. Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

7. **Safe Operating Temperatures –** Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180 °F. Polypropylene web slings shall not be used at temperatures in excess of 200 °F.

8. **Removal from Service** – Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

    a. Acid or caustic burns;
    b. Melting or charring of any part of the sling surface;
    c. Snags, punctures, tears, or cuts;
    d. Broken or worn stitches; or

e. Distortion of fittings.

Shackles and Hooks

1. Celtic Commercial Painting, LLC. must not use shackles with loads in excess of the rated capacities (i.e., working load limits) indicated on the shackle by permanently affixed and legible identification markings prescribed by the manufacturer.

2. The manufacturer’s recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer’s recommendations are available shall be tested to twice the intended safe working load before they are initially put into use. Celtic Commercial Painting, LLC. shall maintain a record of the dates and results of such tests.

Vehicles

Purpose

Celtic Commercial Painting, LLC. has adopted this policy to provide our employee's with a set of guidelines to ensure the safe operation of motor vehicles while under the employment of Celtic Commercial Painting, LLC., and to provide a set of procedures for acceptable use when operating Celtic Commercial Painting, LLC. vehicles, or while using personal vehicles for Celtic Commercial Painting, LLC. business.

1. Only approved drivers shall be allowed to drive company vehicles. Personnel shall be required to possess a valid state driver's license. Additional requirements may be necessary to drive certain types of company vehicles, such as a commercial driver's license (CDL). Personal use of company vehicles without authorization is strictly prohibited. **Only previously approved company personnel may operate company vehicles.**

2. Personnel shall observe all local and state rules and regulations when in company vehicles. Seat belts shall be worn by all vehicle occupants at all times.

3. All vehicles shall have in operable condition at least:

    - Two headlights
    - Two taillights
    - Brake lights
    - Audible warning device at operator's station
    - Properly installed seat belts
    - Seats, firmly secured, for the number of persons carried
    - Service, parking, and emergency brake system

4. Any motor vehicle equipment having an obstructed view to the rear must:

    - Have a reverse signal alarm audible above the surrounding noise level; or
    - Be backed up only when an observer signals that it is safe to do so.

5. All vehicles with cabs shall be equipped with windshields and powered wipers. Cracked and broken glass shall be replaced. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshields shall be equipped with operable defogging or defrosting devices.

6. All haulage vehicles, whose pay load is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.

7. Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.

8. Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.

9. Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.

10. All rubber-tired motor vehicle equipment shall be equipped with fenders. Mud flaps may be used in lieu of fenders whenever motor vehicle equipment is not designed for fenders.

11. All vehicles shall be maintained in safe working order.

12. Daily/Pre-trip visual inspection must be performed to ensure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use:

    - service brakes, including trailer brake connections;
    - parking system (hand brake);
    - emergency stopping system (brakes);
    - tires;
    - horn;
    - steering mechanism;
    - coupling devices;
    - seat belts;
    - operating controls; and
    - safety devices

13. The above requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.

14. All defects shall be corrected before the vehicle is placed in service. Do not attempt to operate a vehicle if an unsafe condition is noted until repairs have been made.

15. Ensure all loads are secured and are within manufacturer legal limits. Tools and material shall be secured to prevent movement when transported in the same compartment with employees.

16. All vehicles shall be of the correct size and designed for their intended use.

17. When vehicles are stopped or parked, parking brakes shall be set. Equipment on inclines she have wheels locked/chocked as well as having the parking brake set.

18. Passengers shall only be allowed to ride inside the cab of vehicles, as intended by the vehicle manufacturer.

19. Traffic laws must be observed and obeyed at all times. Drivers shall exhibit safe driving behavior, and shall observe required speed limits and following distances.

20. When involved in an accident with a company vehicle, the following procedures shall be complied with:

    - Stay at the scene of the accident. Preserve the scene as much as possible.
    - Notify the police, emergency personnel, and office. Cooperate with all police and emergency personnel.
    - Obtain all information name, make and year of vehicle, insurance company, and description of incident.
    - Do not sign anything from the other driver.

21. Report all arrests and traffic convictions to the main office as they occur.

22. Drinking of alcoholic beverages while driving or driving under the influence of alcohol or drugs is prohibited.

23. During the use of company vehicles, while moving, refrain from the following activities.

    - Eating, drinking, smoking,
    - Refrain from using a cell phone while operating a vehicle.
    - No texting at any time

24. The use of hand-held electronic communication devices is prohibited while operating company vehicles, or while operating personal vehicles for company purposes.

25. Do Not Take Chances – To arrive safely must always be your first priority. Exercise caution when driving during inclement weather conditions at all times. Do not give rides to hitchhikers or strangers.

Authorization Form – Department of Motor Vehicle Records

As part of the Celtic Commercial Painting, LLC. Vehicles Program, we are required to complete a motor vehicle record check for employees that will be authorized to operate a company vehicle or authorized to drive their personal vehicle for company business.
Please complete the following driving information, read the motor vehicle report authorization statement and sign where indicated below.

Driver Information

Name: _____

Position Title: _____

Home Address: _____

Date of Birth: _____ Driver's License#: _____

State License is Issued: _____ Expiration Date of License: _____

Motor Vehicle Report Authorization:

This authorizes the procurement of a motor vehicle report by Celtic Commercial Painting, LLC. as part of the requirements for obtaining permission to drive for Celtic Commercial Painting, LLC. business.

Please Check One:

[ ] Due to the nature of my job duties and/or need for frequent travel, I consent to a continuous review of my driving record. I understand that a Motor Vehicle Report will be obtained on an on-going basis (at least annually) in order to maintain my current driving privileges. This authorization will terminate upon written request or at which point I am no longer affiliated with Celtic Commercial Painting, LLC..

[ ] I authorize Celtic Commercial Painting, LLC. to review my Motor Vehicle Report for a one year period. Upon expiration, I understand that I must complete a consent form if future travel is required.

_____ _____

Employee Signature **Date**

Traffic Control

Traffic Control Plans

Traffic Control Plans (TCPs) play a vital role in providing continuity of safe and efficient traffic flow, to the extent interruptions in normal flow are necessary for temporary traffic control operations or other events that must temporarily disrupt normal traffic flow. Important auxiliary provisions that cannot conveniently be specified on project plans can easily be incorporated into Special Provisions within the TCP.

A TCP describes traffic controls to be used for facilitating vehicle and pedestrian traffic through a temporary traffic control zone. The plan may range in scope from being very detailed, to merely referencing typical drawings contained in the MUTCD, standard approved highway agency drawings and manuals, or specific drawings contained in contract documents. The degree of detail in the TCP depends entirely on the complexity of the situation, and TCPs shall be prepared by a competent person.

Traffic control planning requires forethought. Provisions may be incorporated into the project bid documents that enable contractors to develop alternate traffic control plans, which may be used only if the responsible agency finds they are as good as those provided in the plans/specifications. For maintenance and minor utility projects that do not require bidding, forethought must be given to selecting the best traffic control before occupying the temporary traffic control zone.

Modifications of TCPs may be necessary because of changed conditions or determination of even better ways of handling traffic safely and efficiently, while permitting efficient temporary traffic control activities to progress.

Definitions

Most temporary traffic control zones can be divided into four areas: the advance warning area, the transition area, the activity area, and the termination area. The four components that constitute a temporary traffic control zone are described in the order that drivers encounter them. They include the following:

Advance Warning Area – In the advance warning area, drivers are informed of what to expect. The advance warning may vary from a single sign or flashing lights on a vehicle to a series of signs in advance of the temporary traffic control zone transition area. On freeways and expressways, where driver speed is generally in the higher range (45 mph or more), signs may be placed from 500 feet to 1/2 mile or more before the temporary traffic control zone. The true test of adequacy of sign spacing is to evaluate how much time the driver has to perceive and react to the condition ahead. In this regard, the use of speed, roadway condition, and related driver expectancy must be considered in order to derive a practical sign spacing distance.

Transition Area – When redirection of the driver's normal path is required, traffic must be channelized from the normal path to a new path. This redirection is intended to occur at the

beginning of the transition area. In mobile operations, this transition area moves with the work space. Transition areas usually involve strategic use of tapers, which (because of their importance) are discussed in more detail in the Taper section.

Activity Area – The activity area is an area of roadway where the work takes place. It is composed of the work space and the traffic space, and may contain one or more buffer spaces.

Termination Area – The termination area is used to return traffic to the normal traffic path. The termination area extends from the downstream end of the work area to the END ROAD WORK signs, if posted. Conditions may be such that posting of END ROAD WORK signs is not helpful. For example, the END ROAD WORK signs shall normally not be used if other temporary traffic control zones begin within a mile of the end of the work space in rural areas, or about a quarter-mile within urban areas. For normal daytime maintenance operations, the END ROAD WORK SIGN is optional.

Merging Taper – A merging taper requires the longest distances because drivers are required to merge with an adjacent lane of traffic at the prevailing speed. The taper shall be long enough to enable merging drivers to adjust their speeds and merge into a single lane before the end of the transition. For freeways, expressways, and other roadways having a speed of 45 mph or greater, the minimum length for merging tapers shall be computed by a formula L = W x S. For residential, urban, and other streets with speeds less than 45 mph, the formula $L = (W X S^2)/60$ shall be used. Under either formula, L is the taper length in feet, W is the lateral shift of traffic due to the partially or fully closed lane (in feet), and S is the posted speed, the off-peak 85th percentile speed prior to work starting or the anticipated operating speed. The formula $L = (W X S^2)/60$ is used for speeds less than 45 mph because slower traffic can merge safely in a shorter distance.

Shifting Taper – A shifting taper is used when merging is not required, but a lateral shift is needed. Approximately one-half L has been found to be adequate. Where more space is available, it may be beneficial to use longer distances. Guidance for changes in alignment may also be accomplished by using horizontal curves designed for normal highway speeds.

Shoulder Taper – A shoulder taper may be beneficial on high- speed roadways with improved shoulders that may be mistaken for driving lanes (when work is occurring in the shoulder area). If used, shoulder tapers approaching the activity area shall have a length of about one-third L. If a shoulder is used as a travel lane either through practice or during a temporary traffic activity, a normal merging or shifting taper shall be used.

Downstream Taper – The downstream taper may be useful in termination areas to provide a visual cue to the driver that access is available to the original lane/path that was closed. When a downstream taper is used, it shall have a minimum length of about 100 feet per lane, with devices spaced about 20 feet apart.

One-Lane, Two-Way Taper – The one-lane, two-way traffic taper is used in advance of an activity area that occupies part of a two-way roadway in such a way that a portion of the road is used alternately by traffic in each direction. Typically, traffic is controlled by a temporary traffic

signal or a flagger. A short taper having a maximum length of 100 feet with channelizing devices at approximately 20-foot spacings shall be used to guide traffic into the one-way section.

Installation and Removal Procedures

Refer to Manual of Uniform Traffic Control Devices (MUTCD) for warning signs and barricade selection, and work zone specifications. Contact Traffic Control Setup Contractor OR Supervisor for questions/comments.

Note: Traffic controls must be setup by a competent person.

Traffic Control

1. A suitable temporary traffic control plan for guarding the work zone shall be developed before work is begun.
2. Be sure to consider the road user (motorist, pedestrian, and bicyclist) points of view.
3. If you have questions, consult your supervisor and/or state local authorities.
4. Use a temporary traffic control plan checklist for reference when selecting, installing, and removing devices.
5. Notify authorities if necessary.

Installation of Temporary Traffic Control Devices

1. Drive through the proposed work zone.
2. Park work vehicle in a safe area but not in the proposed work zone.
3. Setup advance warning signs starting with the initial sign the motorist will see.
4. Set out channelizers for the taper and buffer space laterally along the curb or edge or roadway.
5. Setup taper, then buffer, by walking each channelizer into position in the lane while watching traffic upstream.
6. Observe traffic flow and evaluate effectiveness, adjust if necessary.
7. Pull vehicle into activity area

Removal of Temporary Traffic Control Devices

1. Remove vehicles and equipment from work zone. Park in safe area.

2. Remove channelizers walking each one to the curb beginning with those in the activity area, then the buffer zone, then taper, working upstream so remaining channelizers continue to provide protection from oncoming traffic.

3. Remove advance warning signs.

Flagging Procedures

Qualifications for Flaggers

Flaggers are responsible for the safety of the employees, work zone, and public safety. They shall have the following minimum qualifications:

- Certified by the State of Illinois
- Mentally alert
- In good physical condition
- Courteous
- Authoritative

Equipment

- **Safety Vests –** The flagger shall wear highly visible Type 2 – Two Tone safety vest (ANSI Approved). Vest must be clean and neat, and shall be the right size to fit the person who will be wearing them.
- **Stop/Slow Paddle –** The sign on the paddle must measure at least 18" across with letters that are at least 6" high. Staffs shall be 6-7' in height.
- **Emergency Flag:** Must be 24" x 24" red flag attached to a 3' staff, and shall ONLY be used in emergency situations.
- **Light Wand –** Used for nighttime flagger.
- **Hard Hat –** When overhead hazards exist
- **Miscellaneous**
    - Water
    - Lunch
    - Rain Gear
    - 1st Aid Supplies
    - Pen and Paper for recording vehicle information
    - Personal hygiene items

Basic Flagging Procedures

- **Stop –** The flagger shall face traffic and extend the flag staff horizontally across the traffic lane in a stationary position, so that the full area of the flag is visible hanging below the staff. The free arm shall be raised with the palm toward approaching traffic.
- **Proceed –** The flagger shall face traffic with the flag and arm lowered from view of the driver. With the free hand, the flagger shall motion traffic to proceed. Flags shall not be used to signal traffic to proceed.

- **Slow –** The flagger shall face traffic and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down, without raising the arm above a horizontal position.

Flagger Stations

Flagger stations shall be located far enough ahead of the work space so that approaching traffic has sufficient distance to stop before entering the work space. This distance is related to approach speeds, friction factors, and pavement and tire conditions.

The flagger shall stand either on the shoulder adjacent to the traffic being controlled or in the barricaded lane. At a "spot" obstruction, a position may have to be taken on the shoulder opposite the barricaded section to operate effectively. A flagger shall stand only in the lane being used by moving traffic after traffic has stopped, and the flagger needs to be visible to other traffic or to communicate with drivers. Because of the various roadway geometrics, flaggers shall be clearly visible to approaching traffic at all times. For this reason the flagger shall stand alone.

Other workers shall not be permitted to congregate around the flagger station. The flagger shall be stationed far enough ahead of the work force to warn them (for example with horns, whistles etc.) of approaching danger, such as vehicles out of control.

Detours and Diversions

At detours, traffic is directed onto another roadway to bypass the temporary traffic control zone. Detours shall be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway.

At diversions, traffic is directed onto a temporary roadway or alignment placed in or next to the right-of-way, e.g., median crossovers or lane shifts.

Transit Considerations

Provision for effective continuity of transit service needs to be incorporated into the temporary traffic control planning process. Oftentimes, public transit buses cannot efficiently be detoured in the same manner as other vehicles (particularly for short-term maintenance projects). On transit routes, the TCP shall provide for features such as temporary bus stops, pull-outs, and waiting areas for transit patrons.

Pedestrian Considerations

There are three threshold considerations in planning for pedestrian safety in temporary traffic control zones on highways and streets:

- Pedestrians shall not be led into direct conflicts with work site vehicles, equipment, or operations.

- Pedestrians shall not be led into direct conflicts with mainline traffic moving through or around the work site.
- Pedestrians shall be provided with a safe, convenient travel path that replicates as nearly as possible the most desirable characteristics of sidewalks or footpaths.

Worker Safety Considerations

Of equal importance to the safety of the public traveling through the temporary traffic control zone is the safety of the worker performing the many varied tasks within the work site. Work areas present temporary and constantly changing conditions that are unexpected by the traveler. Further, these work area conditions almost always present situations that are more confusing for the driver. This creates an even higher degree of vulnerability for the personnel on or near the roadway.

Below are key elements of traffic control management that shall be considered in any procedure for assuring worker safety:

- **Training –** All workers shall be trained in how to work next to traffic in a way that minimizes their vulnerability. In addition, workers with specific traffic control responsibilities shall be trained in traffic control techniques, device usage, and placement.
- **Worker Clothing –** Workers exposed to traffic shall be attired in bright, highly visible clothing similar to that of flaggers.
- **Barriers –** Barriers shall be placed along the work space depending on such factors as lateral clearance of workers from adjacent traffic, speed of traffic, duration of operations, time of day, and volume of traffic.
- **Speed Reduction –** In highly vulnerable situations, consideration shall be given to reducing the speed of traffic through regulatory speed zoning, funneling, use of police, lane reduction, or flaggers.
- **Use of Police –** In highly vulnerable work situations, particularly those of relatively short duration, stationing police units heightens the awareness of passing traffic and will likely cause a reduction in travel speed.
- **Lighting –** For nighttime work, lighting the work area and approaches may allow the driver better comprehension of the requirements being imposed. Care shall be taken to ensure that the lighting does not cause blinding.
- **Special Devices –** Judicious use of special warning and control devices may be helpful for certain difficult work area situations. These include rumble strips, changeable message signs, hazard identification beacons, flags, and warning lights. Flagger activated audible warning devices may be used to alert workers to the approach of erratic vehicles. Misuse and overuse of special devices/techniques can greatly lessen their effectiveness.
- **Public Information –** Improved driver performance may be realized through a well-prepared and complete public relations effort that covers the nature of the work, the time and duration of its execution, and its anticipated effects upon traffic and possible alternate routes and modes of travel.
- **Road Closure –** If alternate routes are available to handle detoured traffic, the road may be closed temporarily during times of greatest worker hazard-which, in addition to

offering maximum worker safety, may facilitate quicker project completion and thus further reduce worker vulnerability.

Confined Space Entry

Purpose

The purpose of this program is to establish Celtic Commercial Painting, LLC. practices and procedures to protect employees at a worksite with one or more confined spaces.

General Requirements

1. Before it begins work at a worksite, each employer must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

2. If the workplace contains one or more permit spaces, the employer who identifies, or who receives notice of, a permit space must:

    a. Inform exposed employees by posting danger signs or by any other equally effective means, of the existence and location of, and the danger posed by, each permit space; and

Note: A sign reading "DANGER-PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" or using other similar language would satisfy the requirement for a sign.

    b. Inform, in a timely manner and in a manner other than posting, its employees' authorized representatives and the controlling contractor of the existence and location of, and the danger posed by, each permit space.

3. Each employer who identifies, or receives notice of, a permit space and has not authorized employees it directs to work in that space must take effective measures to prevent those employees from entering that permit space, in addition to complying with all other applicable requirements of this program.

4. If Celtic Commercial Painting, LLC. decides that employees it directs will enter a permit space, this written permit space program shall be implemented at the construction site. This written program must be made available prior to and during entry operations for inspection by employees and their authorized representatives.

5. Celtic Commercial Painting, LLC. may use the "Alternative Procedures" listed below for entering a permit space only under the following conditions:

    a. All physical hazards in the space are eliminated or isolated through engineering controls so that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;

b. Continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry, and that, in the event the ventilation system stops working, entrants can exit the space safely;
c. Monitoring and inspection data shows that all physical hazards have been eliminated or isolated, & that continuous forced air ventilation alone is sufficient to maintain the permit space safe for entry;
d. If an initial entry of the permit space is necessary to obtain the data listed above, the entry is performed in accordance with this entire program (not the "Alternative Procedures");
e. The determinations and supporting data described above are documented and made available to each employee;

"Alternative Procedures" are as follows:

a. Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
b. When entrance covers are removed, the opening must be immediately guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.
c. Before an employee enters the space, the internal atmosphere must be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space must be provided an opportunity to observe the pre-entry testing.
d. No hazardous atmosphere is permitted within the space whenever any employee is inside the space.
e. Continuous forced air ventilation must be used, as follows:

    i. An employee must not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;
    ii. The forced air ventilation must be so directed as to ventilate the immediate areas where an employee is or will be present within the space and must continue until all employees have left the space;
    iii. The air supply for the forced air ventilation must be from a clean source and must not increase the hazards in the space.

f. The atmosphere within the space must be continuously monitored. If continuous monitoring is used, the employer must ensure that the monitoring equipment has an alarm that will notify all entrants if a specified atmospheric threshold is achieved, or that an employee will check the monitor with sufficient frequency to ensure that entrants have adequate time to escape. All monitoring must ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space must be provided with an opportunity to observe monitoring. Employees are entitled to request additional monitoring at any time
g. If a hazard is detected during entry:

i. Each employee must leave the space immediately;
ii. The space must be evaluated to determine how the hazard developed; and
iii. The employer must implement measures to protect employees from the hazard before any subsequent entry takes place.

h. The employer must ensure a safe method of entering and exiting the space. If a hoisting system is used, it must be designed and manufactured for personnel hoisting.
i. The employer must verify that the space is safe for entry and that the pre-entry measures have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification must be made before entry and must be made available to each employee entering the space.

6. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, or some indication that the initial evaluation of the space may not have been adequate, each entry employer must have a competent person reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

7. A space classified by an employer as a permit-required confined space may only be reclassified as a non-permit confined space when a competent person determines that all of the following requirements have been met:

a. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated or isolated without entry into the space (unless the employer can demonstrate that doing so without entry is infeasible), the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated or isolated;

b. The entry employer must eliminate or isolate the hazards without entering the space, unless it can demonstrate that this is infeasible. If it is necessary to enter the permit space to eliminate or isolate hazards, such entry must be performed in accordance with this entire program (not the “Alternative Procedures”). If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated or isolated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated or isolated;

Note: Control of atmospheric hazards through forced air ventilation does not constitute elimination or isolation of the hazards. Item #5 above covers permit space entry where the employer can demonstrate that forced air ventilation alone will control all hazards in the space.

c. The entry employer must document the basis for determining that all hazards in a permit space have been eliminated or isolated, through a certification that contains the date, the location of the space, and the signature of the person making the

determination. The certification must be made available to each employee entering the space; and

d. If hazards arise within a permit space that has been reclassified as a non-permit space, each employee in the space must exit the space. The entry employer must then reevaluate the space and reclassify it as a permit space as appropriate in accordance with all other applicable provisions of this program.

8. Permit space entry communication and coordination:

a. Before entry operations begin, the host employer must provide the following information, if it has it, to the controlling contractor:

i. The location of each known permit space;
ii. The hazards or potential hazards in each space or the reason it is a permit space; and
iii. Any precautions that the host employer or any previous controlling contractor or entry employer implemented for the protection of employees in the permit space.

b. Before entry operations begin, the controlling contractor must:

i. Obtain the host employer's information about the permit space hazards and previous entry operations; and
ii. Provide the following information to each entity entering a permit space and any other entity at the worksite whose activities could foreseeably result in a hazard in the permit space:

1. The information received from the host employer;
2. Any additional information the controlling contractor has about the space location, space hazards or potential hazards; and
3. The precautions that the host employer, controlling contractor, or other entry employers implemented for the protection of employees in the permit spaces.

c. Before entry operations begin, each entry employer must:

i. Obtain all of the controlling contractor's information regarding permit space hazards and entry operations; and
ii. Inform the controlling contractor of the permit space program that the entry employer will follow, including any hazards likely to be confronted or created in each permit space.

d. The controlling contractor and entry employer(s) must coordinate entry operations when:

i. More than one entity performs permit space entry at the same time; or

ii. Permit space entry is performed at the same time that any activities that could foreseeably result in a hazard in the permit space are performed.

e. After entry operations:

i. The controlling contractor must debrief each entity that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space(s) during entry operations;
ii. The entry employer must inform the controlling contractor in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations; and
iii. The controlling contractor must apprise the host employer of the information exchanged with the entry entities pursuant to this subparagraph.

9. If there is no controlling contractor present at the worksite, the requirements for, and role of, controlling contactors in this section must be fulfilled by the host employer or other employer who arranges to have employees of another employer perform work that involves permit space entry.

Permit-Required Confined Space Program

Each entry employer must:

1. Implement the measures necessary to prevent unauthorized entry;

2. Identify and evaluate the hazards of permit spaces before employees enter them;

3. Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:

a. Specifying acceptable entry conditions;
b. Providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces;
c. Isolating the permit space and physical hazard(s) within the space;
d. Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards;

Note: When an employer is unable to reduce the atmosphere below 10 percent LFL, the employer may only enter if the employer inerts the space so as to render the entire atmosphere in the space non-combustible, and the employees use PPE to address any other atmospheric hazards (such as oxygen deficiency), and the employer eliminates or isolates all physical hazards in the space.

a. Determining that, in the event the ventilation system stops working, the monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the permit space;

b. Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;
c. Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry, and ensuring that employees are not allowed to enter into, or remain in, a permit space with a hazardous atmosphere unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee; and
d. Eliminating any conditions (for example, high pressure) that could make it unsafe to remove an entrance cover.

4. Provide the following equipment at no cost to each employee, maintain that equipment properly, and ensure that each employee uses that equipment properly:

    a. Testing and monitoring equipment needed to evaluate permit space conditions;
    b. Ventilating equipment needed to obtain acceptable entry conditions;
    c. Necessary communications equipment;
    d. Necessary PPE;
    e. Intrinsically safe lighting equipment that is sufficient to enable employees to see well enough to work safely and to exit the space quickly in an emergency;
    f. Barriers and shields as necessary;
    g. Equipment, such as ladders, needed for safe ingress and egress by authorized entrants;
    h. Necessary rescue and emergency equipment, except to the extent that the equipment is provided by rescue services; and
    i. Any other equipment necessary for safe entry into, safe exit from, and rescue from, permit spaces.

5. Evaluate permit space conditions in accordance with the following:

    a. Test conditions in the permit space to determine if acceptable entry conditions exist before changes to the space's natural ventilation are made, and before entry is authorized to begin, except that, if an employer demonstrates that isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), the employer must:

        i. Perform pre-entry testing to the extent feasible before entry is authorized; and,
        ii. If entry is authorized, continuously monitor entry conditions in the areas where authorized entrants are working;
        iii. Provide an early-warning system that continuously monitors for non-isolated engulfment hazards. The system must alert authorized entrants and attendants in sufficient time for the authorized entrants to safely exit the space.

    b. Continuously monitor atmospheric hazards;

c. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors;
d. Provide each authorized entrant, or that employee's authorized representative, an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;
e. Reevaluate the permit space in the presence of any authorized entrant, or that employee's authorized representative, who requests that the employer conduct such reevaluation because there is some indication that the evaluation of that space may not have been adequate; and
f. Immediately provide each authorized entrant, or that employee's authorized representative, with the results of any testing conducted.

6. Provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations:

    a. Attendants may be assigned to only one permit space.
    b. Attendants may be stationed at any location outside the permit space as long as the duties described in this program can be effectively performed for each permit space to which the attendant is assigned.

7. Designate each person who is to have an active role (as, for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations, identify the duties of each such employee, and provide each such employee with the training required by this program;

8. Develop and implement procedures for summoning rescue and emergency services (including procedures for summoning emergency assistance in the event of a failed non-entry rescue), for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue;

9. Develop and implement a system for the preparation, issuance, use, and cancellation of entry permits as required by this program, including the safe termination of entry operations under both planned and emergency conditions;

10. Develop and implement procedures to coordinate entry operations, in consultation with the controlling contractor, when employees of more than one employer are working simultaneously in a permit space or elsewhere on the worksite where their activities could, either alone or in conjunction with the activities within a permit space, foreseeably result in a hazard within the confined space, so that employees of one employer do not endanger the employees of any other employer;

11. Develop and implement procedures (such as closing off a permit space and canceling the permit) necessary for concluding the entry after entry operations have been completed;

12. Review entry operations when the measures taken under the Confined Space Entry Program may not protect employees and revise the program to correct deficiencies found to exist before subsequent entries are authorized; and

Note: Examples of circumstances requiring the review of the Confined Space Entry Program include, but are not limited to: Any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near miss during entry, a change in the use or configuration of a permit space, and employee complaints about the effectiveness of the program.

13. Review the Confined Space Entry Program, using retained cancelled permits, within 1 year after each entry and revise the program as necessary to ensure that employees participating in entry operations are protected from permit space hazards.

Note: Employers may perform a single annual review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.

Permitting Process

1. Before entry is authorized, each entry employer must document the completion of pre-entry measures by preparing an entry permit.

2. Before entry begins, the entry supervisor identified on the permit must sign the entry permit to authorize entry.

3. The completed permit must be made available at the time of entry to all authorized entrants or their authorized representatives, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.

4. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.

5. The entry supervisor must terminate entry and take the following action when any of the following apply:

    a. Cancel the entry permit when the entry operations covered by the entry permit have been completed; or
    b. Suspend or cancel the entry permit and fully reassess the space before allowing reentry when a condition that is not allowed under the entry permit arises in or near the permit space and that condition is temporary in nature and does not change the configuration of the space or create any new hazards within it; and
    c. Cancel the entry permit when a condition that is not allowed under the entry permit arises in or near the permit space and that condition is not temporary in

nature, changes the configuration of the space, or creates any new hazards within the space.

6. The entry employer must retain each canceled entry permit for at least 1 year to facilitate the review of the permit-required Confined Space Entry Program. Any problems encountered during an entry operation must be noted on the pertinent permit so that appropriate revisions to the Confined Space Entry Program can be made.

Entry Permit

The entry permit that documents compliance with this program and authorizes entry to a permit space must identify:

1. The permit space to be entered;

2. The purpose of the entry;

3. The date and the authorized duration of the entry permit;

4. The authorized entrants within the permit space, by name or by such other means (for example, through the use of rosters or tracking systems) as will enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space;

Note: This requirement may be met by inserting a reference on the entry permit as to the means used, such as a roster or tracking system, to keep track of the authorized entrants within the permit space.

5. Means of detecting an increase in atmospheric hazard levels in the event the ventilation system stops working;

6. Each person, by name, currently serving as an attendant;

7. The individual, by name, currently serving as entry supervisor, and the signature or initials of each entry supervisor who authorizes entry;

8. The hazards of the permit space to be entered;

9. The measures used to isolate the permit space and to eliminate or control permit space hazards before entry;

Note: Those measures can include, but are not limited to, the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.

10. The acceptable entry conditions;

11. The results of tests and monitoring performed, accompanied by the names or initials of the testers and by an indication of when the tests were performed;

12. The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services;

13. The communication procedures used by authorized entrants and attendants to maintain contact during the entry;

14. Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with this program;

15. Any other information necessary, given the circumstances of the particular confined space, to ensure employee safety; and

16. Any additional permits, such as for hot work, that have been issued to authorize work in the permit space.

Training

1. Celtic Commercial Painting, LLC. provide training to each employee, at no cost to the employee, and ensure that the employee possesses the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this program. This training must result in an understanding of the hazards in the permit space and the methods used to isolate, control or in other ways protect employees from these hazards, and for those employees not authorized to perform entry rescues, in the dangers of attempting such rescues.

2. Training required by this section must be provided to each affected employee:

    a. In both a language and vocabulary that the employee can understand;
    b. Before the employee is first assigned duties under this program;
    c. Before there is a change in assigned duties;
    d. Whenever there is a change in permit space entry operations that presents a new hazard about which an employee has not previously been trained; and
    e. Whenever there is any evidence of a deviation from the permit space entry procedures, or there are inadequacies in the employee's knowledge or use of these procedures.

3. The training must establish employee proficiency in the duties required by this program and must introduce new or revised procedures, as necessary, for compliance with this program.

4. Celtic Commercial Painting, LLC. will maintain records to show that the training has been accomplished. The training records shall contain each employee's name, the name

of the trainers, and the dates of training. Training records will be maintained for the duration of employment.

Duties of Authorized Entrants

The entry employer must ensure that all authorized entrants:

1. Are familiar with and understand the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Properly use equipment;

3. Communicate with the attendant as necessary to enable the attendant to assess entrant status and to enable the attendant to alert entrants of the need to evacuate the space;

4. Alert the attendant whenever:

    a. There is any warning sign or symptom of exposure to a dangerous situation; or
    b. The entrant detects a prohibited condition; and

5. Exit from the permit space as quickly as possible whenever:

    a. An order to evacuate is given by the attendant or the entry supervisor;
    b. There is any warning sign or symptom of exposure to a dangerous situation;
    c. The entrant detects a prohibited condition; or
    d. An evacuation alarm is activated.

Duties of Attendants

The entry employer must ensure that each attendant:

1. Is familiar with and understands the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Is aware of possible behavioral effects of hazard exposure in authorized entrants;

3. Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants accurately identifies who is in the permit space;

4. Remains outside the permit space during entry operations until relieved by another attendant;

5. Communicates with authorized entrants as necessary to assess entrant status and to alert entrants of the need to evacuate the space;

6. Assesses activities and conditions inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:

    a. If there is a prohibited condition;
    b. If the behavioral effects of hazard exposure are apparent in an authorized entrant;
    c. If there is a situation outside the space that could endanger the authorized entrants; or
    d. If the attendant cannot effectively and safely perform all the duties required under this section.

7. Summons rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;

8. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

    a. Warns the unauthorized persons that they must stay away from the permit space;
    b. Advises the unauthorized persons that they must exit immediately if they have entered the permit space; and
    c. Informs the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.

9. Performs non-entry rescues as specified by the employer's rescue procedure; and

10. Performs no duties that might interfere with the attendant's primary duty to assess and protect the authorized entrants.

Duties of Entry Supervisors

The entry employer must ensure that each entry supervisor:

1. Is familiar with and understands the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;

3. Terminates the entry and cancels or suspends the permit as required by this program;

4. Verifies that rescue services are available and that the means for summoning them are operable, and that the employer will be notified as soon as the services become unavailable;

5. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and

6. Determines, whenever responsibility for a permit space entry operation is transferred, and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

Rescue and Emergency Services

1. An employer who designates rescue and emergency services must:

    a. Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;
    b. Evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified;
    c. Select a rescue team or service from those evaluated that:

        i. Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified.
        ii. Is equipped for, and proficient in, performing the needed rescue services.
        iii. Agrees to notify the employer immediately in the event that the rescue service becomes unavailable.

    d. Inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site; and
    e. Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue team or service can develop appropriate rescue plans and practice rescue operations.

2. A rescue service must be on-site for immediately dangerous to life and health (IDLH) conditions while work is being performed.

3. An employer whose employees have been designated to provide permit space rescue and/or emergency services must take the following measures and provide all equipment and training at no cost to those employees:

    a. Provide each affected employee with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train each affected employee so the employee is proficient in the use of that PPE;
    b. Train each affected employee to perform assigned rescue duties. The employer must ensure that such employees successfully complete the training, and establish proficiency, required by this program;

c. Train each affected employee in basic first aid and cardiopulmonary resuscitation (CPR). The employer must ensure that at least one member of the rescue team or service holding a current certification in basic first aid and CPR is available; and
d. Ensure that affected employees practice making permit space rescues before attempting an actual rescue, and at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces, except practice rescue is not required where the affected employees properly performed a rescue operation during the last 12 months in the same permit space the authorized entrant will enter, or in a similar permit space. Representative permit spaces must, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

4. Non-entry rescue is required unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. The employer must designate an entry rescue service whenever non-entry rescue is not selected. Whenever non-entry rescue is selected, the entry employer must ensure that retrieval systems or methods are used whenever an authorized entrant enters a permit space, and must confirm, prior to entry, that emergency assistance would be available in the event that non-entry rescue fails. Retrieval systems must meet the following requirements:

    a. Each authorized entrant must use a chest or full-body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which the employer can establish presents a profile small enough for the successful removal of the entrant. Wristlets or anklets may be used in lieu of the chest or full-body harness if the employer can demonstrate that the use of a chest or full-body harness is infeasible or creates a greater hazard and that the use of wristlets or anklets is the safest and most effective alternative.
    b. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.
    c. Equipment that is unsuitable for retrieval must not be used, including, but not limited to, retrieval lines that have a reasonable probability of becoming entangled with the retrieval lines used by other authorized entrants, or retrieval lines that will not work due to the internal configuration of the permit space.

5. If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information must be made available to the medical facility treating the exposed entrant.

Employee Participation

1. Employers must consult with affected employees and their authorized representatives on the development and implementation of all aspects of the Confined Space Entry program.

2. Employers must make available to each affected employee and his/her authorized representatives all information required to be developed by this program.

Provision of Documents to Secretary

For each document required to be retained in this program, the retaining employer must make the document available on request to the Secretary of Labor or the Secretary's designee.

Definitions

The following terms are defined for the purposes of this program only:

Acceptable entry conditions means the conditions that must exist in a permit space, before an employee may enter that space, to ensure that employees can safely enter into, and safely work within, the space.

Attendant means an individual stationed outside one or more permit spaces who assesses the status of authorized entrants and who must perform the duties specified this program.

Authorized entrant means an employee who is authorized by the entry supervisor to enter a permit space.

Barrier means a physical obstruction that blocks or limits access.

Blanking or blinding means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Confined space means a space that:

1. Is large enough and so configured that an employee can bodily enter it;
2. Has limited or restricted means for entry and exit; and
3. Is not designed for continuous employee occupancy.

Control means the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlling Contractor is the employer that has overall responsibility for construction at the worksite.

Note: If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.

Double block and bleed means the closure of a line, duct, or pipe by closing and locking or tagging two inline valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Early-warning system means the method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include, but are not limited to: Alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

Emergency means any occurrence (including any failure of power, hazard control or monitoring equipment) or event, internal or external, to the permit space that could endanger entrants.

Engulfment means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, crushing, or suffocation.

Entry means the action by which any part of a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space whether or not such action is intentional or any work activities are actually performed in the space.

Entry Employer means any employer who decides that an employee it directs will enter a permit space.

Entry permit (permit) means the written or printed document that is provided by the employer who designated the space a permit space to allow and control entry into a permit space and that contains the information specified in this program.

Entry rescue occurs when a rescue service enters a permit space to rescue one or more employees.

Entry supervisor means the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this program.

Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this program for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazard means a physical hazard or hazardous atmosphere. See definitions below.

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

2. Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in subpart D of this part (Occupational Health and Environmental Control), or in subpart Z of this part (Toxic and Hazardous Substances), and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

5. Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, 29 CFR 1926.59, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Host employer means the employer that owns or manages the property where the construction work is taking place.

Hot work means operations capable of providing a source of ignition (for example, riveting, welding, cutting, burning, and heating).

Immediately dangerous to life or health (IDLH) means any condition that would interfere with an individual's ability to escape unaided from a permit space and that poses a threat to life or that would cause irreversible adverse health effects.

Note: Some materials-hydrogen fluoride gas and cadmium vapor, for example-may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" after recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Inerting means displacing the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Note: This procedure produces an IDLH oxygen-deficient atmosphere.

Isolate or isolation means the process by which employees in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for employee contact with a physical hazard.

Limited or restricted means for entry or exit means a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Line breaking means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Lockout means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower flammable limit or lower explosive limit means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Monitor or monitoring means the process used to identify and evaluate the hazards after an authorized entrant enters the space. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-entry rescue occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-permit confined space means a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this subpart.

Oxygen deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
4. Contains any other recognized serious safety or health hazard.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Physical hazard means an existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to: Explosives; mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

Prohibited condition means any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

Qualified person means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Representative permit space means a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter.

Rescue means retrieving, and providing medical assistance to, one or more employees who are in a permit space.

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval system means the equipment (including a retrieval line, chest or full-body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Serious physical damage means an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

Tagout means:

1. Placement of a tagout device on a circuit or equipment that has been de-energized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and

2. The employer ensures that:

    i. Tagout provides equivalent protection to lockout; or
    ii. That lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

Test or **testing** means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Note: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

Ventilate or **ventilation** means controlling a hazardous atmosphere using continuous forced-air mechanical systems.

Confined Space Entry Permit

Identity and Location of Space		
Purpose of Entry		
Duration of Entry	Start Date	
	End Date	
Identify the Physical Hazards in the Space		Ex. Explosives, Mechanical, Electrical, Hydraulic, Pneumatic, Radiation, Temperature Extremes, Engulfment, Noise, Configuration, Chemicals that can cause death or serious physical damage through skin or eye contact, etc.
Describe the Methods Used to Isolate or Control the Physical Hazards/Protect Entrants		
Identify the Actual or Potential Atmospheric Hazards in the Space		Ex. Oxygen Deficient, Oxygen Enriched, Flammable Gas/Vapor/Mist, Combustible Dust, Toxic Substances, any other atmospheric condition that is Immediately Dangerous to Life and Health (IDLH)
Describe the Methods Used to Isolate or Control the Atmospheric Hazards/Protect Entrants		
Describe the determination made to show that, if the ventilation system stops working, atmospheric hazards will remain at safe levels long enough for entrants to recognize the problem and safely exit the space.		

Safe Conditions and/or Monitoring Determined for Physical Hazards						
Safe Levels of Atmospheric Hazards	Hazard		Minimum Limit		Maximum Limit	
	Oxygen Concentration					
	Flammable Gas/Vapors (specify)	1.				
		2.				
		3.				
	Toxic Substances (specify)	1.				
		2.				
		3.				
Pre-Entry Atmospheric Monitoring Results*	Date	Time	Oxygen	Flammable Gas/Vapors	Toxic Substances	Tester Initials
Continuous Atmospheric Monitoring Results*	Date	Time	Oxygen	Flammable Gas/Vapors	Toxic Substances	Tester Initials
* May be included as attachment to this permit, if necessary.						

Current Entry Supervisor	Name		Signature/Initials	
Current Attendants	Name		Name	
Authorized Entrants	Name/Identifier		Name/Identifier	
Identify the Rescue Service (check one)			Identity of Service	
		Non-Entry Rescue		
		Entry Rescue		
Identify the Emergency Service	Identity of Service		Contact Information	Equipment Needed to Summon
Entry Supervisor who first verified this entry permit and authorized initial entry into this Permit-Required Confined Space	Name		Signature/Initials	
Methods of Communication Between Attendants and Authorized Entrants				
Equipment Needed		N/A	Equipment Description	
	Lighting			
	Ventilation			
	Air Monitoring			
	Heating			
	Guardrails/Covers			
	Controlled Descent/Retrieval			
	Ladders			
	Scaffolding			
	Early Warning System			
	Rescue Equipment			
	Other			
Other Information Not Documented Elsewhere On This Permit				

Describe any condition making it unsafe to remove an entrance cover and how the condition was eliminated.		
Describe any actions taken to guard holes and openings into the space from falling individuals and objects.		
Describe the method used for entering and exiting the space.		
Identify any additional permits (i.e., hot work) that have been issued to authorize work in the permit space.		
Entry Permit Cancellation	Reason for Cancellation	
	Name of Individual who Cancelled Permit	
	Signature/Initials of Individual	
	Date of Cancellation	
	Time of Cancellation	

Hazard Communication

Purpose

The purpose of the Hazard Communication (HazCom) Program is to evaluate hazardous chemicals in the workplace and communicate this information as well as appropriate protective measures to our employees. A written hazard communication program will be developed, implemented, and maintained at each workplace.

Program contents include:

- Hazard Determination Procedures,
- Safety Data Sheets (SDS),
- Labels and Other Forms of Warning,
- Multi-Employer Worksites,
- Training,
- Non-Routine Tasks, and
- Additional Information.

Hazardous Determination Procedures

Hazardous chemicals shall be evaluated by using the following available methods:

- Examining available studies done by manufacturers and suppliers of chemicals we now use in our workplace.
- Rely on SDS information from our manufacturers and suppliers to determine the various hazards of the chemicals and materials they supply. All suppliers will be required to supply a SDS with each chemical shipment.
- Celtic Commercial Painting, LLC. shall compile and maintain a hazardous chemical inventory list. This list is available to all employees upon request.

Employees should immediately contact their supervisor if they have any questions regarding the safe handling of any chemicals.

Safety Data Sheets (SDS)

- The Supervisor will be responsible for maintaining the SDS Program.
- All SDS information for chemicals used will be available for viewing, in case of an emergency and upon request, to employees and their representatives.
- All SDS shall include the following information:
    - **Section 1 – Identification**
        - Product identifier; manufacturer or distributor name, address, and phone number; emergency phone number; recommended use; restrictions on use.
    - **Section 2 – Hazard(s) Identification**
        - All hazards regarding the chemical; required label elements.
    - **Section 3 – Composition/Information on Ingredients**
        - Information on chemical ingredients; trade secret claims.
    - **Section 4 – First Aid Measures**
        - Important symptoms/effects, acute, delayed; required treatment.
    - **Section 5 – Firefighting Measures**
        - Suitable extinguishing techniques and equipment; chemical hazards from fire.
    - **Section 6 – Accidental Release Measures**
        - Emergency procedures; protective equipment; proper methods of containment and cleanup.
    - **Section 7 – Handling and Storage**
        - Precautions for safe handling and storage, including incompatibilities.
    - **Section 8 – Exposure Controls/Personal Protection**
        - OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).
    - **Section 9 – Physical and Chemical Properties**
        - Chemical's characteristics.
    - **Section 10 – Stability and Reactivity**
        - Chemical stability and possibility of hazardous reactions.
    - **Section 11 – Toxicological Information**
        - Routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
    - **Section 12 – Ecological Information (Non-mandatory)**
    - **Section 13 – Disposal Considerations (Non-mandatory)**
    - **Section 14 – Transport Information (Non-mandatory)**
    - **Section 15 – Regulatory Information (Non-mandatory)**
    - **Section 16 – Other Information**
        - Date of preparation or last revision.

Labels and Other Forms of Warning

- Manufacturer, Importer, or Distributor labels on shipped containers of hazardous chemicals shall not be removed.
- Containers of hazardous chemicals in the workplace shall be labeled with either the information contained under column A or column B, as provided in the following table:

A	B
• Product identifier, • Signal word, • Hazard statement(s), • Pictogram(s), and • Precautionary statement(s).	Product identifier and words, pictures, symbols, or a combination thereof, which provide at least general information regarding the hazards of the chemicals and which, in conjunction with the other information immediately available to employees under the Hazard Communication Program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

- The receiving supervisor will ensure all containers of chemicals are properly labeled at the time they are received and prior to jobsite delivery. This person will check to ensure the container is clearly labeled and identified as to its contents; has the appropriate hazard warnings, as provided in the above table; and lists the name, address, and telephone number of the manufacturer, importer, or other responsible party. Any container that does not have this information may be returned to the supplier.
- Celtic Commercial Painting, LLC. will ensure workplace labels or other forms of warning are legible, in English, and prominently displayed on the container. Celtic Commercial Painting, LLC. may add the information in another language, as long as the information is presented in English as well.
- Labels are not to be removed from any container or defaced in any manner.
- Empty containers are not to be re-used to store other materials, unless the container has been cleaned, the old label removed, and a new label affixed in its place.
- The Supervisor shall be responsible for maintaining proper container labeling on the jobsite.

Training

It is the intent of this procedure to provide employees with the required training and information necessary concerning the hazardous chemicals they may be exposed to in the workplace. Training will be conducted initially and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Every employee shall receive training regarding the following:

- Explanation of the standard and how it pertains to the employee, including their rights and responsibilities under the regulation.
- Identification of operations and procedures that incorporate the use of hazardous chemicals/situations in their work area.

- The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area.
- Location and availability of the written Hazard Communication Program SDSs.
- How to read labels, the meaning of pictograms, and the organizational structure of SDSs so the appropriate hazard information may be obtained.
- Warnings and hazards associated with the usage of hazardous chemicals.
- Additionally, routes of entry and methods of detection shall be explained for hazardous chemicals used in work applications.
- Explanation of warnings, labels, and proper storage requirements.
- Explanation of engineering controls, administrative controls, procedures, personal hygiene, and personal protective equipment used to protect against possible exposure.
- Identify routes of entry into the body: inhalation, absorption, injection, and ingestion. Identify types of exposure: acute and chronic.
- Emergency and first aid procedures to follow if employees are exposed to hazardous substances or a spill.

Non-Routine Tasks

Employees contemplating a non-routine task, e.g., work in contaminated soil or asbestos removal, will consult with the supervisor. The supervisor will ensure employees are informed of chemical hazards associated with the performance of these tasks and appropriate protective measures, prior to the start of work. If employees encounter unlabeled pipes in the work area, the supervisor shall be notified, and work shall not be performed until the supervisor ensures employees are informed of the hazards associated with pipe contents.

Multi-Employer Worksites

It is the responsibility of the Supervisor to provide employees of any other employers at the work site with the following information:

- Copies of SDSs (or make them available at a central location) for any hazardous chemicals the other employer(s)' employee may be exposed to while working.
- Inform other employers of any precautionary measures that need to be taken to protect employees during normal operating conditions or in foreseeable emergencies.
- Provide other employers with an explanation of the labeling system used at the work site.

It is also the responsibility of the Supervisor to identify and obtain SDSs for the chemicals the contractor is bringing into the work place.

Additional Information

In accordance with the Hazard Communication Program, the following procedures will be adhered to at all times:

- No smoking shall be permitted in the vicinity of flammable materials.

- Approved containers shall be used for the storage and handling of flammable or combustible substances.
- Employees shall obey all safety rules and posted signs while on the job.
- Non-routine tasks will be supervised.

Spill Prevention, Containment, and Control

Spill Prevention Measures

- Celtic Commercial Painting, LLC. will train employees on potential sources of pollution on-site and provide clear, common-sense spill prevention and response practices. It is required that these practices be strictly followed.
- Identify equipment that may be exposed to storm water, pollutants that may be generated and possible sources of leaks or discharges.
- Perform regular inspection and preventative maintenance of equipment to ensure proper operation and to check for leaks or evidence of discharge (stains). Provide clear procedures to ensure that needed repairs are completed and provide temporary leak containment until such repairs can be implemented.
- Drain or replace motor oil and other automotive fluids in a designated area away from storm sewer inlets. Collect spent fluids and recycle or dispose of properly. Never dispose of these fluids in the storm sewer or sanitary sewer.
- In fueling areas, clean up spills with dry methods (absorbents) and use damp cloths on gas pumps and damp mops on paved surfaces. Never use a hose to “wash down” a fuel spill.
- Where practical, reduce storm water contact with equipment and materials by implementing indoor or covered storage, implementing storm water run-on control measures and following good housekeeping practices.
- Chemical substances should be stored in proper containers to minimize the potential for a spill. Whenever possible, chemicals should be kept in closed containers and stored so they are not exposed to storm water.

Identification of Spill Areas

Identify potential spill areas, potential spill volumes, material types, frequency of material use, and drainage paths from spill areas with relation to storm sewer inlets, adjacent water-bodies, and containment structures. Use this information to determine the types of spill prevention and control measures needed specific to the site conditions. Examples of potential spill locations include:

- Loading and unloading areas
- Outdoor storage areas
- Outdoor manufacturing or processing activities
- Waste disposal/storage areas
- Areas that generate significant dust or particulates (that may be subsequently deposited on the ground)
- Salt piles
- Areas prone to spills based on past experience at the site
- Locations where other routine maintenance activities occur such as equipment maintenance and cleaning, pesticide/fertilizer application, etc.

Additionally, areas where smaller leaks may occur such as parking should also have basic spill cleanup procedures and kit. A proper spill kit must contain the appropriate supplies for materials that may be spilled. Supplies must be easily accessible when required, and considerations must be made for both the type and quantity of materials.

Material Handling Procedures

From a water quality perspective, the primary principle behind effective material handling practices is to minimize exposure to storm water. This can be accomplished by storing the material indoors under weather-resistant covering, elevating the material off the ground by using pallets, and diverting storm water around materials storage areas. Representative outdoor materials handling procedures include:

- Keep bulk solid materials such as raw materials, sand, gravel, topsoil, compost, concrete, packing materials, metal products and other materials covered and protected from storm water.
- When practical, store materials on impermeable surfaces.
- Store hazardous materials according to federal, state, and local hazardous materials requirements.
- Celtic Commercial Painting, LLC. will adopt site-specific procedures that reduce the chance of spills or leaks during filling or transfer of materials.
- Substitute less toxic or non-toxic materials for toxic materials.
- Store containers that are easily punctured or damaged away from high traffic areas (i.e., adopt a materials flow/plant layout plan).
- Add waste-capture containers such as collection pans for lubricating fluids.
- Store drums and containers with liquid materials on impermeable surfaces and provide secondary containment where appropriate. Drums stored outdoors should be located on pallets to minimize contact with runoff
- Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes, but is not limited to, clean and organized storage, labeling, and secondary containment where necessary.

Spill Response Procedures and Equipment

Spill response procedures are tailored to site-specific conditions and industry-specific regulatory requirements. Celtic Commercial Painting, LLC.’s general spill response procedures include:

- Containment and cleanup of spills will begin promptly after the spill is observed.
- Sweep up small quantities of dry chemical or solids to reduce exposure to runoff. Shoveling may be used for larger quantities of materials.
- Absorbents should be readily accessible in fueling areas or other areas susceptible to spills.
- Wipe up small spills with a shop rag, store shop rags in appropriate containers, dispose of rags properly or use a professional industrial cleaning service.

- Contain medium-sized spills with absorbents (e.g., kitty litter, sawdust) and use inflatable berms or absorbent “snakes” as temporary booms for the spill. Store and dispose of absorbents properly. Wet/dry vacuums may also be used, but not for volatile fluids.
- Install drip pans below minor equipment leaks and properly dispose of collected material until a repair can be made.
- For large spills, first contain the spill and plug storm drain inlets where the liquid may migrate off-site, then clean up the spill.
- All spills, no matter the size, will be immediately communicated to the project manager and facility owner.
- Excavation of spill areas to removed contaminated material may be required where large liquid spills occur on unpaved surfaces.
- An inventory of cleanup materials should be maintained onsite and strategically located based on the types and quantities of chemicals present.

Structural Spill Containment Measures

Two general approaches are often used when implementing spill containment measures. The first approach is designed to contain the entire spill. The second approach uses curbing to route spilled material to a collection basin. Both containment berming and curbing should be sized to safely contain or convey to a collection basin a spill from the largest storage tank, rail car, tank truck, or other containment device in the possible spill area. The spill containment area must have an impermeable surface impermeable liner, asphalt or concrete) to prevent groundwater contamination.

The containment system must be designed to enable collection and removal of spilled material through a pump or vacuum trucks, use of sorbent or gelling material, or other measures. Material removed from the spill area must be disposed of or recycled according to local, state, and federal standards.

If the capacity of the containment berming or the collection basin is exceeded, supplemental spill control measures should be available such as a portable containment device, sorbent materials, or gelling agents that eventually solidify the material. Water that collects within containment areas due to rainfall or snowmelt must be appropriately treated before release from the spill area.

Emergency Communication

Proper communication measures will be given to employees to initiate in the event of a spill. Communication procedures will be based on type and quantity of materials spilled. In general, two-way radio communication will be the standard communication for any emergency.

Ventilation

Introduction

Celtic Commercial Painting, LLC. will provide the employees with well-ventilated air that is safe to breathe. Whenever hazardous substances such as dusts, fumes, mists, vapors, or gases exist or are produced in the course of construction work, their concentrations shall not exceed the limits specified in 29 CFR 1926.55(a). When ventilation is used as an engineering control method, the system shall be installed and operated according to the requirements of this section.

Ventilation of Worksites

Local Exhaust Ventilation

When a local exhaust ventilation system is used as an engineering control method will be of such a design as to prevent dispersion into the air of dusts, fumes, mists, vapors, and gases in concentrations causing harmful exposure. Such exhaust systems shall be of such a design that dusts, fumes, mists, vapors, or gases are not drawn through the work area of employees.

Design and Operation

Exhaust fans, jets, ducts, hoods, separators, and all necessary appurtenances, including refuse receptacles, will be so designed, constructed, maintained and operated as to ensure the required protection by maintaining a volume and velocity of exhaust air sufficient to gather dusts, fumes, vapors, or gases from said equipment or process, and to convey them to suitable points of safe disposal, thereby preventing their dispersion in harmful quantities into the atmosphere where employees work.

Duration of Operations

The exhaust system shall be in operation continually during all operations which it is designed to serve. If an employee remains in a contaminated or hazardous area, the system shall continue to operate after the cessation of said operations, the length of time to depend upon the individual circumstances and effectiveness of the general ventilation system.

Since dust capable of causing disability is, according to the best medical opinion, of microscopic size, tending to remain for hours in suspension in still air, it is essential that the exhaust system be continued in operation for a time after the work process or equipment served by the same shall have ceased, in order to ensure the removal of the harmful elements to the required extent. For the same reason, employees wearing respiratory equipment shall not remove same immediately until the atmosphere seems clear.

Disposal of Exhaust Materials

The air outlet from every dust separator, and the dusts, fumes, mists, vapors, or gases collected by an exhaust or ventilating system will discharge to the outside atmosphere. Collecting systems

which return air to work area may be used if concentrations which accumulate in the work area air do not result in harmful exposure to employees. Dust and refuse discharged from an exhaust system will be disposed of in such a manner that it will not result in harmful exposure to employees.

Abrasive Blasting

This paragraph applies to all operations where an abrasive is forcibly applied to a surface by pneumatic or hydraulic pressure, or by centrifugal force. It does not apply to steam blasting, or steam cleaning, or hydraulic cleaning methods where work is done without the aid of abrasives.

Definitions

- **Abrasive** – A solid substance used in an abrasive blasting operation
- **Abrasive-blasting respirator** – A respirator constructed so that it covers the wearer's head, neck, and shoulders to protect the wearer from rebounding abrasive.
- **Blast cleaning barrel** – A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.
- **Blast cleaning room** – A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.
- **Blasting cabinet** – An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.
- **Clean air** – Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.
- **Dust collector** – A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.
- **Exhaust ventilation system** – A system for removing contaminated air from a space, comprising two or more of the following elements (A) enclosure or hood, (B) duct work, (C) dust collecting equipment, (D) exhauster, and (E) discharge stack.
- **Particulate-filter respirator** – An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.
- **Respirable dust** – Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.
- **Rotary blast cleaning table** – An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.
- **Abrasive blasting** – The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

Dust Hazards from Abrasive Blasting

Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition

and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

The concentration of respirable dust or fume in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels specified in 29 CFR 1926.55 or other applicable safety and health standards.

Organic abrasives which are combustible shall be used only in automatic systems. Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring, shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z33.1-1961 (NFPA 91-1961), and Subpart S of 29 CFR 1926.57. The blast nozzle shall be bonded and grounded to prevent the build-up of static charges. Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion venting Guide. NFPA 68-1954.

Blast-Cleaning Enclosure

Blast-cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure during the blasting operation.

All air inlets and access openings shall be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized and visible spurts of dust will not be observed.

The rate of exhaust shall be sufficient to provide prompt clearance of the dust-laden air within the enclosure after the cessation of blasting. Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the dusty air within the enclosure.

Safety glass protected by screening shall be used in observation windows, where hard deep-cutting abrasives are used.

Slit abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

Doors shall be flanged and tight when closed. Doors on blast-cleaning rooms shall be operable from both inside and outside, except that where there is a small operator access door, the large work access door may be closed or opened from the outside only.

Exhaust Ventilation System

The construction, installation, inspection, and maintenance of exhaust systems shall conform to the principles and requirements set forth in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, and ANSI Z33.1-

When dust leaks are noted, repairs shall be made as soon as possible.

The static pressure drop at the exhaust ducts leading from the equipment shall be checked when the installation is completed and periodically thereafter to assure continued satisfactory operation. Whenever an appreciable change in the pressure drop indicates a partial blockage, the system shall be cleaned and returned to normal operating condition.

In installation where the abrasive is recirculated, the exhaust ventilation system for the blasting enclosure shall not be relied upon for the removal of fines from the spent abrasive instead of an abrasive separator. An abrasive separator shall be provided for the purpose.

The air exhausted from blast-cleaning equipment shall be discharged through dust collecting equipment. Dust collectors shall be setup so that the accumulated dust can be emptied and removed without contaminating other working areas.

Personal Protective Equipment

The company will provide the necessary PPE when appropriate.

The company and its employees must use only respirators approved by NIOSH under 42 CFR part 84 for protecting employees from dusts produced during abrasive-blasting operations. For a more comprehensive explanation of respirator requirements, see the Respiratory Protection Program section of this manual.

1. Abrasive-blasting respirators shall be worn by all abrasive-blasting operators when:

    - When working inside of blast-cleaning rooms, or
    - When using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure, or
    - Where concentrations of toxic dust dispersed by the abrasive blasting may exceed the limits set in 29 CFR 1926.55 or other applicable safety and health standards and the nozzle and blast are not physically separated from the operator in an exhaust-ventilated enclosure.

2. Properly fitted particulate-filter respirators, commonly referred to as dust-filter respirators, may be used for short, intermittent, or occasional dust exposures such as cleanup, dumping of dust collectors, or unloading shipments of sand at a receiving point when it is not feasible to control the dust by enclosure, exhaust ventilation, or other

means. The respirators used must be approved by NIOSH under 42 CFR part 84 for protection against the specific type of dust encountered.

A respiratory protection program as defined and described in 29 CFR 1926.103, shall be established wherever it is necessary to use respiratory protective equipment. For a more comprehensive explanation of respirator requirements, see the Respiratory Protection Program section of this manual.

3. Operators shall be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives. Safety shoes shall be worn to protect against foot injury where heavy pieces of work are handled.

4. Safety shoes shall conform to the requirements of American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

5. Equipment for protection of the eyes and face shall be supplied to the operator when the respirator design does not provide such protection and to any other personnel working in the vicinity of abrasive blasting operations. This equipment shall conform to the requirements of 1926.102.

Air Supply and Air Compressors

Air for abrasive-blasting respirators must be free of harmful quantities of dusts, mists, or noxious gases, and must meet the requirements for supplied-air quality and use specified in 29 CFR 1910.134(i).

Operational Procedures and General Safety

Dust shall not be permitted to accumulate on the floor or on ledges outside of an abrasive-blasting enclosure, and dust spills shall be cleaned up promptly. Aisles and walkways shall be kept clear of steel shot or similar abrasive which may create a slipping hazard.

Grinding, Polishing, and Buffing Operations

This prescribes the use of exhaust hood enclosures and systems in removing dust, dirt, fumes, and gases generated through the grinding, polishing, or buffing of ferrous and nonferrous metals.

Definitions

- **Abrasive cutting-off wheels** – Organic-bonded wheels, the thickness of which is not more than one forty-eighth of their diameter for those up to, and including, 20 inches (50.8 cm) in diameter, and not more than one-sixtieth of their diameter for those larger than 20 inches (50.8 cm) in diameter, used for a multitude of operations variously known as cutting, cutting off, grooving, slotting, coping, and jointing, and the like. The wheels may be "solid" consisting of organic-bonded abrasive material throughout, "steel centered" consisting of a steel disc with a rim of organic-bonded material molded around

the periphery, or of the "inserted tooth" type consisting of a steel disc with organic-bonded abrasive teeth or inserts mechanically secured around the periphery.

- **Application** – Wherever dry grinding, dry polishing or buffing is performed, and employee exposure, without regard to the use of respirators, exceeds the permissible exposure limits prescribed in 1926.55 or other pertinent sections of this part, a local exhaust ventilation system shall be provided and used to maintain employee exposures within the prescribed limits.
- **Belts** – All power-driven, flexible, coated bands used for grinding, polishing, or buffing purposes.
- **Branch pipe** – The part of an exhaust system piping that is connected directly to the hood or enclosure.
- **Cradle** – A movable fixture, upon which the part to be ground or polished is placed.
- **Disc wheels** – All power-driven rotatable discs faced with abrasive materials, artificial or natural, and used for grinding or polishing on the side of the assembled disc.
- **Entry loss** – The loss in static pressure caused by air flowing into a duct or hood. It is usually expressed in inches of water gauge.
- **Exhaust system** – A system consisting of branch pipes connected to hoods or enclosures, one or more header pipes, an exhaust fan, means for separating solid contaminants from the air flowing in the system, and a discharge stack to outside.
- **Grinding wheels** – All power-driven rotatable grinding or abrasive wheels, except disc wheels as defined in this standard, consisting of abrasive particles held together by artificial or natural bonds and used for peripheral grinding.
- **Header pipe (main pipe)** – A pipe into which one or more branch pipes enter and which connects such branch pipes to the remainder of the exhaust system.
- **Hoods and enclosures** – The partial or complete enclosure around the wheel or disc through which air enters an exhaust system during operation.
- **Horizontal double-spindle disc grinder** – A grinding machine carrying two power-driven, rotatable, coaxial, horizontal spindles upon the inside ends of which are mounted abrasive disc wheels used for grinding two surfaces simultaneously.
- **Horizontal single-spindle disc grinder** – A grinding machine carrying an abrasive disc wheel upon one or both ends of a power-driven, rotatable single horizontal spindle.
- **Polishing and buffing wheels** – All power-driven rotatable wheels composed all or in part of textile fabrics, wood, felt, leather, paper, and may be coated with abrasives on the periphery of the wheel for purposes of polishing, buffing, and light grinding.
- **Portable grinder** – Any power-driven rotatable grinding, polishing, or buffing wheel mounted in such manner that it may be manually manipulated.
- **Scratch brush wheels** – All power-driven rotatable wheels made from wire or bristles, and used for scratch cleaning and brushing purposes.
- **Swing-frame grinder** – Any power-driven rotatable grinding, polishing, or buffing wheel mounted in such a manner that the wheel with its supporting framework can be manipulated over stationary objects.
- **Velocity pressure (vp)** – The kinetic pressure in the direction of flow necessary to cause a fluid at rest to flow at a given velocity. It is usually expressed in inches of water gauge.
- **Vertical spindle disc grinder** – A grinding machine having a vertical, rotatable power-driven spindle carrying a horizontal abrasive disc wheel.

Hood and Branch Pipe Requirements

Hoods connected to exhaust systems shall be used, and such hoods shall be designed, located, and placed so that the dust or dirt particles shall fall or be projected into the hoods in the direction of the air flow. No wheels, discs, straps, or belts shall be operated in such manner and in such direction as to cause the dust and dirt particles to be thrown into the operator's breathing zone.

Grinding wheels on floor stands, pedestals, benches, and special-purpose grinding machines and abrasive cutting-off wheels shall have not less than the minimum exhaust volumes shown in Table 3 with a recommended minimum duct velocity of 4,500 feet per minute in the branch and 3,500 feet per minute in the main. The entry losses from all hoods except the vertical-spindle disc grinder hood, shall equal 0.65 velocity pressure for a straight takeoff and 0.45 velocity pressure for a tapered takeoff. The entry loss for the vertical-spindle disc grinder hood is shown in Figure 6.

Table 3 – Grinding and Abrasive Cutting-Off Wheels

Wheel diameter, inches (cm)	Wheel width, inches (cm)	Minimum exhaust volume (feet (3)/min.)
To 9 (22.86)	1-1/2 (3.81)	220
Over 9 to 16 (22.86 to 40.64)	2 (5.08)	390
Over 16 to 19 (40.64 to 48.26)	3 (7.62)	500
Over 19 to 24 (48.26 to 60.96)	4 (10.16)	610
Over 24 to 30 (60.96 to 76.2)	5 (12.7)	880
Over 30 to 36 (76.2 to 91.44)	6 (15.24)	1,200

For any wheel wider than wheel diameters shown in Table 3, increase the exhaust volume by the ratio of the new width to the width shown.

Example: If wheel width = 4 1/2 inches (11.43 cm), then (4.5/4) x 610 = 686 (rounded to 690).

Scratch-brush wheels and all buffing and polishing wheels mounted on floor stands, pedestals, benches, or special-purpose machines shall have not less than the minimum exhaust volume shown in Table 4.

Table 4 – Buffing and Polishing Wheels

Wheel diameter, inches (cm)	Wheel width, inches (cm)	Minimum exhaust volume (feet (3)/min.)
To 9 (22.86)	2 (5.08)	300
Over 9 to 16 (22.86 to 40.64)	3 (7.62)	500
Over 16 to 19 (40.64 to 48.26)	4 (10.16)	610
Over 19 to 24 (48.26 to 60.96)	5 (12.7)	740
Over 24 to 30 (60.96 to 76.2)	6 (15.24)	1,040

Over 30 to 36 (76.2 to 91.44)	6 (15.24)	1,200

Grinding wheels or discs for horizontal single-spindle disc grinders shall be hooded to collect the dust or dirt generated by the grinding operation and the hoods shall be connected to branch pipes having exhaust volumes as shown in Table 5.

Table 5 – Horizontal Single-Spindle Disc Grinder

Disc diameter, inches (cm)	Exhaust volume (feet (3)/min.)
Up to 12 (30.48)	220
Over 12 to 19 (30.48 to 48.26)	390
Over 19 to 30 (48.26 to 76.2)	610
Over 30 to 36 (76.2 to 91.44)	880

Grinding wheels or discs for horizontal double-spindle disc grinders shall have a hood enclosing the grinding chamber and the hood shall be connected to one or more branch pipes having exhaust volumes as shown in Table 6.

Table 6 – Horizontal Double-Spindle Disc Grinder

Disc diameter, inches (cm)	Exhaust volume (feet (3)/min.)
Up to 19 (48.26)	610
Over 19 to 25 (48.26 to 63.5)	880
Over 25 to 30 (63.5 to 76.2)	1,200
Over 30 to 53 (76.2 to 134.62)	1,770
Over 53 to 72 (134.62 to 182.88)	6,280

Grinding wheels or discs for vertical single-spindle disc grinders shall be encircled with hoods to remove the dust generated in the operation. The hoods shall be connected to one or more branch pipes having exhaust volumes as shown in Table 7.

Table 7 – Vertical Spindle Disc Grinder

Disc diameter, inches (cm)	One-half or more of disc covered		Disc not covered	
	Number (1)	Exhaust foot (3)/min.	Number (1)	Exhaust foot (3)/min.
Up to 20 (50.8)	1	500	2	780
Over 20 to 30 (50.8 to 76.2)	2	780	2	1,480
Over 30 to 53 (76.2 to 134.62)	2	1,770	4	3,530
Over 53 to 72 (134.62 to 182.88)	2	3,140	5	6,010

Footnote(1) Number of exhaust outlets around periphery of hood, or equal distribution provided by other means.

Grinding and polishing belts shall be provided with hoods to remove dust and dirt generated in the operations and the hoods shall be connected to branch pipes having exhaust volumes as shown in Table 8.

Table 8 – Grinding and Polishing Belts

Belts width, inches (cm)	Exhaust volume (feet (3)/min.)
Up to 3 (7.62)	220
Over 3 to 5 (7.62 to 12.7)	300
Over 5 to 7 (12.7 to 17.78)	390
Over 7 to 9 (17.78 to 22.86)	500
Over 9 to 11 (22.86 to 27.94)	610
Over 11 to 13 (27.94 to 33.02)	740

Cradles and Swing-Frame Grinders

Where cradles are used for handling the parts to be ground, polished, or buffed, requiring large partial enclosures to house the complete operation, a minimum average air velocity of 150 feet per minute shall be maintained over the entire opening of the enclosure. Swing-frame grinders shall also be exhausted in the same manner as provided for cradles. (See Figure 8)

Where the work is outside the hood, air volumes must be increased as shown in American Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960 (section 4, exhaust hoods).

Exhaust Systems

Exhaust systems for grinding, polishing, and buffing operations shall be designed in accordance with American Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

Exhaust systems for grinding, polishing, and buffing operations shall be tested in the manner described in American Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

All exhaust systems shall be provided with suitable dust collectors.

Hood and Enclosure Design

It is the dual function of grinding and abrasive cutting-off wheel hoods to protect the operator from the hazards of bursting wheels as well as to provide a means for the removal of dust and dirt generated. All hoods shall be not less in structural strength than specified in the American National Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1-1970.

Due to the variety of work and types of grinding machines employed, it is necessary to develop hoods adaptable to the particular machine in question, and such hoods shall be located as close as possible to the operation.

Exhaust hoods for floor stands, pedestals, and bench grinders shall be designed in accordance with Figure 7. The adjustable tongue shown in the figure shall be kept in working order and shall be adjusted within one-fourth inch (0.635 cm) of the wheel periphery at all times.

Swing-frame grinders shall be provided with exhaust booths as indicated in Figure 8.

Portable grinding operations, whenever the nature of the work permits, shall be conducted within a partial enclosure. The opening in the enclosure shall be no larger than is actually required in the operation and an average face air velocity of not less than 200 feet per minute shall be maintained.

Hoods for polishing and buffing, and scratch-brush wheels shall be constructed to conform as closely to Figure 9 as the nature of the work will permit.

Cradle grinding and polishing operations shall be performed within a partial enclosure similar to Figure 10. The operator shall be positioned outside the working face of the opening of the enclosure. The face opening of the enclosure shall not be any greater in area than that actually required for the performance of the operation and the average air velocity into the working face of the enclosure shall not be less than 150 feet per minute.

Hoods for horizontal single-spindle disc grinders shall be constructed to conform as closely as possible to the hood shown in Figure 11. It is essential that there be a space between the back of the wheel and the hood, and a space around the periphery of the wheel of at least 1 inch (2.54 cm) in order to permit the suction to act around the wheel periphery. The opening on the side of the disc shall be no larger than is required for the grinding operation, but must never be less than twice the area of the branch outlet.

Horizontal double-spindle disc grinders shall have a hood encircling the wheels and grinding chamber similar to the illustrated in Figure 1. The openings for passing the work into the grinding chamber shall be kept as small as possible, but must never be less than twice the area of the branch outlets.

Vertical-spindle disc grinders shall be encircled with a hood so constructed that the heavy dust is drawn off a surface of the disc and the lighter dust exhausted through a continuous slot at the top of the hood as shown in Figure 6.

Grinding and polishing belt hoods shall be constructed as close to the operation as possible. The hood should extend almost to the belt, and 1-inch (2.54 cm) wide openings shall be provided on either side.

Figure 13 shows a typical hood for a belt operation.

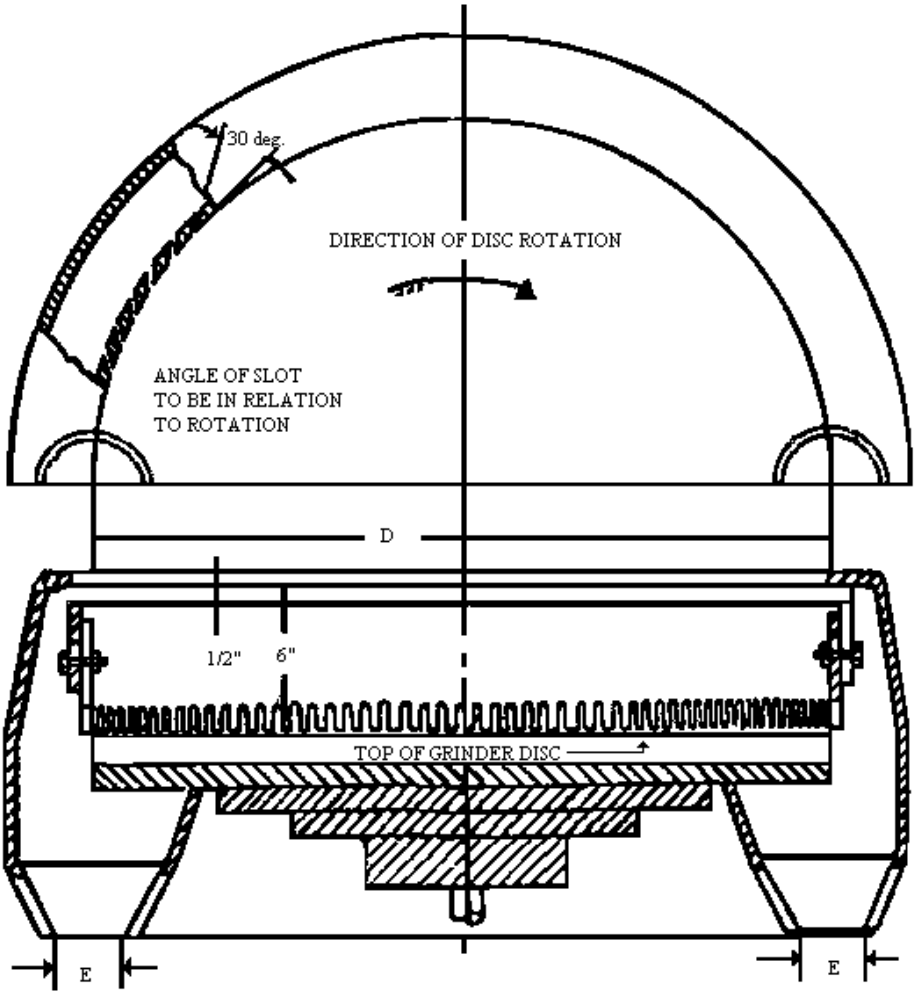


Figure 6 – Vertical Spindle Disc Grinder Exhaust Hood and Branch Pipe Connections

Dia. D inches (cm)		Exhaust E		Volume Exhausted at 4,500 ft./min. ft.(3)/min.	Note
Min.	Max.	No pipes	Dia.		
Over 20 (50.8) Over 30 (76.2) Over 53 (134.62)	20 (50.8) 30 (76.2) 72 (182.88) 72 (182.88)	1 2 2 2	4-1/4 (10.795) 4 (10.16) 6 (15.24) 8 (20.32)	500 780 1,770 3,140	When one-half or more of the disc can be hooded, use exhaust ducts as shown at the left.
Over 20 (50.8) Over 30 (76.2) Over 53 (134.62)	20 (50.8) 30 (76.2) 53 (134.62) 72 (182.88)	2 2 4 5	4 (10.16) 5-1/2 (13.97) 6 (15.24) 7 (17.78)	780 1,480 3,530 6,010	When no hood can be used over disc, use exhaust ducts as shown at left.

Entry loss = 1.0 slot velocity pressure + 0.5 branch velocity pressure.
Minimum slot velocity = 2,000 ft./min. – 1/2-inch (1.27 cm) slot width.

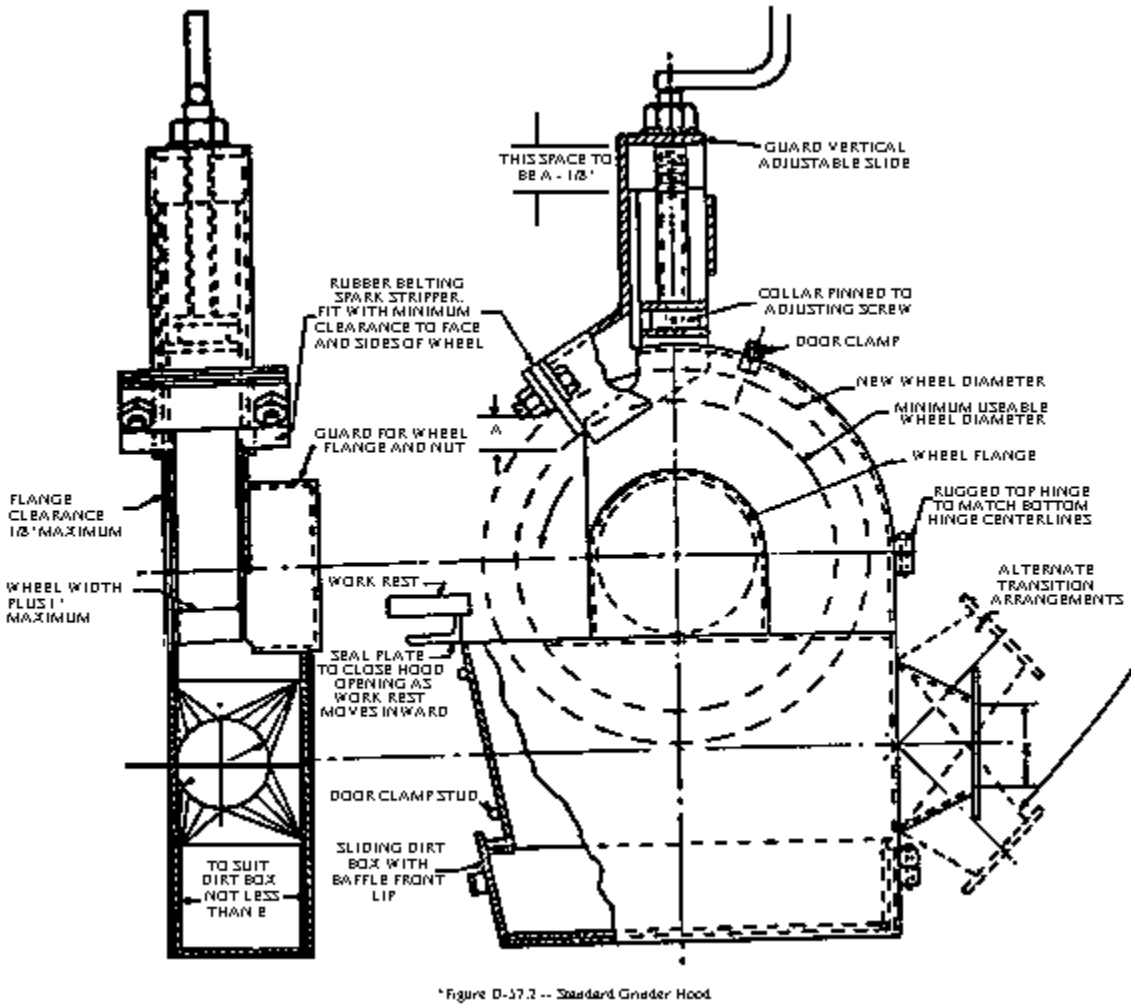


Figure D-37.2 -- Standard Grinder Hood

Figure 7 – Standard Grinder Hood

Wheel dimension, inches (cm)			Exhaust outlet, inches (cm) E	Volume of air at 4,500 ft./min.
Diameter		Width, max		
Min. = d	Max = D			
	9 (22.86)	1-1/2 (3.81)	3	220
Over 9 (22.86)	16 (40.64)	2 (5.08)	4	390
Over 16 (40.64)	19 (48.26)	3 (7.62)	4-1/2	500
Over 19 (48.26)	24 (60.96)	4 (10.16)	5	610
Over 24 (60.96)	30 (76.2)	5 (12.7)	6	880
Over 30 (76.2)	36 (91.44)	6 (15.24)	7	1,200

Entry loss = 0.45 velocity pressure for tapered takeoff 0.65 velocity pressure for straight takeoff.

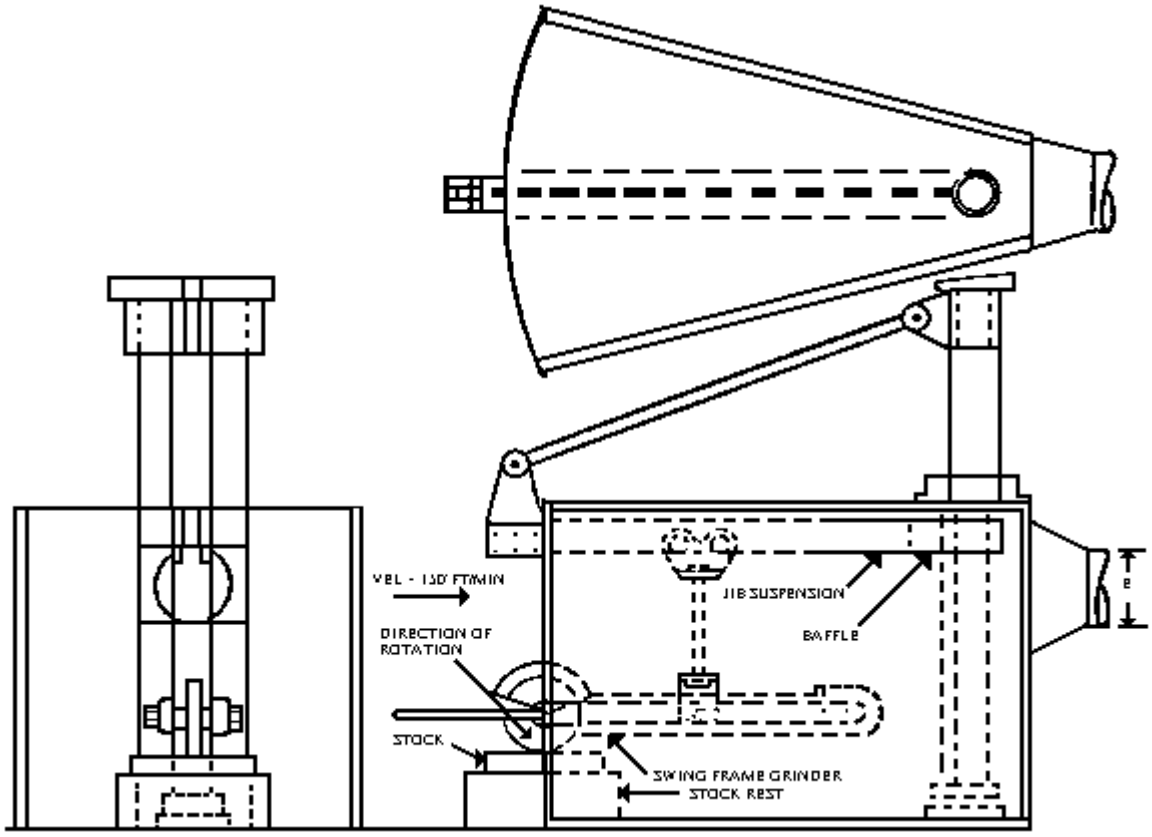


Figure 8 – A Method of Applying an Exhaust Enclosure to Swing-Frame Grinder

Note: Baffle to reduce front opening as much as possible.

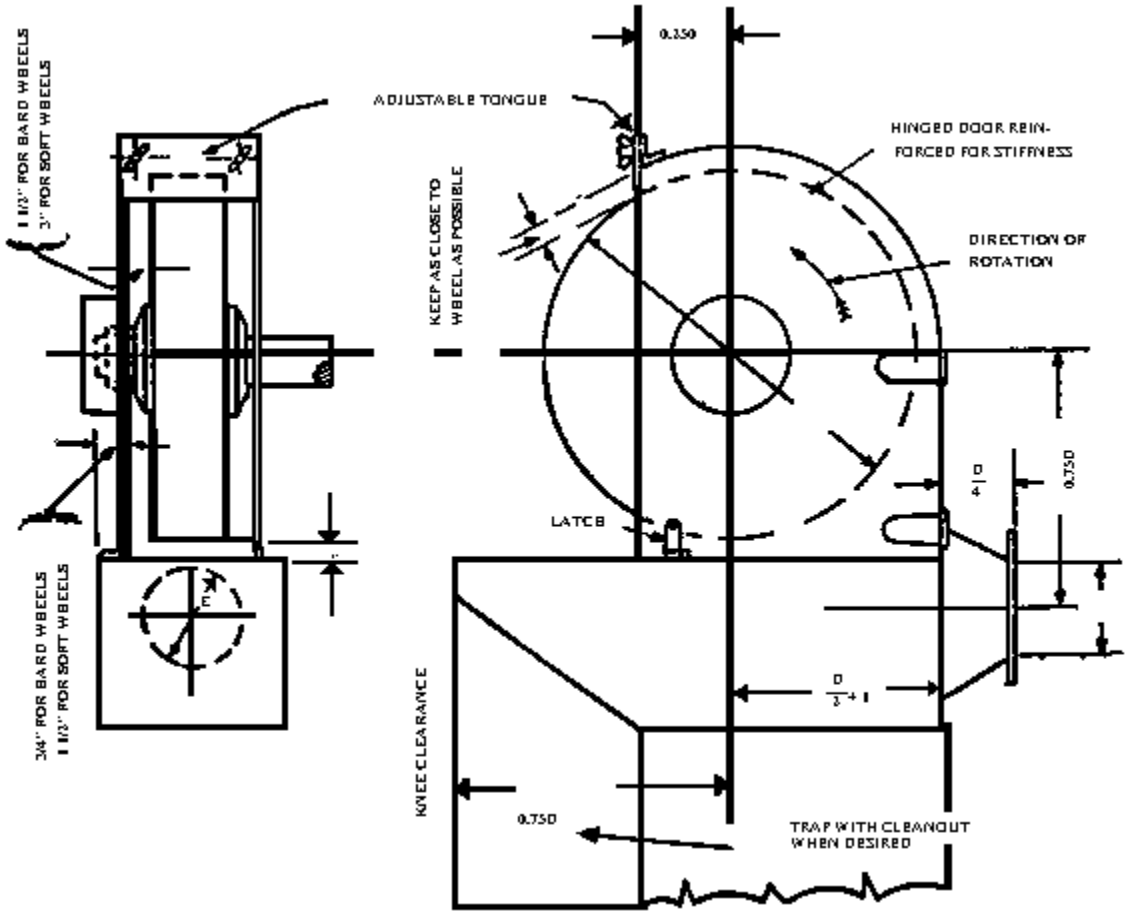


Figure 9 – Standard Buffing and Polishing Hood

Wheel dimension, inches (cm)			Exhaust outlet, inches (cm) E	Volume of air at 4,500 ft./min.
Diameter		Width, max		
Min. = d	Max = D			
	9 (22.86)	2 (5.08)	3-1/2 (3.81)	300
Over 9 (22.86)	16 (40.64)	3 (7.62)	4 (10.16)	500
Over 16 (40.64)	19 (48.26)	4 (10.16)	5 (12.7)	610
Over 19 (48.26)	24 (60.96)	5 (12.7)	5-1/2 (13.97)	740
Over 24 (60.96)	30 (76.2)	6 (15.24)	6-1/2 (16.51)	1,040
Over 30 (76.2)	36 (91.44)	6 (15.24)	7 (17.78)	1,200

Entry loss = 0.15 velocity pressure for tapered takeoff; 0.65 velocity pressure for straight takeoff.

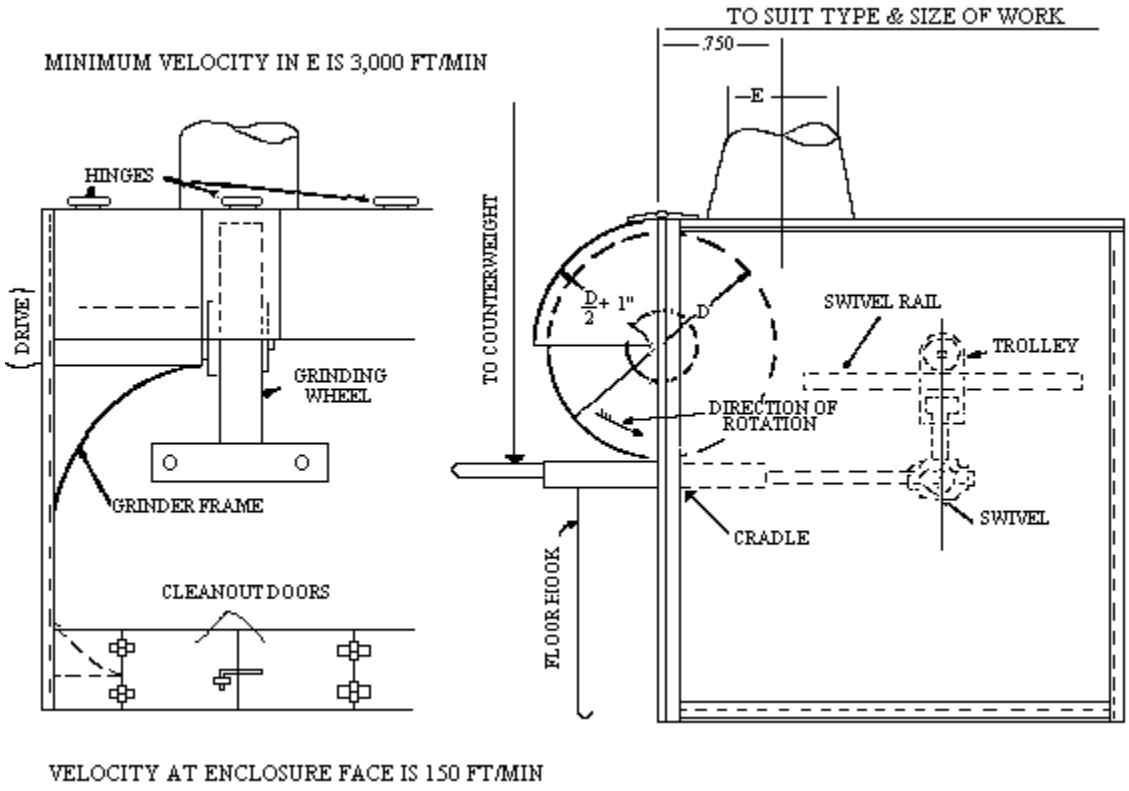


Figure 10 – Cradle Polishing or Grinding Enclosure

Entry loss = 0.45 velocity pressure for tapered takeoff.

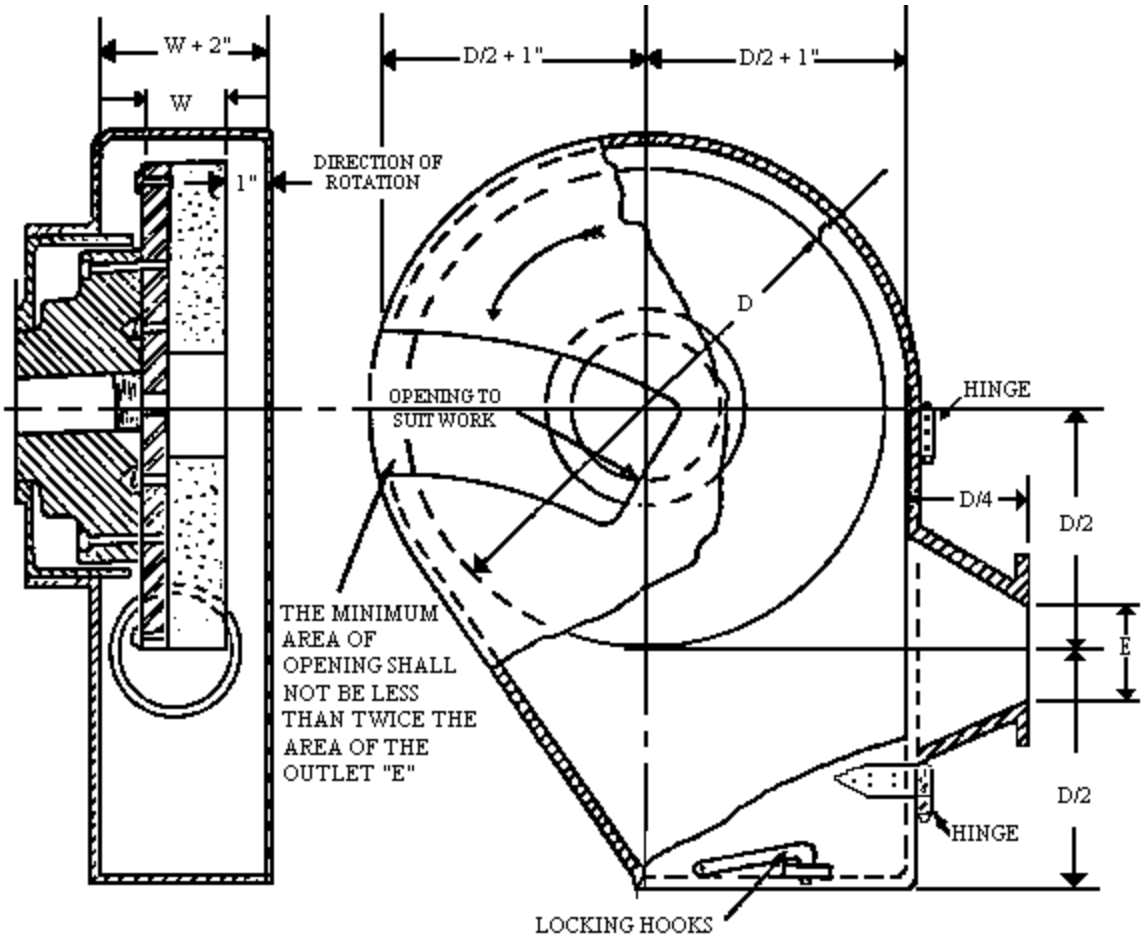


Figure 11 – Horizontal Single-Spindle Disc Grinder

Exhaust Hood and Branch Pipe Connections

Dia. D inches (cm)		Exhaust E dia. inches (cm)	Volume exhausted at 4,500 ft./min/ ft.(3)/min.
Min.	Max.		
	12 (30.48)	3 (7.6)	220
Over 12 (30.48)	19 (48.26)	4 (10.16)	390
Over 19 (48.26)	30 (76.2)	5 (12.7)	610
Over 30 (76.2)	36 (91.44)	6 (15.24)	880

Note: If grinding wheels are used for disc grinding purposes, hoods must conform to structural strength and materials as described in 9.1.

Entry loss = 0.45 velocity pressure for tapered takeoff.

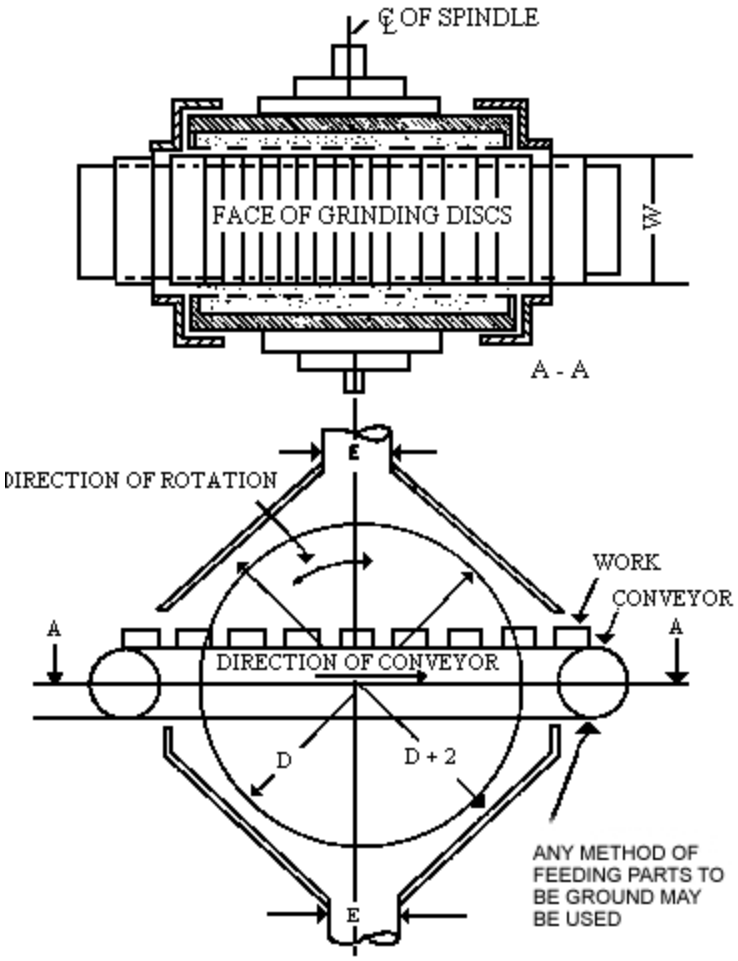


Figure 12 – Horizontal Double-Spindle Disc Grinder

Exhaust Hood and Branch Pipe Connections

Disc. dia. Inches (cm)		Exhaust E		Volume exhausted at 4,500 ft./min. ft(3)/min.	Note
Min.	Max.	No pipes	Dia.		
	19 (48.26)	1	5	610	When width "W" permits, exhaust ducts should be as near heaviest grinding as possible.
Over 19 (48.26)	25 (63.5)	1	6	880	
Over 25 (63.5)	30 (76.2)	1	7	1,200	
Over 30 (76.2)	53 (134.62)	2	6	1,770	
Over 53 (134.62)	72 (182.88)	4	8	6,280	

Entry loss = 0.45 velocity pressure for tapered takeoff.

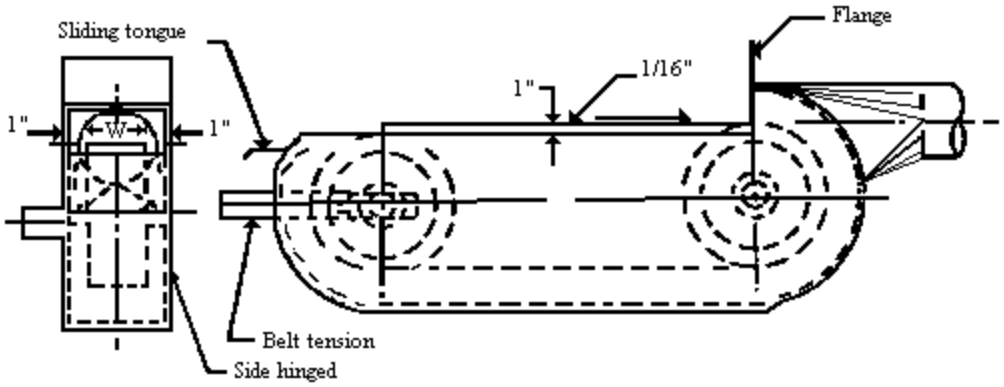


Figure 13 – A Typical Hood for a Belt Operation

Entry loss = 0.45 velocity pressure for tapered takeoff.

Belt width W. inches (cm)	Exhaust volume ft. (1)/min.
Up to 3 (7.62)	220
3 to 5 (7.62 to 12.7)	300
5 to 7 (12.7 to 17.78)	390
7 to 9 (17.78 to 22.86)	500
9 to 11 (22.86 to 27.94)	610
11 to 13 (27.94 to 33.02)	740

Minimum duct velocity = 4,500 ft/min branch, 3,500 ft/min main.

Entry loss = 0.45 velocity pressure for tapered takeoff; 0.65 velocity pressure for straight takeoff.

Spray Finishing Operations

Spray booths or spray rooms are to be used to enclose or confine all spray finishing operations. This does not apply to the spraying of the exteriors of buildings, fixed tanks, or similar structures, nor to small portable spraying apparatus not used repeatedly in the same location.

Definitions

- **Spray-finishing operations** – Spray-finishing operations are employment of methods wherein organic or inorganic materials are utilized in dispersed form for deposit on surfaces to be coated, treated, or cleaned. Such methods of deposit may involve either automatic, manual, or electrostatic deposition but do not include metal spraying or metallizing, dipping, flow coating, roller coating, tumbling, centrifuging, or spray washing and degreasing as conducted in self-contained washing and degreasing machines or systems.
- **Spray booth** – Spray booths are defined and described in 1926.66(a). (See sections 103, 104, and 105 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969).

- **Spray room** – A spray room is a room in which spray-finishing operations not conducted in a spray booth are performed separately from other areas.
- **Minimum maintained velocity** – Minimum maintained velocity is the velocity of air movement which must be maintained in order to meet minimum specified requirements for health and safety.
- **Location and application** – Spray booths or spray rooms are to be used to enclose or confine all operations. Spray-finishing operations shall be located as provided in sections 201 through 206 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.

Design and Construction of Spray Booths

Spray booths shall be designed and constructed in accordance with 29 CFR 1926.66(b)(1) through (4) and (6) through (10)(see sections 301-304 and 306-310 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969), for general construction specifications. For a more detailed discussion of fundamentals relating to this subject, see ANSI Z9.2-1960.

Lights, motors, electrical equipment, and other sources of ignition shall conform to the requirements of 29 CFR 1926.66(b)(10) and (c). (See section 310 and chapter 4 of the Standard for Spray Finishing Using Flammable and Combustible Materials NFPA No. 33-1969.)
In no case shall combustible material be used in the construction of a spray booth and supply or exhaust duct connected to it.

Unobstructed walkways shall not be less than 6 1/2 feet (1.976 m) high and shall be maintained clear of obstruction from any work location in the booth to a booth exit or open booth front. In booths where the open front is the only exit, such exits shall be not less than 3 feet (0.912 m) wide. In booths having multiple exits, such exits shall not be less than 2 feet (0.608 m) wide, provided that the maximum distance from the work location to the exit is 25 feet (7.6 m) or less. Where booth exits are provided with doors, such doors shall open outward from the booth.

Baffles, distribution plates, and dry-type overspray collectors shall conform to the requirements of 29 CFR 1926.66(b)(4) and (5). (See sections 304 and 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969.)

Overspray filters shall be installed and maintained in accordance with the requirements of 29 CFR 1926.66(b)(5), (see section 305 of the Standard for Spray Finishing Using Flammable and Combustible Materials, NFPA No. 33-1969), and shall only be in a location easily accessible for inspection, cleaning, or replacement.

Where effective means, independent of the overspray filters, are installed which will result in design air distribution across the booth cross section, it is permissible to operate the booth without the filters in place.

For wet or water-wash spray booths, the water-chamber enclosure, within which intimate contact of contaminated air and cleaning water or other cleaning medium is maintained, if made of steel, shall be 18 gage or heavier and adequately protected against corrosion.

Chambers may include scrubber spray nozzles, headers, troughs, or other devices. Chambers shall be provided with adequate means for creating and maintaining scrubbing action for removal of particulate matter from the exhaust air stream.

Collecting tanks shall be of welded steel construction or other suitable non-combustible material. If pits are used as collecting tanks, they shall be concrete, masonry, or other material having similar properties.

Tanks shall be provided with weirs, skimmer plates, or screens to prevent sludge and floating paint from entering the pump suction box. Means for automatically maintaining the proper water level shall also be provided. Fresh water inlets shall not be submerged. They shall terminate at least one pipe diameter above the safety overflow level of the tank.

Tanks shall be so constructed as to discourage accumulation of hazardous deposits.
Pump manifolds, raisers, and headers shall be adequately sized to insure sufficient water flow to provide efficient operation of the water chamber.

Design and Construction of Spray Rooms

Spray rooms, including floors, shall be constructed of masonry, concrete, or other noncombustible material.

Spray rooms shall have noncombustible fire doors and shutters.

Spray rooms shall be adequately ventilated so that the atmosphere in the breathing zone of the operator shall be maintained in accordance with the requirements of paragraph 29 CFR 1926.57(h)(6)(ii) and as described in this section of the safety and health manual.

Spray rooms used for production spray-finishing operations shall conform to the requirements for spray booths.

Ventilation for Spray Rooms

Ventilation shall be provided in accordance with provisions of 29 CFR 1926.66(d)(see chapter 5 of the Standard for Spray Finishing Using Flammable or Combustible Materials, NFPA No. 33-1969); and in accordance with the following:

1. Where a fan plenum is used to equalize or control the distribution of exhaust air movement through the booth, it shall be of sufficient strength or rigidity to withstand the differential air pressure or other superficially imposed loads for which the equipment is designed and also to facilitate cleaning. Construction specifications shall be at least equivalent to those specified this section.

Inlet or supply ductwork used to transport makeup air to spray booths or surrounding areas shall be constructed of noncombustible materials.

a. If negative pressure exists within inlet ductwork, all seams and joints shall be sealed if there is a possibility of infiltration of harmful quantities of noxious gases, fumes, or mists from areas through which ductwork passes.
b. Inlet ductwork shall be sized in accordance with volume flow requirements and provide design air requirements at the spray booth.
c. Inlet ductwork shall be adequately supported throughout its length to sustain at least its own weight plus any negative pressure which is exerted upon it under normal operating conditions.
d. Exhaust ductwork shall be adequately supported throughout its length to sustain its weight plus any normal accumulation in interior during normal operating conditions and any negative pressure exerted upon it.

Exhaust ductwork shall be sized in accordance with good design practice which shall include consideration of fan capacity, length of duct, number of turns and elbows, variation in size, volume, and character of materials being exhausted. See American National Standard Z9.2-1960 for further details and explanation concerning elements of design.

Longitudinal joints in sheet steel ductwork shall be either lock-seamed, riveted, or welded. For other than steel construction, equivalent securing of joints shall be provided.

Circumferential joints in ductwork shall be substantially fastened together and lapped in the direction of airflow. At least every fourth joint shall be provided with connecting flanges, bolted together, or of equivalent fastening security.

Inspection or clean-out doors shall be provided for every 9 to 12 feet (2.736 to 3.648 m) of running length for ducts up to 12 inches (0.304 m) in diameter, but the distance between clean-out doors may be greater for larger pipes. (See 8.3.21 of American National Standard Z9.1-1951.) A clean-out door or doors shall be provided for servicing the fan and where necessary, a drain shall be provided.

Where ductwork passes through a combustible roof or wall, the roof or wall shall be protected at the point of penetration by open space or fire-resistive material between the duct and the roof or wall. When ducts pass through firewalls, they shall be provided with automatic fire dampers on both sides of the wall, except that three-eighth-inch steel plates may be used in lieu of automatic fire dampers for ducts not exceeding 18 inches (45.72 cm) in diameter.

Ductwork used for ventilating any process covered in this standard shall not be connected to ducts ventilating any other process or any chimney or flue used for conveying any products of combustion.

Velocity and Air Flow Requirements

Except where a spray booth has an adequate air replacement system, the velocity of air into all openings of a spray booth shall be not less than that specified in Table 9 for the operating conditions specified. An adequate air replacement system is one which introduces replacement air upstream or above the object being sprayed and is so designed that the velocity of air in the booth cross section is not less than that specified in Table 9 when measured upstream or above the object being sprayed.

Table 9 – Minimum Maintained Velocities into Spray Booths

Operating conditions for objects completely inside booth	Crossdraft, f.p.m.	Airflow velocities, f.p.m.	
		Design	Range
Electrostatic and automatic airless operation contained in booth without operator. Air-operated guns, manual or automatic.	Negligible. Up to 50	50 large booth 100 small booth 100 large booth	50-75 75-125 75-125
Air-operated guns, manual or automatic	 Up to 100	150 small booth 150 large booth	125-175 125-175
		200 small booth	150-250

Footnote(1) Attention is invited to the fact that the effectiveness of the spray booth is dependent upon the relationship of the depth of the booth to its height and width.
Footnote(2) Crossdrafts can be eliminated through proper design and such design should be sought. Crossdrafts in excess of 100fpm (feet per minute) should not be permitted.
Footnote(3) Excessive air pressures result in loss of both efficiency and material waste in addition to creating a backlash that may carry overspray and fumes into adjacent work areas.
Footnote(4) Booths should be designed with velocities shown in the column headed "Design." However, booths operating with velocities shown in the column headed "Range" are in compliance with this standard.

The total air volume exhausted through a spray booth shall be such as to dilute solvent vapor to at least 25 percent of the lower explosive limit of the solvent being sprayed. An example of the method of calculating this volume is given below.

Example: To determine the lower explosive limits of the most common solvents used in spray finishing, see Table 10. Column 1 gives the number of cubic feet of vapor per gallon of solvent and column 2 gives the lower explosive limit (LEL) in percentage by volume of air. Note that the quantity of solvent will be diminished by the quantity of solids and nonflammables contained in the finish.

To determine the volume of air in cubic feet necessary to dilute the vapor from 1 gallon of solvent to 25 percent of the lower explosive limit, apply the following formula:
Dilution volume required per gallon of solvent = 4 (100-LEL) (cubic feet of vapor per gallon) + LEL

Using toluene as the solvent:

1. LEL of toluene from Table 10, column 2, is 1.4 percent.
2. Cubic feet of vapor per gallon from Table 10, column 1, is 30.4 cubic feet per gallon.
3. Dilution volume required = 4 (100 - 1.4) 30.4 + 1.4 = 8,564 cubic feet.
4. To convert to cubic feet per minute of required ventilation, multiply the dilution volume required per gallon of solvent by the number of gallons of solvent evaporated per minute.

Table 10 – Lower Explosive Limit of Some Commonly Used Solvents

Solvent	Cubic feet per gallon of vapor of liquid at 70 °F (21.11 °C)	Lower explosive limit in percent by volume of air at 70 °F (21.11 °C)
Acetone	44.0	2.6
Amyl Acetate (iso)	21.6	1.0 (1)
Amyl Alcohol (n)	29.6	1.2
Amyl Alcohol (iso)	29.6	1.2
Benzene	36.8	1.4 (1)
Butyl Acetate (n)	24.8	1.7
Butyl Alcohol (n)	35.2	1.4
Butyl Cellosolve	24.8	1.1
Cellosolve	33.6	1.8
Cellosolve Acetate	23.2	1.7
Cyclohexnone	31.2	1.1 (1)
1,1 Dichloroethylene	42.4	5.9
1,2 Dichloroethylene	42.4	9.7
Ethyl Acetate	32.8	2.5
Ethyl Alcohol	55.2	4.3
Ethyl Lactate	28.0	1.5 (1)
Methyl Acetate	40.0	3.1
Methyl Alcohol	80.8	7.3
Methyl Cellosolve	40.8	2.5
Methyl Ethyl Ketone	36.0	1.8
Methyl n-Propyl Ketone	30.4	1.5
Naphtha (VM&P) (76 deg. Naphtha)	22.4	0.9
Naphtha (100 deg. Flash) Safety Solvent - Stoddard Solvent	23.2	1.0
Propyl Acetate (n)	27.2	2.8
Propyl Acetate (iso)	28.0	1.1
Propyl Alcohol (n)	44.8	2.1
Propyl Alcohol (iso)	44.0	2.0
Toluene	30.4	1.4
Turpentine	20.8	0.8
Xylene (o)	26.4	1.0

Footnote(1) At 212 °F (100 °C).

When an operator is in a booth downstream of the object being sprayed, an air-supplied respirator or other type of respirator approved by NIOSH under 42 CFR Part 84 for the material being sprayed shall be used by the operator.

Where downdraft booths are provided with doors, such doors shall be closed when spray painting.

Make-Up Air

Clean fresh air, free of contamination from adjacent industrial exhaust systems, chimneys, stacks, or vents, shall be supplied to a spray booth or room in quantities equal to the volume of air exhausted through the spray booth.

Where a spray booth or room receives make-up air through self-closing doors, dampers, or louvers, they shall be fully open at all times when the booth or room is in use for spraying. The velocity of air through such doors, dampers, or louvers shall not exceed 200 feet per minute. If the fan characteristics are such that the required air flow through the booth will be provided, higher velocities through the doors, dampers, or louvers may be used.

Where the air supply to a spray booth or room is filtered, the fan static pressure shall be calculated on the assumption that the filters are dirty to the extent that they require cleaning or replacement.

The rating of filters shall be governed by the test data supplied by the manufacturer of the filter. A pressure gage shall be installed to show the pressure drop across the filters. This gage shall be marked to show the pressure drop at which the filters require cleaning or replacement. Filters shall be placed or cleaned whenever the pressure drop across them becomes excessive or whenever the air flow through the face of the booth falls below that specified in Table 9.

Means for heating make-up air to any spray booth or room, before or at the time spraying is normally performed, shall be provided in all places where the outdoor temperature may be expected to remain below 55 °F (12.77 °C.) for appreciable periods of time during the operation of the booth except where adequate and safe means of radiant heating for all operating personnel affected is provided. The replacement air during the heating seasons shall be maintained at not less than 65 °F (18.33 °C.) at the point of entry into the spray booth or spray room. When otherwise unheated make-up air would be at a temperature of more than 10 °F below room temperature, its temperature shall be regulated as provided in section 3.6.3 of ANSI Z9.2-1960.

As an alternative to an air replacement system complying with the preceding section, general heating of the building in which the spray room or booth is located may be employed provided that all occupied parts of the building are maintained at not less than 65 °F (18.33 °C.) when the exhaust system is in operation or the general heating system supplemented by other sources of heat may be employed to meet this requirement.

No means of heating make-up air shall be located in a spray booth.

Where make-up air is heated by coal or oil, the products of combustion shall not be allowed to mix with the make-up air, and the products of combustion shall be conducted outside the building through a flue terminating at a point remote from all points where make-up air enters the building.

Where make-up air to any manually operated spray booth or room is heated by gas and the products of combustion are allowed to mix with the supply air, the following precautions must be taken:

1. The gas must have a distinctive and strong enough odor to warn workmen in a spray booth or room of its presence if in an unburned state in the make-up air.
2. The maximum rate of gas supply to the make-up air heater burners must not exceed that which would yield in excess of 200 p.p.m. (parts per million) of carbon monoxide or 2,000 p.p.m. of total combustible gases in the mixture if the unburned gas upon the occurrence of flame failure were mixed with all of the make-up air supplied.
3. A fan must be provided to deliver the mixture of heated air and products of combustion from the plenum chamber housing the gas burners to the spray booth or room.

Open Surface Tanks

This paragraph applies to all operations involving the immersion of materials in liquids, or in the vapors of such liquids, for the purpose of cleaning or altering the surface or adding to or imparting a finish thereto or changing the character of the materials, and their subsequent removal from the liquid or vapor, draining, and drying. These operating include washing, electroplating, anodizing, pickling, quenching, dying, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operation.

Except where specific construction specifications are prescribed in this section, hoods, ducts, elbows, fans, blowers, and all other exhaust system parts, components, and supports thereof shall be so constructed as to meet conditions of service and to facilitate maintenance and shall conform in construction to the specifications contained in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

Classification of Open-Surface Tank Operations

Open-surface tank operations shall be classified into 16 classes, numbered A-1 to D-4, inclusive.

Determination of Class

Class is determined by two factors, hazard potential designated by a letter from A to D, inclusive, and rate of gas, vapor, or mist evolution designated by a number from 1 to 4, inclusive (for example, B.3).

Hazard potential is an index, on a scale of from A to D, inclusive, of the severity of the hazard associated with the substance contained in the tank because of the toxic, flammable, or explosive

nature of the vapor, gas, or mist produced there from. The toxic hazard is determined from the concentration, measured in parts by volume of a gas or vapor, per million parts by volume of contaminated air (p.p.m.), or in milligrams of mist per cubic meter of air (mg./m(3)), below which ill effects are unlikely to occur to the exposed worker. The concentrations shall be those described in 29 CFR 1926.55 or any applicable concentrations within this section.

The relative fire or explosion hazard is measured in degrees Fahrenheit in terms of the closed-cup flash point of the substance in the tank. Detailed information on the prevention of fire hazards in dip tanks may be found in Dip Tanks Containing Flammable or Combustible Liquids, NFPA No. 34-1966, National Fire Protection Association. Where the tank contains a mixture of liquids, other than organic solvents, whose effects are additive, the hygienic standard of the most toxic component (for example, the one having the lowest p.p.m. or mg/m(3)) shall be used, except where such substance constitutes an insignificantly small faction of the mixture. For mixtures of organic solvents, their combined effect, rather than that of either individually, shall determine the hazard potential. In the absence of information to the contrary, the effects shall be considered as additive. If the sum of the ratios of the airborne concentration of each contaminant to the toxic concentration of that contaminant exceeds unity, the toxic concentration shall be considered to have been exceeded.

Hazard potential shall be determined from Table 11, with the value indicating greater hazard being used. When the hazardous material may be either a vapor with a threshold limit value (TLV) in p.p.m. or a mist with a TLV in mg/m(3), the TLV indicating the greater hazard shall be used (for example, A takes precedence over B or C; B over C; C over D).

Note: (c(1)+TLV(1))+(c(2)+TLV(2))+(c(3)+TLV(3))+;... (c(N)+TLV(N))1
where: c = Concentration measured at the operation in p.p.m.

Table 11 – Determination of Hazard Potential

Hazard potential	Toxicity group		
	Gas or vapor (p.p.m.)	Mist (mg./m(3))	Flash point in °F (°C)
A	0-10	0-0.1	
B	11-100	0.11-1.0	Under 100 (37.77)
C	101-500	1.1-10	100-200 (37.77-93.33)
D	Over 500	Over 10	Over 200 (93.33)

Rate of gas, vapor, or mist evolution is a numerical index, on a scale of from 1 to 4, inclusive, both of the relative capacity of the tank to produce gas, vapor, or mist and of the relative energy with which it is projected or carried upwards from the tank. Rate is evaluated in terms of:

A. The temperature of the liquid in the tank in degrees Fahrenheit;
B. The number of degrees Fahrenheit that this temperature is below the boiling point of the liquid in degrees Fahrenheit;
C. The relative evaporation of the liquid in still air at room temperature in an arbitrary scale -- fast, medium, slow, or nil; and

D. The extent that the tank gases or produces mist in an arbitrary scale -- high, medium, low, and nil. (See Table 12, Note 2.) Gassing depends upon electrochemical or mechanical processes, the effects of which have to be individually evaluated for each installation (see Table 12, Note 3).

Rate of evolution shall be determined from Table 12. When evaporation and gassing yield different rates, the lowest numerical value shall be used.

Table 12 – Determination of Rate of Gas, Vapor, or Mist Evolution (1)

Rate	Liquid temperature, °F (°C)	Degrees below boiling point	Relative evaporation (2)	Gassing (3)
1	Over 200 (93.33)	0-20	Fast	High
2	150-200 (65.55-93.33)	21-50	Medium	Medium
3	94-149 (34.44-65)	51-100	Slow	Low
4	Under 94 (34.44)	Over 100	Nil	Nil

Footnote(1) In certain classes of equipment, specifically vapor degreasers, an internal condenser or vapor level thermostat is used to prevent the vapor from leaving the tank during normal operation. In such cases, rate of vapor evolution from the tank into the workroom is not dependent upon the factors listed in the table, but rather upon abnormalities of operating procedure, such as carryout of vapors from excessively fast action, dragout of liquid by entrainment in parts, contamination of solvent by water and other materials, or improper heat balance. When operating procedure is excellent, effective rate of evolution may be taken as 4. When operating procedure is average, the effective rate of evolution may be taken as 3.
Footnote(2) Relative evaporation rate is determined according to the methods described by A. K. Doolittle in Industrial and Engineering Chemistry, vol. 27 p. 1169, (3) where time for 100-percent evaporation is as follows: Fast: 0-3 hours; Medium: 3-12 hours; Slow: 12-50 hours; Nil: more than 50 hours.
Footnote(3) Gassing means the formation by chemical or electrochemical action of minute bubbles of gas under the surface of the liquid in the tank and is generally limited to aqueous solutions.

Ventilation for Open Surface Tanks

Where ventilation is used to control potential exposures to workers, it shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation are discussed in American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960.

Control Requirements

Control velocities shall conform to Table 13 in all cases where the flow of air past the breathing or working zone of the operator and into the hoods is undisturbed by local environmental conditions, such as open windows, wall fans, unit heaters, or moving machinery.

All tanks exhausted by means of hoods which:

a. Project over the entire tank;
b. Are fixed in position in such a location that the head of the workman, in all his normal operating positions while working at the tank, is in front of all hood openings; and
c. Are completely enclosed on at least two sides shall be considered to be exhausted through an enclosing hood.

The quantity of air in cubic feet per minute necessary to be exhausted through an enclosing hood shall be not less than the product of the control velocity times the net area of all openings in the enclosure through which air can flow into the hood.

Table 13 – Control Velocities in Feet-per-Minute (F.P.M) for Undisturbed Locations

Class	Enclosing hood		Lateral exhaust (1)	Canopy hood (2)	
	One open side	Two open sides		Three open sides	Four open sides
B-1 and A-2	100	150	150	Do not use	Do not use
A-3 (2), B-1, B-2, and C-1	75	100	100	125	175
A-3, C-2, and D-1 (3)	65	90	75	100	150
B-4 (2), C-3, and D-2 (3)	50	75	50	75	125
A-4, C-4, D-3 (3), and D-4(4)					

Footnote(1) See Table 14 for computation of ventilation rate.
Footnote(2) Do not use canopy hood for Hazard Potential A processes.
Footnote(3) Where complete control of hot water is desired, design as next highest class.
Footnote(4) General room ventilation required.

All tanks exhausted by means of hoods which do not project over the entire tank, and in which the direction of air movement into the hood or hoods is substantially horizontal, shall be considered to be laterally exhausted. The quantity of air in cubic feet per minute necessary to be laterally exhausted per square foot of tank area in order to maintain the required control velocity shall be determined from Table 14 for all variations in ratio of tank width (W) to tank length (L). The total quantity of air in cubic feet per minute required to be exhausted per tank shall be not less than the product of the area of tank surface times the cubic feet per minute per square foot of tank area, determined from Table 14.

For lateral exhaust hoods over 42 inches (1.06 m) wide, or where it is desirable to reduce the amount of air removed from the workroom, air supply slots or orifices shall be provided along the side or the center of the tank opposite from the exhaust slots. The design of such systems shall meet the following criteria:

1. The supply air volume plus the entrained air shall not exceed 50 percent of the exhaust volume.

2. The velocity of the supply airstream as it reaches the effective control area of the exhaust slot shall be less than the effective velocity over the exhaust slot area.

Table 14 – Minimum Ventilation Rate in Cubic Feet of Air per Minute Per Square Foot of Tank Area for Lateral Exhaust

Required minimum controlled velocity f.p.m. (from Table 13)	C.f.m. per sq. ft. to maintain required minimum velocities at following ratios (tank width (W)/tank length (L)(1), (2)				
	0.0-0.09	0.1-0.24	0.25-0.49	0.5-0.99	1.0-2.0
Hood along one side or two parallel sides of tank when one hood is against a wall or baffle (2). Also for a manifold along tank centerline(3).					
50	75	90	100	110	125
75	110	130	150	170	190
100	150	175	200	225	250
150	225	260	300	340	375
Hood along one side or two parallel sides of free standing tank not against wall or baffle.					
50	75	90	100	110	125
75	110	130	150	170	190
100	150	175	200	225	250
150	225	2606	300	340	375

Footnote(1) It is not practicable to ventilate across the long dimension of a tank whose ratio W/L exceeds 2.0. It is undesirable to do so when W/L exceeds 1.0. For circular tanks with lateral exhaust along up to 1/2 the circumference, use W/L=1.0; for over one-half the circumference use W/L=0.5.
Footnote(2) Baffle is a vertical plate the same length as the tank, and with the top of the plate as high as the tank is wide. If the exhaust hood is on the side of a tank against a building wall or close to it, it is perfectly baffled.
Footnote(3) Use W/2 as tank width in computing when manifold is along centerline, or when hoods are used on two parallel sides of a tank.

Tank Width (W) means the effective width over which the hood must pull air to operate (for example, where the hood face is set back from the edge of the tank, this set back must be added in measuring tank width). The surface area of tanks can frequently be reduced and better control obtained (particularly on conveyorized systems) by using covers extending from the upper edges of the slots toward the center of the tank.

The vertical height of the receiving exhaust hood, including any baffle, shall not be less than one-quarter the width of the tank.

The supply airstream shall not be allowed to impinge on obstructions between it and the exhaust slot in such a manner as to significantly interfere with the performance of the exhaust hood. Since most failure of push-pull systems result from excessive supply air volumes and pressures, methods of measuring and adjusting the supply air shall be provided. When satisfactory control has been achieved, the adjustable features of the hood shall be fixed so that they will not be altered.

All tanks exhausted by means of hoods which project over the entire tank, and which do not conform to the definition of enclosing hoods, shall be considered to be overhead canopy hoods. The quantity of air in cubic feet per minute necessary to be exhausted through a canopy hood shall be not less than the product of the control velocity times the net area of all openings between the bottom edges of the hood and the top edges of the tank.

The rate of vapor evolution (including steam or products of combustion) from the process shall be estimated. If the rate of vapor evolution is equal to or greater than 10 percent of the calculated exhaust volume required, the exhaust volume shall be increased in equal amount.

Spray Cleaning and Degreasing

Wherever spraying or other mechanical means are used to disperse a liquid above an open-surface tank, control must be provided for the airborne spray. Such operations shall be enclosed as completely as possible. The inward air velocity into the enclosure shall be sufficient to prevent the discharge of spray into the workroom. Mechanical baffles may be used to help prevent the discharge of spray. Spray painting operations are covered by this section.

Control Means Other Than Ventilation

Tank covers, foams, beads, chips, or other materials floating on the tank surface so as to confine gases, mists, or vapors to the area under the cover or to the foam, bead, or chip layer; or surface tension depressive agents added to the liquid in the tank to minimize mist formation, or any combination thereof, may all be used as gas, mist, or vapor control means for open-surface tank operations, provided that they effectively reduce the concentrations of hazardous materials in the vicinity of the worker below the limits set in accordance with this section.

System Design

The equipment for exhausting air shall have sufficient capacity to produce the flow of air required in each of the hoods and openings of the system.

The capacity required in this section shall be obtained when the airflow producing equipment is operating against the following pressure losses, the sum of which is the static pressure:

- Entrance losses into the hood.
- Resistance to airflow in branch pipe including bends and transformations.
- Entrance loss into the main pipe.
- Resistance to airflow in main pipe including bends and transformations.
- Resistance of mechanical equipment; that is, filters, washers, condensers, absorbers, etc., plus their entrance and exit losses.
- Resistance in outlet duct and discharge stack.

Two or more operations shall not be connected to the same exhaust system where either one or the combination of the substances removed may constitute a fire, explosion, or chemical reaction

hazard in the duct system. Traps or other devices shall be provided to insure that condensate in ducts does not drain back into any tank.

The exhaust system, consisting of hoods, ducts, air mover, and discharge outlet, shall be designed in accordance with American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, or the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists 1970. Airflow and pressure loss data provided by the manufacturer of any air cleaning device shall be included in the design calculations.

Operation

The required airflow shall be maintained at all times during which gas, mist, or vapor is emitted from the tank, and at all times the tank, the draining, or the drying area is in operation or use. When the system is first installed, the airflow from each hood shall be measured by means of a pitot traverse in the exhaust duct and corrective action taken if the flow is less than that required. When the proper flow is obtained, the hood static pressure shall be measured and recorded. At intervals of not more than 3 months operation, or after a prolonged shutdown period, the hoods and duct system shall be inspected for evidence or corrosion or damage. In any case where the airflow is found to be less than required, it shall be increased to the required value. (Information on airflow and static pressure measurement and calculations may be found in American National Standard Fundamental Governing the Design and Operation of Local Exhaust Systems, Z9.2-1960, or in the manual, Industrial Ventilation, published by the American Conference of Governmental Industrial Hygienists.)

The exhaust system shall discharge to the outer air in such a manner that the possibility of its effluent entering any building is at a minimum. Recirculation shall only be through a device for contaminant removal which will prevent the creation of a health hazard in the room or area to which the air is recirculated.

A volume of outside air in the range of 90 percent to 110 percent of the exhaust volume shall be provided to each room having exhaust hoods. The outside air supply shall enter the workroom in such a manner as not to be detrimental to any exhaust hood. The airflow of the makeup air system shall be measured on installation. Corrective action shall be taken when the airflow is below that required. The makeup air shall be uncontaminated.

Personal Protection

All employees working in and around open-surface tank operations must be instructed as to the hazards of their respective jobs, and in the personal protection and first aid procedures applicable to these hazards.

All persons required to work in such a manner that their feet may become wet shall be provided with rubber or other impervious boots or shoes, rubbers, or wooden-soled shoes sufficient to keep feet dry.

All persons required to handle work wet with a liquid other than water shall be provided with gloves impervious to such a liquid and of a length sufficient to prevent entrance of liquid into the tops of the gloves. The interior of gloves shall be kept free from corrosive or irritating contaminants.

All persons required to work in such a manner that their clothing, may become wet shall be provided with such aprons, coats, jackets, sleeves, or other garments made of rubber, or of other materials impervious to liquids other than water, as are required to keep their clothing dry. Aprons shall extend well below the top of boots to prevent liquid splashing into the boots. Provision of dry, clean, cotton clothing along with rubber shoes or short boots and an apron impervious to liquids other than water shall be considered a satisfactory substitute where small parts are cleaned, plated, or acid dipped in open tanks and rapid work is required.

Whenever there is a danger of splashing, for example, when additions are made manually to the tanks, or when acids and chemicals are removed from the tanks, the employees so engaged shall be required to wear either tight-fitting chemical goggles or an effective face shield.

When, during the emergencies specified in this section, employees must be in areas where concentrations of air contaminants are greater than the limits set by this section or oxygen concentrations are less than 19.5 percent, they must use respirators that reduce their exposure to a level below these limits or that provide adequate oxygen. Such respirators must also be provided in marked, quickly-accessible storage compartments built for this purpose when the possibility exists of accidental release of hazardous concentrations of air contaminants. Respirators must be approved by NIOSH under 42 CFR part 84, selected by a competent industrial hygienist or other technically-qualified source, and used in accordance with 29 CFR 1926.103.

Near each tank containing a liquid which may burn, irritate, or otherwise be harmful to the skin if splashed upon the worker's body, there shall be a supply of clean cold water. The water pipe (carrying a pressure not exceeding 25 pounds (11.325 kg)) shall be provided with a quick opening valve and at least 48 inches (1.216 m) of hose not smaller than three-fourths inch, so that no time may be lost in washing off liquids from the skin or clothing. Alternatively, deluge showers and eye flushes shall be provided in cases where harmful chemicals may be splashed on parts of the body.

Operators with sores, burns, or other skin lesions requiring medical treatment shall not be allowed to work at their regular operations until so authorized by a physician. Any small skin abrasions, cuts, rash, or open sores which are found or reported shall be treated by a properly designated person so that chances of exposures to the chemicals are removed. Workers exposed to chromic acids shall have a periodic examination made of nostrils and other parts of the body, to detect incipient ulceration.

Sufficient washing facilities, including soap, individual towels, and hot water, shall be provided for all persons required to use or handle any liquids which may burn, irritate, or otherwise be harmful to the skin, on the basis of at least one basin (or its equivalent) with a hot water faucet for every 10 employees.

Locker space or equivalent clothing storage facilities shall be provided to prevent contamination of street clothing.

First aid facilities specific to the hazards of the operations conducted shall be readily available.

Special Precautions for Cyanide

Dikes or other arrangements shall be provided to prevent the possibility of intermixing of cyanide and acid in the event of tank rupture.

Inspection, Maintenance, and Installation

Floors and platforms around tanks shall be prevented from becoming slippery both by original type of construction and by frequent flushing. They shall be firm, sound, and of the design and construction to minimize the possibility of tripping.

Before cleaning the interior of any tank, the contents shall be drained off, and the cleanout doors shall be opened where provided. All pockets in tanks or pits, where it is possible for hazardous vapors to collect, shall be ventilated and cleared of such vapors.

Tanks that have been drained to permit employees to enter for the purposes of cleaning, inspection, or maintenance may contain atmospheres which are hazardous to life or health, through the presence of flammable or toxic air contaminants, or through the absence of sufficient oxygen. Before employees shall be permitted to enter any such tank, appropriate tests of the atmosphere shall be made to determine if the limits set by this section are exceeded, or if the oxygen concentration is less than 19.5 percent.

If the tests made in accordance with this section indicate that the atmosphere in the tank is unsafe, before any employee is permitted to enter the tank, the tank shall be ventilated until the hazardous atmosphere is removed, and ventilation shall be continued so as to prevent the occurrence of a hazardous atmosphere as long as an employee is in the tank.

If, in emergencies, such as rescue work, it is necessary to enter a tank which may contain a hazardous atmosphere, suitable respirators, such as self-contained breathing apparatus; hose mask with blower, if there is a possibility of oxygen deficiency; or a gas mask, selected and operated in accordance with this section, shall be used. If a contaminant in the tank can cause dermatitis, or be absorbed through the skin, the employee entering the tank shall wear protective clothing. At least one trained standby employee, with suitable respirator, shall be present in the nearest uncontaminated area. The standby employee must be able to communicate with the employee in the tank and be able to haul him out of the tank with a lifeline if necessary.

Maintenance work requiring welding or open flame, where toxic metal fumes such a cadmium, chromium, or lead may be evolved, shall be done only with sufficient local exhaust ventilation to prevent the creation of a health hazard, or be done with respirators selected and used in accordance with this section. Welding, or the use of open flames near any solvent cleaning

equipment shall be permitted only after such equipment has first been thoroughly cleared of solvents and vapors.

Vapor Degreasing Tanks

In any vapor degreasing tank equipped with a condenser or vapor level thermostat, the condenser or thermostat shall keep the level of vapors below the top edge of the tank by a distance at least equal to one-half the tank width, or at least 36 inches (0.912 m), whichever is shorter.

Where gas is used as a fuel for heating vapor degreasing tanks, the combustion chamber shall be of tight construction, except for such openings as the exhaust flue, and those that are necessary for supplying air for combustion. Flues shall be of corrosion-resistant construction and shall extend to the outer air. If mechanical exhaust is used on this flue, a draft diverter shall be used. Special precautions must be taken to prevent solvent fumes from entering the combustion air of this or any other heater when chlorinated or fluorinated hydrocarbon solvents (for example, trichloroethylene, Freon) are used.

Heating elements shall be so designed and maintained that their surface temperature will not cause the solvent or mixture to decompose, break down, or be converted into an excessive quantity of vapor.

Tanks or machines of more than 4 square feet (0.368 m(2)) of vapor area, used for solvent cleaning or vapor degreasing, shall be equipped with a suitable cleanout or sludge doors located near the bottom of each tank or still. These doors shall be so designed and gasketed that there will be no leakage of solvent when they are closed.

This paragraph applies to all operations involving the immersion of materials in liquids, or in the vapors of such liquids, for the purpose of cleaning or altering their surfaces, or adding or imparting a finish thereto, or changing the character of the materials, and their subsequent removal from the liquids or vapors, draining, and drying. Such operations include washing, electroplating, anodizing, pickling, quenching, dyeing, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and other similar operations, but do not include molten materials handling operations, or surface coating operations.

Molton Materials Handling Operations

All operations, other than welding, burning, and soldering operations, involving the use, melting, smelting, or pouring of metals, alloys, salts, or other similar substances in the molten state. Such operations also include heat treating baths, descaling baths, die casting stereotyping, galvanizing, tinning, and similar operations.

Surface Coating Operations

All operations involving the application of protective, decorative, adhesive, or strengthening coating or impregnation to one or more surfaces, or into the interstices of any object or material,

by means of spraying, spreading, flowing, brushing, roll coating, pouring, cementing, or similar means; and any subsequent draining or drying operations excluding open-tank operations.

Bloodborne Pathogens

Policy

Celtic Commercial Painting, LLC. understands that there are a number of areas that must be addressed to effectively eliminate or minimize exposure to bloodborne pathogens transmitted through bodily fluids such as muvus, saliva, amniotic fluid, and any other bodily fluis that is vilisbly contaminated with blood or other bodily fluids that employees could be reasonably be exposed to in the workplace. Although not all need to be fully addressed, each will be discuss to ensure that all areas are considered. The first four areas addressed in our plan are:

- Use of "universal precautions"
- Establishment of appropriate engineering controls and work practice controls
- Use of necessary personal protective equipment (PPE)
- Implementation of appropriate housekeeping

Each of these areas is reviewed with employees during their blood borne pathogens training. By rigorously following the requirements of the Occupational Safety and Health Administration (OSHA's) Bloodborne Pathogens Standard in these four areas, Celtic Commercial Painting, LLC. not only comply with OSHA's standard but also eliminate or minimize its employees' occupational exposure to bloodborne pathogens as much as possible.

Universal Precautions

In the business, which includes all off-site work locations, as well as the shop, Celtic Commercial Painting, LLC. has begun the practice of "universal precautions." As a result, all human blood and bodily fluids are treated as though they are known to be infected with Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV) and other bloodborne pathogens.

In circumstances where it is difficult or impossible to differentiate between body fluid types, it is assumed that all body fluids are potentially infectious.

Engineering and Work Practice Controls

Engineering controls are controls that isolate or remove bloodborne pathogens hazards from the workplace. Work practice controls reduce the likelihood of exposure by altering the manner in which a task is performed.

In the construction industry, blood or other bodily fluids are not worked with in an occupational manner; any exposure to these potentially hazardous substances by anyone other than the cleaning staff is almost always the result of an accident. There is continual work to create safer working conditions for employees so that accidents will not occur, and all aspects of the safety program constitute work practice controls. Additional controls take the form of personal protective equipment (PPE), hand washing and other controls that occur immediately during and after an accident on a jobsite.

Personal Protective Equipment

Personal protective equipment is employees' line of defense against bloodborne pathogens. Because of this, Celtic Commercial Painting, LLC. provides (at no cost to the employees) the PPE they need to protect themselves against exposures.

PPE available for employees.

Employees are trained regarding the need for appropriate PPE for their job responsibilities. Additional training is provided when necessary, for example, if an employee takes a new position or if new job functions are added to his current position.

To ensure that PPE is not contaminated and is in the appropriate condition to protect employees from potential exposure, our Celtic Commercial Painting, LLC. adheres to the following practices:

- All PPE is inspected periodically and repaired or replaced, as needed, to maintain effectiveness.
- Single-use PPE is disposed of immediately after use.

To make sure that this equipment is used as effectively as possible, employees adhere to the following practices when using their PPE:

- Any garments penetrated by blood or other body fluids are removed as soon as feasible.
- All potentially affected PPE is removed prior to leaving the work area.
- Gloves are worn whenever an employee anticipates handling or touching contaminated items or surfaces.
- Disposable gloves are replaced as soon as practical after contamination or when they are torn, punctured or otherwise lose their ability to function as an exposure barrier.

Housekeeping

Maintaining its shop, office and work sites in clean and sanitary condition is an important part of Celtic Commercial Painting, LLC.'s exposure control plan. Employees are trained to promptly dispose of or clean any surface that comes into contact with bodily fluids, in keeping with the other sections of this program. There is no reason to anticipate regular exposure to bodily fluids by employees, other than the janitorial staff, so there is no routine schedule for decontamination at work sites.

The janitorial staff employs the following practices:

- All equipment and surfaces are cleaned and decontaminated after contact with blood or other potentially infectious material.
- Protective coverings (such as plastic trash bags) are removed and replaced at the end of the work shift if they have been contaminated during the shift.
- All trash containers, pails and bins are routinely cleaned and decontaminated as soon as possible after contaminated.

Celtic Commercial Painting, LLC. is very careful in its facility and on its work sites when handling regulated waste (including used bandages, tissues, feminine hygiene products and any other potentially infectious materials). If provisions of hand washing facilities are not feasible, then an appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes must be provided by the company.

- They are discarded or bagged in containers that are:
  - Closeable
  - Puncture-resistant
  - Leak-proof (if the materials have the potential to leak)
  - Red in color or labeled with the appropriate biohazard warning label
- Containers used for these purposes are placed in appropriate locations within easy access of employees and as close as possible to the sources of the waste.
- Waste containers are maintained upright and not allowed to overfill.
- Whenever employees move containers of regulated waste from one area to another, the containers are immediately closed and placed inside a secondary container, if leakage is possible from the first container.

Hepatitis B Vaccination

Celtic Commercial Painting, LLC. makes the hepatitis B vaccine and vaccination series available to all employees who have occupational exposure. Such vaccinations will be made available at no cost to employees.

Declination

In the event that any employees who are offered the Hepatitis B vaccination series decide to decline the series, they must read and sign the mandatory Hepatitis B Vaccine Declination form on the next page.

Hepatitis B Vaccine Declination Form

I understand that because of my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring the Hepatitis B Virus (HBV). I have been given the opportunity to be vaccinated with the Hepatitis B vaccine at no charge to me. At this time, however, I decline the Hepatitis B vaccination. I understand that by declining this vaccine, I continue to be at risk for acquiring Hepatitis B, a serious disease. If in the future I want to be vaccinated with the Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Employee: _____

Date: _____

Supervisor: _____

Post-Exposure Evaluation and Follow-Up

If employees are involved in an incident where exposure to blood borne pathogens may have occurred, there are two efforts on which to immediately focus:

1. Investigating the circumstances surrounding the exposure incident
2. Making sure that employees receive medical consultation and treatment (if required) as expediently as possible.

The Safety Coordinator investigates every exposure incident that occurs in the company facilities or on work sites. This investigation is initiated within 24 hours of the incident and involves gathering the following information:

- Date and time when the incident occurred
- Where the incident occurred
- What potentially infectious materials were involved in the incident
- Source of the material
- Under what circumstances the incident occurred
- How the incident was caused
- Personal protective equipment in use at the time of exposure
- Actions taken as a result of the exposure (decontamination, clean-up, notifications)

After this information is gathered, it is evaluated and a written summary of the incident and its cause is prepared. Recommendations are then made for avoiding similar incidents in the future

To make sure employees receive the best and most timely treatment when an exposure to bloodborne pathogens occurs, an evaluation and follow-up process has been setup. The checklist at the end of this section will be used to verify that all the steps in the process have been taken correctly.

Much of the information involved in this process must remain confidential, and everything possible will be done to protect the privacy of the people involved.

As the first step in this process, an exposed employee will be provided with the following confidential information:

- Documentation of the routes of exposure and circumstances under which the exposure incident occurred
- Identification of the source individual (unless protected by law)

(As previously stated, most exposure to bodily fluids will be the result of a workplace accident, and this information will be known.)

Next, if possible, the source individual’s blood will be tested to determine whether the Hepatitis B Virus (HBV) and the Human Immunodeficiency Virus (HIV) is present. This information will be made available to the exposed employee, if it is obtained. At that time, the employee will be

made aware of any applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

Finally, the blood of the exposed employee is collected and tested for HIV and HBV, if needed.

Once these procedures have been completed, an appointment is arranged for the exposed employee with a qualified health care professional to discuss the employee's medical status. This includes an evaluation of any reported illnesses, as well as any recommended treatment.

Information Provided to Healthcare Professionals

To assist health-care professionals, Celtic Commercial Painting, LLC. forwards a number of documents to them, including the following:

- A description of the exposure incident
- The exposed employee's relevant medical records
- Any other pertinent information

The Health-Care Professionals' Written Opinion

After the consultation, health-care professionals will provide Celtic Commercial Painting, LLC. with a written opinion evaluating the exposed employee's situation. In turn, a copy of this opinion will be furnished to the exposed employee.

In keeping with this process's emphasis on confidentiality, the written opinion will contain only the following information:

- Whether the Hepatitis B vaccination is indicated for the employee
- Whether the employee has received the Hepatitis B vaccination
- Confirmation that the employee has been informed of the results of the evaluation
- Confirmation that the employee has been told about any medical conditions resulting from the exposure incident time require further evaluation or treatment

All other findings or diagnoses will remain confidential and will not be included in the written report.

Medical Recordkeeping

To ensure that as much medical information as possible is available to the participating health-care professionals, comprehensive medical records will be kept on employees, which include the following information:

- Name of employee
- Social security number of employee
- Copies of the results of the examinations, medical testing and follow-up procedures that took place because of an employee's exposure to bloodborne pathogens
- A copy of the information provided to the consulting health-care professional

Accurate records for each employee with occupational exposure must be maintained for at least the duration of employment plus 30 years. As with all personal information, it is important that all medical records be kept confidential. They will not be disclosed or reported to anyone without an employee's written consent (except as required by law).

Post-Exposure Evaluation and Follow-Up Checklist

The following steps must be taken and information transmitted in the case of an employee's exposure to bloodborne pathogens:

Employee's Name: _____

Activity	**Date**
Employee furnished with documentation regarding exposure incident.	_____
Source individual identified: _____ Yes _____ No	_____
Source individual's blood collected and tested and results given to exposed employee.	_____
_____ Consent from source individual could not be obtained.	
Exposed employee's blood collected and tested.	_____
Appointment arranged for employee with health-care professional.	_____
Documentation forwarded to health-care professional.	_____
_____ Description of exposed employee's duties	
_____ Description of exposure incident, including routes of exposure	
_____ Result of source individual's blood testing	
_____ Employee's medical records	

Information and Training

Having well-informed and trained employees is extremely important when attempting to eliminate or minimize employees' exposure to bloodborne pathogens. For this reason, all employees who have the potential for exposure to bloodborne pathogens are put through a comprehensive training program and furnished with as much information as possible on this issue.

Training shall be provided at the time of initial assignment and within 1 year of their previous training.

Training Topics

The topics to be covered in our training program include, but are not limited to, the following:

- The Occupational Safety and Health Administration's (OSHA's) Bloodborne Pathogens Standard
- The epidemiology and symptoms of bloodborne diseases
- The modes of transmission of bloodborne pathogens
- Celtic Commercial Painting, LLC. exposure control plan (and where employees can obtain a copy)
- Appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious material
- A review of the use and limitations of methods that will prevent or reduce exposure, including:
    - Engineering and work practice controls
    - Personal Protective Equipment
- Selection and use of personal protective equipment, including:
    - Types available
    - Proper use
    - Location
    - Removal
    - Handling
    - Decontamination
    - Disposal
    - Actions to take and people to contact in an emergency involving blood or other potentially infectious materials
    - Procedures to follow if an exposure occurs, including the incident reporting
    - Information on the facility-provided post-exposure evaluation and follow-up, including medical consultation

Training Methods

Celtic Commercial Painting, LLC. training presentations make use of several training techniques including, but not limited to, those checked below:

_____ Classroom-type atmosphere with personal instruction

_____ Videotape programs

_____ Training manuals and employee handouts

_____ Employee review sessions

_____ Other

Because we feel employees need an opportunity to ask questions and interact with their instructors, time is set aside specifically for these activities in each training session.

Recordkeeping

To facilitate the training of employees, as well as to document the training process, training records containing the following information are maintained:

- Dates of all training sessions
- Contents/summary of the training sessions
- Names and qualifications of instructors
- Names and job titles of employees attending the training sessions

These training records are available for examination and copying to employees and their representatives, as well as OSHA and its representatives. Training records need to be maintained for duration of 3 years.

Bloodborne Pathogen Training

Date of Training: _____

Training Topic: _____

Instructors and Their Qualifications: _____

Attendee Name	**Attendee Signature**	**Attendee Job Title**

Ammonia

Purpose

The purpose of the Ammonia Awareness Program is to evaluate the presence of ammonia in the workplace and communicate this information, as well as appropriate protective measures to our employees.

Ammonia Characteristics

Ammonia (NH_3) has the following characteristics:

- Colorless gas at room temperature
- Commercially called anhydrous ammonia (anhydrous meaning absence of water)
- Known for its pungent smell
- Corrosive and can burn skin and eyes
- Liquid form can cause frostbite (minus 28 °F)
- Generally shipped and stored under pressure as a liquid
- Refrigerant grade ammonia is 99.95% pure (less than 33 ppm water)
- Common refrigeration uses:
    - Meat, poultry, and seafood processing facilities
    - Dairy and ice cream plants
    - Beverage production
    - Cold storage warehouses
- Soluble in water (household ammonia or ammonium hydroxide)
- Covered under OSHA Process Safety Management (PSM) regulation 1910.119

Ammonia Exposure Risks

The following table illustrates the effects of different concentrations of ammonia:

Concentration (ppm)	Effects
20	Perceptible odor
40	Slight eye irritation
50	OSHA PEL (Permissible Exposure Limit)
100	Eye and nasal passage irritation
300	IDLH (Immediately Dangerous to Life/Health)
400	Severe irritation of the throat, nasal passages, and upper respiratory tract
700	Severe eye irritation
1700	Serious coughing, bronchial spasms – exposure may be fatal
1700 - 5000	Serious edema, strangulation, asphyxia, fatal almost immediately

Emergency Action Plan

It is the responsibility of supervisor to provide employees at the work site with training and documentation regarding the client's Emergency Action Plan (EAP) for that facility. The EAP should address evacuation and response procedures and must comply with OSHA regulation 1910.38.

Training

It is the intent of this procedure to provide employees with the required training and information necessary concerning the ammonia hazards that they may be exposed to in the workplace. Training will be conducted initially and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Every employee shall receive training regarding the following:

- Explanation of the standard and how it pertains to the employee including their rights and responsibilities under the regulation.
- Identification of operations and procedures that incorporate the use of ammonia.
- Location and availability of the written Ammonia Awareness Program.
- Warnings and hazards associated with the usage of ammonia.
- Explanation of warnings, labels, and proper storage requirements.
- Explanation of engineering controls, administrative controls, procedures, personal hygiene, and personal protective equipment (eye and face, respiratory, and skin protection) used to protect against possible exposure.
- Identify bodily exposure and routes of entry.
- Emergency and first aid procedures to follow if employees are exposed to ammonia.

Additional Information

In accordance with the Ammonia Awareness Program, the following procedures will be adhered to at all times:

- No smoking shall be permitted in flammable or combustible storage areas.
- Approved containers shall be used to transport flammable or combustible substances.
- Employees shall obey all safety rules and posted signs while on the job.
- Non-routine tasks will be supervised.

Asbestos

Introduction

Asbestos is a naturally occurring fibrous silicate mineral known for its strength and durability and for its fireproof and insulation properties. It was used widely in construction and other products until 1978. Buildings constructed before 1980 are presumed to contain asbestos materials. During the twentieth century, some 30 million tons of asbestos have been used in industrial sites, homes, schools, shipyards, and commercial buildings in the United States.

Some of the more common asbestos-containing products are:

- Pipe-covering
- Insulating cement
- Insulating block
- Cloth
- Gaskets
- Packing materials
- Thermal seals
- Refractory and boiler insulation
- Transite board
- Doors
- Cement pipe
- Fireproofing spray
- Joint compound
- Floor tile
- Ceiling tile
- Mastics
- Adhesives
- Coatings
- Acoustical textures
- Roofing products
- Duct insulation for heating, ventilation and air conditioning (HVAC) systems
- Insulated electrical wire and panels
- Brake and clutch assemblies
- Fire-resistant drywall

Health Effects

Asbestos is primarily hazardous when it becomes “friable” or easily crumbled by hand pressure. Friable fibers may be released into the air. Once in the air, fibers may be inhaled into the lungs causing asbestosis, mesothelioma, lung cancer, or other lung diseases. Ingestion of asbestos may cause stomach and/or colon cancer. In addition, handling asbestos materials may cause irritation to the skin and eyes.

Asbestosis is caused when fibers become lodged in the lung tissue. The body responds by producing an acid, which scars the lung tissue and limits lung function. Though the acid damages the lung tissue, little damage is done to the corrosive-resistant asbestos fiber. The latency period, or the time it takes for the disease to develop, is often 25-40 years.

Mesothelioma and **lung cancer** are both either malignant or cancerous illnesses. Mesothelioma is cancer of the outer lining of the lung and/or the abdominal wall. It is unique since asbestos is the only known cause of this disease. The latency (time it takes for the disease to become active) period for mesothelioma is 15-30 years. The latency period for lung cancer is also 15-30 years. Asbestos-related cancers tend to result from substantial long-term exposure. However, the likelihood of lung cancer is increased up to 50 percent by smoking.

Asbestos Regulations

Both the EPA and OSHA control exposure to asbestos. EPA regulations are known as NESHAP (National Emission Standards for Hazardous Air Pollutants). These regulations specify control measures and work practices to reduce releases of asbestos into the environment. NESHAP regulations may require Asbestos Containing Material (ACM) removal before renovation and/or demolition projects to prevent significant asbestos releases into the air.

EPA has also implemented a separate regulation to handle asbestos materials used inside schools (grades K-12). This regulation is known as AHERA (Asbestos Hazards Emergency Response Act). The regulations require that all schools be inspected to determine the presence and quantity of asbestos. The type of corrective action such as removal, encapsulation, or maintenance in place is left up to the school.

OSHA regulations are designed to protect workers who handle ACM. OSHA has set standards for the number of fibers that a worker can be exposed to, called the permissible exposure limit (PEL). Current OSHA regulations have set a maximum workplace concentration limit of 0.1 f/cc measured as an 8-hour time-weighted-average. This is equivalent to approximately six fibers in a volume of air the size of a baseball. The time weighted-average is calculated by dividing the total exposure for a workday by eight hours. Exposures over 0.1 f/cc are allowed as long as they are balanced by exposures under 0.1 f/cc. The standard includes requirements for respiratory protection, medical surveillance, and work practices to reduce indoor asbestos levels.

Asbestos Awareness Training

Asbestos awareness training is required for employees whose work activities may contact asbestos containing material (ACM) or presumed asbestos containing material (PACM) but do not disturb the ACM or PACM during their work activities. All awareness training for Asbestos is/will be documented.

Permissible Exposure Limit (PEL)

No employee may be exposed to an airborne concentration of asbestos in excess of 0.1 fibers per cubic centimeter (f/cc) of air as an eight-hour time weighted average (TWA) or 1.0 fiber per cubic centimeter averaged over a 30 minute time period. An industrial hygienist will conduct sampling and TWA calculations according to regulatory guidance when PLU requires this information.

Asbestos Awareness Tips

Understand the Hazard

Asbestos is a unique product with sharp fibers much smaller than average dust particles. They can cause disabling and life shortening health problems many years after exposure to asbestos.

Each individual may be affected to a different degree depending on one's unique body, and the time and concentration of exposure.

All types of asbestos containing material can be dangerous when handled improperly. However, all types can be properly managed. Exposure can be prevented by containment, regular inspections, and proper precautions when working around or with the material. The majority of asbestos products effectively immobilize the asbestos fibers by mixing them into a strong binding material such as cement or epoxy (e.g., vinyl floor tile, transite board). These so called "hard" asbestos materials do not generally create exposure problems unless machined, sawed or sanded.

Recognize Asbestos Hazards

Soft, loosely bound, "friable" asbestos containing materials are the most hazardous type. These can cause contamination of the air and exposure problems. Some asbestos products are applied in this manner, but most hazards are a result of old asbestos containing material becoming worn, damaged, vandalized, or loose, thereby releasing asbestos fibers into the environment.

Know Where to Look for Asbestos

Asbestos has been used in over 3000 different products in industry. Hazardous asbestos should be expected whenever you see torn, damaged, or deteriorated "friable" materials on walls, ceilings, pipe and tank insulation, and fire doors.

Signs and labels shall identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that asbestos containing material (ACM) and/or presumed asbestos containing material (PACM) will not be disturbed.

Do Not Handle or Disturb Friable Asbestos

If asbestos damage is suspected, notify the Environmental Health and Safety Coordinator of the location and nature of the problem. Vacate the room and wait for an inspection and determination to be made.

Ask for Sampling or Protective Equipment

If you see loose friable materials or are planning a renovation or messy cleanup job which may disturb some suspicious looking material, ask your supervisor to check it, and submit an asbestos sample request to the Environmental Health and Safety Office.

Multi-Contractor Worksites

If employees working immediately adjacent to a Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

Use Proper Protection When Handling Asbestos Hazards

Minimal exposure will be encountered if you wear the proper protective equipment when handling asbestos. When taking a sample, always wear a respirator, and if the substance is touched with your hands, wash them thoroughly.

Benzene

Scope and Application

1. This section applies to all occupational exposures to benzene; except as provided in paragraphs (2) and (3) below.

2. This section does not apply to:

    - The storage, transportation, distribution, dispensing, sale or use of gasoline, motor fuels, or other fuels containing benzene subsequent to its final discharge from bulk wholesale storage facilities, except that operations where gasoline or motor fuels are dispensed for more than 4 hours per day in an indoor location are covered by this section.
    - Loading and unloading operations at bulk wholesale storage facilities which use vapor control systems for all loading and unloading operations, except for the provisions of 29 CFR 1910.1200 and the emergency provisions.
    - The storage, transportation, distribution or sale of benzene or liquid mixtures containing more than 0.1 percent benzene in intact containers or in transportation pipelines while sealed in such a manner as to contain benzene vapors or liquid, except for the provisions of 29 CFR 1910.1200 and the emergency provisions.
    - Containers and pipelines carrying mixtures with less than 0.1 percent benzene and natural gas processing plants processing gas with less than 0.1 percent benzene.
    - Work operations where the only exposure to benzene is from liquid mixtures containing 0.5 percent or less of benzene by volume, or the vapors released from such liquids until September 12, 1988; work operations where the only exposure to benzene is from liquid mixtures containing 0.3 percent or less of benzene by volume or the vapors released from such liquids from September 12, 1988, to September 12, 1989; and work operations where the only exposure to benzene is from liquid mixtures containing 0.1 percent or less of benzene by volume or the vapors released from such liquids after September 12, 1989; except that tire building machine operators using solvents with more than 0.1 percent benzene
    - Oil and gas drilling, production and servicing operations.
    - Coke oven batteries.

3. The cleaning and repair of barges and tankers which have contained benzene, exposure monitoring-general, accuracy of monitoring. Engineering and work practice controls shall be used to keep exposures below 10 ppm unless it is proven to be not feasible.

Definitions

Action level means an airborne concentration of benzene of 0.5 ppm calculated as an 8-hour time-weighted average.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Authorized person means any person specifically authorized by the employer whose duties require the person to enter a regulated area, or any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring and measuring procedures under paragraph (l) of this section, or any other person authorized by the Act or regulations issued under the Act.

Benzene (C(6)H(6)) (CAS Registry No. 71-43-2) means liquefied or gaseous benzene. It includes benzene contained in liquid mixtures and the benzene vapors released by these liquids. It does not include trace amounts of unreacted benzene contained in solid materials.

Bulk wholesale storage facility means a bulk terminal or bulk plant where fuel is stored prior to its delivery to wholesale customers.

Container means any barrel, bottle, can, cylinder, drum, reaction vessel, storage tank, or the like, but does not include piping systems.

Day means any part of a calendar day.

Director means the Director of the National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

Emergency means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which may or does result in an unexpected significant release of benzene.

Employee exposure means exposure to airborne benzene which would occur if the employee were not using respiratory protective equipment.

Regulated area means any area where airborne concentrations of benzene exceed or can reasonably be expected to exceed, the permissible exposure limits, either the 8-hour time weighted average exposure of 1 ppm or the short-term exposure limit of 5 ppm for 15 minutes.

Vapor control system means any equipment used for containing the total vapors displaced during the loading of gasoline, motor fuel or other fuel tank trucks and the displacing of these vapors through a vapor processing system or balancing the vapor with the storage tank. This equipment also includes systems containing the vapors displaced from the storage tank during the unloading of the tank truck which balance the vapors back to the tank truck.

Characteristics and Health Effects

1. Benzene is toxic, colorless, has an aromatic odor, is not soluble in water and is flammable.

2. Short term effects of overexposure may include: irritation of eyes, nose and skin, breathlessness, irritability, euphoria, headache, dizziness, or nausea. Long term effects may result in blood disorders such as leukemia and anemia.

Permissible Exposure Limits

1. Time-weighted average limit (TWA). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of one part of benzene per million parts of air (1 ppm) as an 8-hour time-weighted average.

2. Short-term exposure limit (STEL). The employer shall assure that no employee is exposed to an airborne concentration of benzene in excess of five (5) ppm as averaged over any 15 minute period.

Regulated Areas

1. Celtic Commercial Painting, LLC. shall establish a regulated area wherever the airborne concentration of benzene exceeds or can reasonably be expected to exceed the permissible exposure limits, either the 8-hour time weighted average exposure of 1 ppm or the short-term exposure limit of 5 ppm for 15 minutes.

2. Access to regulated areas shall be limited to authorized persons.

3. Regulated areas shall be determined from the rest of the workplace in any manner that minimizes the number of employees exposed to benzene within the regulated area.

4. Smoking is prohibited in areas where benzene is used or stored.

5. Benzene liquid is highly flammable and vapors may form explosive mixtures in air. Fire extinguishers must be readily available in areas where benzene is used or stored.

6. Exposure areas may include but not limited to refining areas and field maintenance.

Exposure Monitoring

General

- Determinations of employee exposure shall be made from breathing zone air samples that are representative of each employee's average exposure to airborne benzene.
- Representative 8-hour TWA employee exposures shall be determined on the basis of one sample or samples representing the full shift exposure for each job classification in each work area.
- Determinations of compliance with the STEL shall be made from 15 minute employee breathing zone samples measured at operations where there is reason to believe exposures are high, such as where tanks are opened, filled, unloaded or gauged; where containers or process equipment are opened and where benzene is used for cleaning or as a solvent in

an uncontrolled situation. The employer may use objective data, such as measurements from brief period measuring devices, to determine where STEL monitoring is needed.

- Except for initial monitoring, where Celtic Commercial Painting, LLC. can document that one shift will consistently have higher employee exposures for an operation, Celtic Commercial Painting, LLC. shall only be required to determine representative employee exposure for that operation during the shift on which the highest exposure is expected.

Initial Monitoring

- Each employer who has a place of employment shall monitor each of these workplaces and work operations to determine accurately the airborne concentrations of benzene to which employees may be exposed.
- The initial monitoring required shall be completed by 60 days after the effective date of this standard or within 30 days of the introduction of benzene into the workplace. Where Celtic Commercial Painting, LLC. has monitored within one year prior to the effective date of the OSHA standard and the monitoring satisfies all other requirements, Celtic Commercial Painting, LLC. may rely on such earlier monitoring results to satisfy the requirements.

Periodic Monitoring and Monitoring Frequency

- If the monitoring required reveals employee exposure at or above the action level but at or below the TWA, Celtic Commercial Painting, LLC. shall repeat such monitoring for each such employee at least every year.
- If the monitoring required reveals employee exposure above the TWA, Celtic Commercial Painting, LLC. shall repeat such monitoring for each such employee at least every six (6) months.
- Celtic Commercial Painting, LLC. may alter the monitoring schedule from every six months to annually for any employee for whom two consecutive measurements taken at least 7 days apart indicate that the employee exposure has decreased to the TWA or below, but is at or above the action level.
- Monitoring for the STEL shall be repeated as necessary to evaluate exposures of employees subject to short term exposures.

Termination of Monitoring

- If the initial monitoring required reveals employee exposure to be below the action level Celtic Commercial Painting, LLC. may discontinue the monitoring for that employee, except as otherwise required by the paragraph below of this section.
- If the periodic monitoring required by reveals that employee exposures, as indicated by at least two consecutive measurements taken at least 7 days apart, are below the action level the employer may discontinue the monitoring for that employee, except as otherwise required BELOW.

Additional Monitoring

- Celtic Commercial Painting, LLC. shall institute the exposure monitoring required when there has been a change in the production, process, control equipment, personnel or work practices which may result in new or additional exposures to benzene, or when Celtic Commercial Painting, LLC. has any reason to suspect a change which may result in new or additional exposures.
- Whenever spills, leaks, ruptures or other breakdowns occur that may lead to employee exposure, Celtic Commercial Painting, LLC. shall monitor (using area or personal sampling) after the cleanup of the spill or repair of the leak, rupture or other breakdown to ensure that exposures have returned to the level that existed prior to the incident.

Accuracy of Monitoring

- Monitoring shall be accurate, to a confidence level of 95 percent, to within plus or minus 25 percent for airborne concentrations of benzene.

Employee Notification of Monitoring Results

- Celtic Commercial Painting, LLC. must, within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to employees.
- Whenever the PELs are exceeded, the written notification shall contain the corrective action being taken by the employer to reduce the employee exposure to or below the PEL, or shall refer to a document available to the employee which states the corrective actions to be taken.

Methods of Compliance

Engineering Controls and Work Practices

- Celtic Commercial Painting, LLC. shall institute engineering controls and work practices to reduce and maintain employee exposure to benzene at or below the permissible exposure limits, except to the extent that Celtic Commercial Painting, LLC. can establish that these controls are not feasible.
- Wherever the feasible engineering controls and work practices which can be instituted are not sufficient to reduce employee exposure to or below the PELs, Celtic Commercial Painting, LLC. shall use them to reduce employee exposure to the lowest levels achievable by these controls and shall supplement them by the use of respiratory protection which complies with the requirements of the below section.
- Where Celtic Commercial Painting, LLC. can document that benzene is used in a workplace less than a total of 30 days per year, Celtic Commercial Painting, LLC. shall use engineering controls, work practice controls or respiratory protection or any combination of these controls to reduce employee exposure to benzene to or below the

PELs, except that employers shall use engineering and work practice controls, if feasible, to reduce exposure to or below 10 ppm as an 8-hour TWA.

Compliance Program

- When any exposures are over the PEL, Celtic Commercial Painting, LLC. shall establish and implement a written program to reduce employee exposure to or below the PEL primarily by means of engineering and work practice controls, as required by the below paragraph of this section.
- The written program shall include a schedule for development and implementation of the engineering and work practice controls. These plans shall be reviewed and revised as appropriate based on the most recent exposure monitoring data, to reflect the current status of the program.
- Written compliance programs shall be furnished upon request for examination and copying to the Assistant Secretary, the Director, affected employees and designated employee representatives.

Respiratory Protection

General

- For employees who use respirators required by this section, Celtic Commercial Painting, LLC. must provide each employee an appropriate respirator that complies with the requirements of this sections. Respirators must be used during:
    - Periods necessary to install or implement feasible engineering and work-practice controls.
    - Work operations for which the employer establishes that compliance with either the TWA or STEL through the use of engineering and work-practice controls is not feasible; for example, some maintenance and repair activities, vessel cleaning, or other operations for which engineering and work-practice controls are infeasible because exposures are intermittent and limited in duration.
    - Work operations for which feasible engineering and work- practice controls are not yet sufficient, to reduce employee exposure to or below the PELs.
    - Emergencies.

Respirator Program

- Celtic Commercial Painting, LLC. must implement a

- Respiratory Protection Program that covers each employee required by this section to use a respirator.
- For air-purifying respirators, Celtic Commercial Painting, LLC. must replace the air-purifying element at the expiration of its service life or at the beginning of each shift in which such elements are used, whichever comes first.
- If NIOSH approves an air-purifying element with an end-of- service-life indicator for benzene, such an element may be used until the indicator shows no further useful life.

Respirator Selection

- Celtic Commercial Painting, LLC. must:
  - Select, and provide to employees, the appropriate respirators.
  - Provide employees with any organic vapor gas mask or any self-contained breathing apparatus with a full facepiece to use for escape.
  - Use an organic vapor cartridge or canister with powered and non-powered air-purifying respirators, and a chin-style canister with full facepiece gas masks.
  - Ensure that canisters used with non-powered air-purifying respirators have a minimum service life of four hours when tested at 150 ppm benzene at a flow rate of 64 liters per minute (LPM), a temperature of 25 °C, and a relative humidity of 85%; for canisters used with tight-fitting or loose-fitting powered air-purifying respirators, the flow rates for testing must be 115 LPM and 170 LPM, respectively.
- Any employee who cannot use a negative-pressure respirator must be allowed to use a respirator with less breathing resistance, such as a powered air-purifying respirator or supplied-air respirator.

Protective Clothing and Equipment

- Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by Celtic Commercial Painting, LLC. at no cost to the employee and Celtic Commercial Painting, LLC. shall assure its use where appropriate. Eye and face protection shall meet the requirements of 29 CFR 1910.133.

Medical Surveillance

General

- Celtic Commercial Painting, LLC. shall make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year; for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year; for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by their current employer; and for employees involved in the tire building operations called tire building machine operators, who use solvents containing greater than 0.1 percent benzene.

- Celtic Commercial Painting, LLC. shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and that all laboratory tests are conducted by an accredited laboratory.
- Celtic Commercial Painting, LLC. shall assure that persons other than licensed physicians who administer the pulmonary function testing required by this section shall complete a training course in spirometry sponsored by an appropriate governmental, academic or professional institution.
- Celtic Commercial Painting, LLC. shall assure that all examinations and procedures are provided without cost to the employee and at a reasonable time and place.

Initial Examination

- Within 60 days of the effective date of this standard, or before the time of initial assignment, Celtic Commercial Painting, LLC. shall provide each employee with a medical examination including the following elements:
    - A detailed occupational history which includes:
        - Past work exposure to benzene or any other hematological toxins,
        - A family history of blood dyscrasias including hematological neoplasms;
        - A history of blood dyscrasias including genetic hemoglobin abnormalities, bleeding abnormalities, abnormal function of formed blood elements;
        - A history of renal or liver dysfunction;
        - A history of medicinal drugs routinely taken;
        - A history of previous exposure to ionizing radiation and
        - Exposure to marrow toxins outside of the current work situation.
    - Laboratory tests. A complete blood count including a leukocyte count with differential, a quantitative thrombocyte count, hematocrit, hemoglobin, erythrocyte count and erythrocyte indices (MCV, MCH, MCHC). The results of these tests shall be reviewed by the examining physician.
    - Additional tests as necessary in the opinion of the examining physician, based on alterations to the components of the blood or other signs which may be related to benzene exposure; and
    - For all workers required to wear respirators for at least 30 days a year, the physical examination shall pay special attention to the cardiopulmonary system and shall include a pulmonary function test.
- No initial medical examination is required to satisfy the requirements of this section if adequate records show that the employee has been examined in accordance with the procedures of this section within the twelve months prior to the effective date of this standard.

Periodic Examinations

- Celtic Commercial Painting, LLC. shall provide each employee covered this section with a medical examination annually following the previous examination. These periodic examinations shall include at least the following elements:

    - A brief history regarding any new exposure to potential marrow toxins, changes in medicinal drug use, and the appearance of physical signs relating to blood disorders:
    - A complete blood count including a leukocyte count with differential, quantitative thrombocyte count, hemoglobin, hematocrit, erythrocyte count and erythrocyte indices (MCV, MCH, MCHC); and
    - Appropriate additional tests as necessary, in the opinion of the examining physician, in consequence of alterations in the components of the blood or other signs which may be related to benzene exposure.
- Where the employee develops signs and symptoms commonly associated with toxic exposure to benzene, the employer shall provide the employee with an additional medical examination which shall include those elements considered appropriate by the examining physician.
- For persons required to use respirators for at least 30 days a year, a pulmonary function test shall be performed every three (3) years. A specific evaluation of the cardiopulmonary system shall be made at the time of the pulmonary function test.

Emergency Examinations

- In addition to the surveillance, if an employee is exposed to benzene in an emergency situation, Celtic Commercial Painting, LLC. shall have the employee provide a urine sample at the end of the employee's shift and have a urinary phenol test performed on the sample within 72 hours. The urine specific gravity shall be corrected to 1.024.
- If the result of the urinary phenol test is below 75 mg phenol/L of urine, no further testing is required.
- If the result of the urinary phenol test is equal to or greater than 75 mg phenol/L of urine, Celtic Commercial Painting, LLC. shall provide the employee with a complete blood count including an erythrocyte count, leukocyte count with differential and thrombocyte count at monthly intervals for a duration of three (3) months following the emergency exposure.
- If any of the conditions of this section exists, then the further requirements of this section shall be met and Celtic Commercial Painting, LLC. shall, in addition, provide the employees with periodic examinations if directed by the physician.

Additional Examinations and Referrals

- Where the results of the complete blood count required for the initial and periodic examinations indicate any of the following abnormal conditions exist, then the blood The hemoglobin level or the hematocrit falls below the normal limit [outside the 95% confidence interval (C.I.)] as determined by the laboratory for the particular geographic area and/or these indices show a persistent downward trend from the individual's pre-exposure norms; provided these findings cannot be explained by other medical reasons.
    - The thrombocyte (platelet) count varies more than 20 percent below the employee's most recent values or falls outside the normal limit (95% C.I.) as determined by the laboratory.

    - The leukocyte count is below 4,000 per mm 3 or there is an abnormal differential count.
- If the abnormality persists, the examining physician shall refer the employee to a hematologist or an internist for further evaluation unless the physician has good reason to believe such referral is unnecessary (see Appendix C of CFR 29 1910.1028 for examples of conditions where a referral may be unnecessary).
- Celtic Commercial Painting, LLC. shall provide the hematologist or internist with the information required to be provided to the physician and the medical record required to be maintained.
- The hematologist's or internist's evaluation shall include a determination as to the need for additional tests, and the employer shall assure that these tests are provided.

Information Provided to the Physician

- Celtic Commercial Painting, LLC. shall provide the following information to the examining physician:
    - A copy of this regulation and its appendices;
    - A description of the affected employee's duties as they relate to the employee's exposure;
    - The employee's actual or representative exposure level:
        - A description of any personal protective equipment used or to be used; and
        - Information from previous employment-related medical examinations of the affected employee which is not otherwise available to the examining physician.

Physician's Written Opinions

- For each examination under this section, the employer shall obtain and provide the employee with a copy of the examining physician's written opinion within 15 days of the examination. The written opinion shall be limited to the following information:
    - The occupationally pertinent results of the medical examination and tests;
    - The physician's opinion concerning whether the employee has any detected medical conditions which would place the employee's health at greater than normal risk of material impairment from exposure to benzene;
    - The physician's recommended limitations upon the employee's exposure to benzene or upon the employee's use of protective clothing or equipment and respirators.
    - A statement that the employee has been informed by the physician of the results of the medical examination and any medical conditions resulting from benzene exposure which require further explanation or treatment.
- The written opinion obtained by Celtic Commercial Painting, LLC. shall not reveal specific records, findings, and diagnoses that have no bearing on the employee's ability to work in a benzene-exposed workplace.

Medical Removal Plan

- When a physician makes a referral to a hematologist/internist, the employee shall be removed from areas where exposures may exceed the action level until such time as the physician makes a determination.
- Following the examination and evaluation by the hematologist/internist, a decision to remove an employee from areas where benzene exposure is above the action level or to allow the employee to return to areas where benzene exposure is above the action level shall be made by the physician in consultation with the hematologist/internist. This decision shall be communicated in writing to Celtic Commercial Painting, LLC. and employee. In the case of removal, the physician shall state the required probable duration of removal from occupational exposure to benzene above the action level and the requirements for future medical examinations to review the decision.
- For any employee who is removed, Celtic Commercial Painting, LLC. shall provide a follow-up examination. The physician, in consultation with the hematologist/internist, shall make a decision within 6 months of the date the employee was removed as to whether the employee shall be returned to the usual job or whether the employee should be removed permanently.
- Whenever an employee is temporarily removed from benzene exposure, Celtic Commercial Painting, LLC. shall transfer the employee to a comparable job for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible, but in no event higher than the action level. Celtic Commercial Painting, LLC. shall maintain the employee's current wage rate, seniority and other benefits. If there is no such job available, the employer shall provide medical removal protection benefits until such a job becomes available or for 6 months, whichever comes first.
- Whenever an employee is removed permanently from benzene exposure based on a physician's recommendation, the employee shall be given the opportunity to transfer to another position which is available or later becomes available for which the employee is qualified (or can be trained for in a short period) and where benzene exposures are as low as possible but in no event higher than the action level. Celtic Commercial Painting, LLC. shall assure that such employee suffers no reduction in current wage rate, seniority or other benefits as a result of the transfer.

Medical Removal Protection Benefits

- Celtic Commercial Painting, LLC. shall provide to an employee 6 months of medical removal protection benefits immediately following each occasion an employee is removed from exposure to benzene because of hematological findings, unless the employee has been transferred to a comparable job where benzene exposures are below the action level.
- For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that Celtic Commercial Painting, LLC. shall maintain the current wage rate, seniority and other benefits of an employee as though the employee had not been removed.

- Celtic Commercial Painting, LLC. obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or from employment with another employer made possible by virtue of the employee's removal.

Communication of Benzene Hazards to Employees

Signs and Labels

- Celtic Commercial Painting, LLC. shall post signs at entrances to regulated areas. The signs shall bear the following legend:

  DANGER
  BENZENE
  MAY CAUSE CANCER
  HIGHLY FLAMMABLE LIQUID AND VAPOR DO NOT SMOKE
  WEAR RESPIRATORY PROTECTION IN THIS AREA
  AUTHORIZED PERSONNEL ONLY

- Celtic Commercial Painting, LLC. shall ensure that labels or other appropriate forms of warning are provided for containers of benzene within the workplace. There is no requirement to label pipes. The labels shall comply with the requirements of 29 CFR 1910.1200(f) and in addition shall include the following legend:

  DANGER
  CONTAINS BENZENE
  CANCER HAZARD

Safety Data Sheets

- Celtic Commercial Painting, LLC. shall obtain or develop, and shall provide access to their employees, to a Safety Data Sheet (SDS) which addresses benzene and complies with the OSHA standards.
- Employers who are manufacturers or importers shall:
  - Comply with paragraph (a) of this section, and
  - Comply with the requirement in OSHA's Hazard Communication Standard, 29 CFR 1910.1200, that they deliver to downstream employers a SDS which addresses benzene.

Information and Training

- Celtic Commercial Painting, LLC. shall provide employees with information and training at the time of their initial assignment to a work area where benzene is present. If exposures are above the action level, employees shall be provided with information and training at least annually thereafter.

- The training program shall be in accordance with the requirements of 29 CFR 1910.1200, and shall include specific information on benzene for each category of information included in that section.
- In addition to the information required under 29 CFR 1910.1200, Celtic Commercial Painting, LLC. shall:
    - Provide employees with an explanation of the contents of this section, including Appendices A and B, and indicate to them where the standard is available; and
    - Describe the medical surveillance program required under paragraph (i) of this section, and explain the information contained in Appendix C of CFR 29 1910.1028.

Recordkeeping

Exposure Measurements

- Celtic Commercial Painting, LLC. shall establish and maintain an accurate record of all measurements, in accordance with 29 CFR 1910.1020.
- This record shall include:
    - The dates, number, duration, and results of each of the samples taken, including a description of the procedure used to determine representative employee exposures;
    - A description of the sampling and analytical methods used;
    - A description of the type of respiratory protective devices worn, if any; and
    - The name, social security number, job classification and exposure levels of the employee monitored and all other employees whose exposure the measurement is intended to represent.
- Celtic Commercial Painting, LLC. shall maintain this record for at least 30 years, in accordance with 29 CFR 1910.1020.

Medical Surveillance

- Celtic Commercial Painting, LLC. shall establish and maintain an accurate record for each employee subject to medical surveillance, in accordance with 29 CFR 1910.1020.
- This record shall include:
    - The name and social security number of the employee;
    - The employer’s copy of the physician’s written opinion on the initial, periodic and special examinations, including results of medical examinations and all tests, opinions and recommendations;
    - Any employee medical complaints related to exposure to benzene;
    - A copy of the information provided to the physician; and
    - A copy of the employee’s medical and work history related to exposure to benzene or any other hematologic toxins.
- Celtic Commercial Painting, LLC. shall maintain this record for at least the duration of employment plus 30 years, in accordance with 29 CFR 1910.1020.

Availability

- Celtic Commercial Painting, LLC. shall assure that all records required to be maintained by this section shall be made available upon request to the Assistant Secretary and the Director for examination and copying.
- Employee exposure monitoring records required by this paragraph shall be provided upon request for examination and copying to employees, employee representatives, and the Assistant Secretary in accordance with 29 CFR 1910.1020.
- Employee medical records required by this paragraph shall be provided upon request for examination and copying, to the subject employee, to anyone having the specific written consent of the subject employee, and to the Assistant Secretary in accordance with 29 CFR 1910.1020.

Transfer of Records

- Celtic Commercial Painting, LLC. shall comply with the requirements involving transfer of records as set forth in 29 CFR 1910.1020.

Observation of Monitoring

1. Employee observation. Celtic Commercial Painting, LLC. shall provide affected employees, or their designated representatives, an opportunity to observe the measuring or monitoring of employee exposure to benzene conducted.
2. Observation procedures. When observation of the measuring or monitoring of employee exposure to benzene requires entry into areas where the use of protective clothing and equipment or respirators is required, the employer shall provide the observer with personal protective clothing and equipment or respirators required to be worn by employees working in the area, assure the use of such clothing and equipment or respirators, and require the observer to comply with all other applicable safety and health procedures.
3. Employees must be informed where benzene is used in the host facility and aware of additional plant safety rules.

Butadine

Purpose

The purpose of this program is to establish requirements for the use and handling of materials that expose employees to butadiene.

Scope

This program covers all Celtic Commercial Painting, LLC. employees.

Key Responsibilities

Managers/Supervisors

- Shall ensure that all employees are aware of the proper work procedures for butadiene
- Shall ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.
- As part of the JSA and other hazard evaluation processes, identifies and evaluates butadiene hazards and potential exposures during planning and the conduct of work.
- Reviews and approves the Task-Specific Safety Analysis.
- As necessary, quantitatively determines the presence of butadiene in materials, substrates, and other media. This may involve the collection of samples for analysis by a qualified laboratory or field testing using acceptable test methods.
- Provides results of any butadiene survey to management/supervision, along with information regarding hazard potential and control measures. As appropriate, makes recommendations to management/supervision to maintain, modify, upgrade, or downgrade controls accordingly.
- Takes prompt corrective measures (or supports any Competent Person in this role) to eliminate hazards; such as recommending to management/supervision to implement or modify engineering, administrative, work practice, and personal protection (including respiratory protection) controls.
- Conducts periodic exposure assessment.
- As appropriate, assists management/supervision in ensuring that workers have the necessary training and medical surveillance based upon the activity and hazard.
- In evaluating butadiene hazards and specifying controls for a job, (a) utilizes reliable historical exposure monitoring data generated for other similar operations or activities, (b) utilizes objective data, and/or (c) plans and conducts initial monitoring to determine exposures and assess the effectiveness of hazard controls.
- Conducts initial and periodic exposure monitoring in accordance with National Institute for Occupational Safety and Health (NIOSH)/OSHA methods if lacking historical or objective data.
- Maintains effective records of jobs monitored, so that a historical database can be used to specify controls and eliminate unnecessary and redundant monitoring for future activities.

- Supports project management/supervision in responding to exposures above the PEL when workers were not adequately protected.
- As appropriate, participates in pre-job and daily worker briefings regarding task-specific butadiene hazards and controls, work practices/plans (such as JSAs), and other applicable information, including any changes that are made to controls or to the work practices or plans.

Employees

- Shall follow all requirements regarding the safe work procedures for butadiene.

Possible Locations

Butadiene may be present at refineries and petrochemical plants. Butadiene is used in the production of styrene-butadiene rubber and polybutadiene rubber for the tire industry. Other uses include copolymer latexes for carpet backing and paper coating as well as resins and polymers for pipes and automobile and appliance parts. It is also used as an intermediate in the production of such chemicals as fungicides.

Characteristics

Butadiene is a flammable, colorless gas with a mild, aromatic odor at room temperature and pressure. Butadiene may also exist as a cryogenic liquid. Butadiene is insoluble in water, stable, and reacts with oxidizers.

Physical Hazards

- Flammable gas
- Explosive peroxides
- Fire hazard when exposed to heat, flame, or strong oxidizers
- Release of toxic gases such as carbon monoxide during a fire

Health Hazards

- There are no recorded cases of accidental exposures at high levels that have caused death in humans, but this could occur.
- Overexposure can cause respiratory and eye irritation
- Contact with liquid butadiene can cause burns and frostbite
- Acute (short term) health hazards include:
    - Central nervous system effects
    - Blurred vision
    - Nausea
    - Fatigue
    - Headache
    - Decreased blood pressure
    - Decreased pulse rate

    - Unconsciousness
- Chronic (long term) health hazards include:
    - Cancers of the lymphohematopoietic system (carcinogen)
    - Lymphoma
    - Leukemia
    - Potential reproductive toxicity

Practices

Exposure Monitoring

Monitoring or measuring of employee exposure shall be conducted when exposure to butadiene is at or above the action level on 30 or more days a year or when exposure is at or above the PELs for 10 days or more a year or following an emergency situation.

Regulated Areas

Regulated areas shall be established when exposure to an employee is or is expected to be in excess of the PEL. Regulated areas shall be marked with warning signs to alert employees and access is restricted to authorized persons only.

Contingency Planning

Celtic Commercial Painting, LLC. shall be aware of owner's contingency plan provisions. Employees must be informed where butadiene is used in host facility and aware of additional plant safety rules.

Respiratory Protection and PPE

- Eye and skin protection should be worn where exposures to liquid butadiene may occur.
- Respirators may be required where exposures are above the permissible exposure limit, and emergency respirators may be required where releases could occur.
- Contact lenses should not be worn when working with this chemical.

Fire Protection

Fire extinguishers shall be readily available and smoking prohibited in areas where butadiene is present or where butadiene may be released.

Training

Training shall be provided on the health hazards and any use/handling requirements for butadiene at time of initial assignment and annually. Celtic Commercial Painting, LLC. will assure employee participation and maintain a written record of the training contents. This training will include:

- Hazard communication training for potentially exposed employees.

- Training specified by the applicable butadiene standard.
- Respirator training if respirators are to be used.
- Provide information to workers regarding task-specific butadiene hazards and control methods, the JSA, work practices, medical surveillance and other applicable information, including any changes that are made to these controls.
- Provide training annually, as appropriate, to workers who continue to have exposure to butadiene at or above the action level on any one day.
- All training will be recorded and include the identity of the employee trained, the signature of the person who conducted the training and the date of the training.

Combustible Dust

Purpose

The goal of this program is to improve the safety of workers in environments where combustible dusts may be encountered by increasing employee awareness of this hazard, and by demonstrating how the hazard can be recognized and addressed in their workplace.

What is Combustible Dust?

Essentially, a combustible dust is any fine material that has the ability to catch fire and explode when mixed with air. Combustible dusts can be from:

- Most solid organic materials (such as sugar, flour, grain, wood, etc.),
- Many metals, and
- Some non-metallic inorganic materials.

Some of these materials are not “normally” combustible, but they can burn or explode if the particles are the right size and in the right concentration.

Therefore any activity that creates dust should be investigated to see if there is a risk of that dust being combustible. Dust can collect on surfaces such as rafters, roofs, suspended ceilings, ducts, crevices, dust collectors, and other equipment. When the dust is disturbed and under certain circumstances, there is the potential for a serious explosion to occur. The build-up of even a very small amount of dust can cause serious damage.

Celtic Commercial Painting, LLC. facilities have carefully identified the following in order to assess their potential for dust explosions:

- Materials that can be combustible when finely divided;
- Processes which use, consume, or produce combustible dusts;
- Open areas where combustible dusts may build up;
- Hidden areas where combustible dusts may accumulate;
- Means by which dust may be dispersed in the air; and
- Potential ignition sources.

One possible source for information on combustibility is Safety Data Sheets (SDS) for the material.

Dust and Ignition Sources

Elements needed for fire (the familiar “Fire Triangle”):

1. Combustible dust (fuel);
2. Ignition source (heat); and,
3. Oxygen in air (oxidizer).

Additional elements needed for a combustible dust explosion:

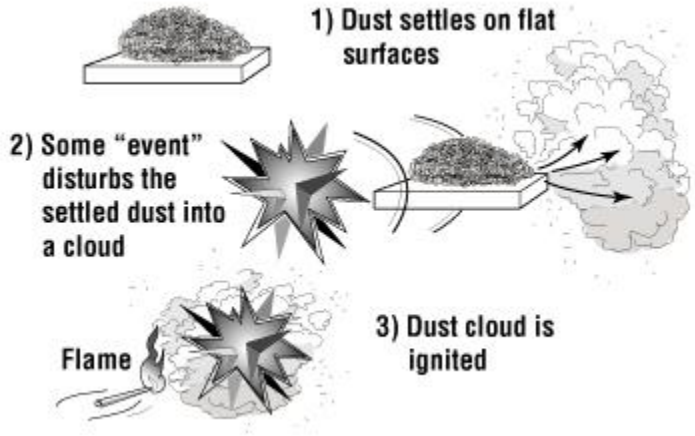
1. Dispersion of dust particles in sufficient quantity and concentration; and,
2. Confinement of the dust cloud.

Primary Explosion

A primary explosion takes place in a confined atmosphere such as a cyclone, storage silo, or enclosed part of the manufacturing plant. After detonation, the shock wave can damage and often rupture walls, allowing burning dust and gases from the explosion to be expelled into the surrounding area.

Secondary Explosion

The primary explosion will disturb settled dust that may have accumulated. Once airborne, this dust can support a larger explosion; this is referred to as a secondary explosion. Secondary explosions can cause severe damage to surrounding plant buildings. All large-scale dust explosions result from chain reactions of this type. There may be a chain reaction of many explosions caused by the initial explosion.



Reducing and Managing Dust

Celtic Commercial Painting, LLC.'s procedures to reduce and manage dust, include:

- Dust collection systems where needed.
- Minimizing the escape of dust from equipment.
- Surfaces that minimize dust accumulation and facilitate cleaning.
- Access to hidden areas to permit inspection (e.g., above drop ceilings).
- Inspecting and cleaning at regular intervals, using methods that do not generate dust clouds.
- Training employees to recognize and report hazards.

Prevention Measures

Eliminate

- Where possible, avoid horizontal surfaces (such as window ledges, beams, light fittings, etc.) where dust can accumulate.
- Eliminate “hidden” areas where dust can accumulate unnoticed.
- Do not use brooms or compressed air hoses to clean surfaces. Only use vacuums approved for dust collection.
- Do not use fans to remove dust. Fans only stir the dust, adding dust particles into the air.

Substitute

Install smooth ceilings and other surfaces (instead of a rough finish) to minimize dust accumulation and to make cleaning easier.

Engineering

- Use an appropriate dust extraction and collection system with the inlet located as close to the dust producing process as possible. Follow required standards and codes when installing these systems. Locate dust collectors outdoors, where possible.
- Direct explosion venting away from areas where there may be employees.
- Use appropriate electrical and ventilation equipment.
- Keep all mechanical and electrical equipment in good repair.
- Keep static electricity under control, which includes the bonding and grounding of equipment. Check all bonded and grounded equipment regularly to ensure the bonds are in good condition.
- Check equipment that may wear (e.g., bearings) as they may generate heat and become an ignition source.
- Remove open flames, sparks, friction, heat sources, and other sources of ignition.
- Select and use intrinsically safe tools or machinery.
- Put covers around pipes and cables, or embed pipes and cables in the walls, where possible, to reduce surfaces where dust can accumulate.

Administration

- Develop a hot work permit system for activities such as welding and cutting.
- Keep ignition sources away from dusty areas or use suitable controls.
- Educate all employees about combustible dusts, the hazards, and how they can help eliminate the risk of fire and explosions.
- Inspect for dust at regular intervals.
- Establish a housekeeping program that will remove dust regularly.
- Use proper equipment and techniques when cleaning dust. Care must be taken to minimize dust clouds, and only use vacuums approved for dust collection.
- Regularly inspect machines, ducts, and ventilation systems for dust. Repair or clean promptly

Follow National Fire Protection Association (NFPA) standard 654, *Standard for the Prevention of Fire and Dust Explosions from Manufacturing, Processing, and Handling of Combustible Particulate Solids,* and other NFPA dust explosion prevention standards for specific industries, as applicable.

Control Measures

Housekeeping

A crucial key to the reduction of fires and explosions is housekeeping. Housekeeping, however, relates to hazards in addition to fires and explosions. Research has shown that facilities that are well maintained experience fewer fires, explosions, and other accidents, and are more profitable as well. Using vacuum cleaners to pick up the dust is a very good way to eliminate the hazard. It is extremely important to ensure that the vacuum cleaner is designated intrinsically safe for the job.

Housekeeping is your first line of defense:

- Work area must be kept clean from dust accumulation
- Machinery should be equipped with engineered dust collection hoods
- Dust accumulation must be kept below minimum layer thickness
- Remove dust from up-facing surfaces i.e.beams, piping and ductwork, machine enclosures, etc.
- Watch out for hot surfaces and or potential ignition sources

Use proper equipment for housekeeping:

- DO NOT use compressed air for cleaning
- All hot sources must be shut down and cooled off before commencement of cleaning
- Use only vacuum cleaners certified to work in dusty environment
- Alternative install central vacuum system with vacuum device placed outside.

Ignition Control

The following are some of its recommendations:

- Use appropriate electrical equipment and wiring methods;
- Control static electricity, including bonding of equipment to ground
- Control smoking, open flames, and sparks;
- Control mechanical sparks and friction;
- Use separator devices to remove foreign materials capable of igniting combustibles from process materials;
- Separate heated surfaces from dusts;
- Separate heating systems from dust;
- Proper use and type of industrial trucks;

- Proper use of cartridge activated tools; and
- Adequately maintain all the above equipment

The use of proper electrical equipment in hazardous locations is crucial to eliminating a common ignition source.

The use of industrial trucks is regulated by OSHA's Powered Industrial Truck standard (29 CFR 1910.178). Hazardous atmospheres including dust concentrations are addressed in paragraph (c) of this standard.

Recognizing Dust Hazards

All Celtic Commercial Painting, LLC. employees should be trained in hazard recognition.

- Conduct general facility-wide inspections of dust explosion possibilities on a periodic basis.
- Conduct internal audits in order to identify potential explosion hazards.
- Encourage a preventative attitude among employees for eliminating dust explosions.
- Have employees and supervisors identify explosion hazards through job hazard analyses (JHAs).
- Pay particular attention to dust collection systems and other areas not in plain view during the inspection.

Training

Employees

All Celtic Commercial Painting, LLC. employees will be trained in safe work practices applicable to their job tasks. They should be trained before they start work, periodically to refresh their knowledge, when reassigned, and when hazards or processes change.

If there are any hazardous chemicals (including combustible dusts) in the workplace, Celtic Commercial Painting, LLC. will comply with 29 CFR 1910.1200, the Hazard Communication standard. This includes having labels on containers of hazardous chemicals, using Safety Data Sheets, and providing employee training.

Managers

Celtic Commercial Painting, LLC. supervisors and managers will be aware of and support the Combustible Dust Program. Their training will include identifying how they can encourage the reporting of unsafe practices and facilitate abatement actions.

Lead

Introduction

Celtic Commercial Painting, LLC. is responsible for providing a safe and healthy workplace for its employees. This chapter provides a general overview of handling lead based safety and health hazards in compliance with OSHA standards.

Hazards of Lead Exposure

Pure lead (Pb) is a heavy metal at room temperature and pressure. A basic chemical element, it can combine with various other substances to form numerous lead compounds. Lead has been poisoning workers for thousands of years. Lead can damage the central nervous system, cardiovascular system, reproductive system, hematological system, and kidneys. When absorbed into the body in high enough doses, lead can be toxic. In addition, workers' lead exposure can harm their children's development.

Short-term (acute) overexposure–as short as days--can cause acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest. Short-term occupational exposures of this type are highly unusual but not impossible.

Extended, long-term (chronic) overexposure can result in severe damage to the central nervous system, particularly the brain. It can also damage the blood-forming, urinary, and reproductive systems. There is no sharp dividing line between rapidly developing acute effects of lead and chronic effects that take longer to develop.

Symptoms of Over-Exposure

Some of the common symptoms of over-exposure to lead include:

- Loss of appetite;
- Constipation;
- Nausea;
- Excessive tiredness;
- Headache;
- Fine tremors;
- Colic with severe abdominal pain;
- Metallic taste in the mouth;
- Weakness;
- Nervous irritability;
- Hyperactivity;
- Muscle and joint pain or soreness;
- Anxiety;
- Pallor;
- Insomnia;

- Numbness; and
- Dizziness.

Reproductive Risks

Lead is toxic to both male and female reproductive systems. Lead can alter the structure of sperm cells and there is evidence of miscarriage and stillbirth in women exposed to lead or whose partners have been exposed. Children born to parents who were exposed to excess lead levels are more likely to have birth defects, mental retardation, or behavioral disorders or to die during the first year of childhood.

Employees who desire medical advice about reproductive issues related to lead may contact qualified medical personnel to arrange for a job evaluation and medical follow-up--particularly if they are pregnant or actively seeking to have a child. Whenever any Celtic Commercial Painting, LLC. employees may be exposed to lead, Celtic Commercial Painting, LLC. will make medical examinations and consultations available.

Chelating Agents

Under certain limited circumstances, a physician may prescribe special drugs called chelating agents to reduce the amount of lead absorbed in body tissues. Using chelation as a preventive measure – that is, to lower blood level but continue to expose a worker--is prohibited. Therapeutic or diagnostic chelating agents that are required must be used under the supervision of a licensed physician in a clinical setting, with thorough and appropriate medical monitoring. The employee must be notified in writing before treatment of potential consequences and allowed to obtain a second opinion.

Worker Exposure

Lead is most commonly absorbed into the body by inhalation. When workers breathe in lead as a dust, fume, or mist, their lungs and upper respiratory tract absorb it into the body. They can also absorb lead through the digestive system if it enters the mouth and is ingested. A significant portion of the lead inhaled or ingested gets into the bloodstream. Once in the bloodstream, lead circulates through the body and is stored in various organs and body tissues. Some of this lead is filtered out of the body quickly and excreted, but some remains in the blood and tissues. As exposure continues, the amount stored will increase if the body absorbs more lead than it excretes.

The lead stored in the tissue can slowly cause irreversible damage, first to individual cells, then to organs and whole body systems.

How Lead is Used

In construction, lead is used frequently for roofs, cornices, tank linings, and electrical conduits. In plumbing, soft solder, used chiefly for soldering tinplate and copper pipe joints, is an alloy of lead and tin. Soft solder has been banned for many uses in the United States. In addition, the

Consumer Product Safety Commission bans the use of lead-based paint in residences.

Because lead-based paint inhibits the rusting and corrosion of iron and steel, however, lead continues to be used on bridges, railways, ships, lighthouses, and other steel structures, although substitute coatings are available.

Construction projects vary in their scope and potential for exposing workers to lead and other hazards. Projects such as removing paint from a few interior residential doors may involve limited exposure. Others projects, however, may involve removing or stripping substantial quantities of lead-based paints on large bridges and other structures.

Most Vulnerable Employees

Employees potentially at risk for lead exposure include those involved in iron work; demolition work; painting; lead-based paint abatement; plumbing; heating and air conditioning maintenance and repair; electrical work; and carpentry, renovation, and remodeling work. Plumbers, welders, and painters are among those workers most exposed to lead. Significant lead exposures also can arise from removing paint from surfaces previously coated with lead-based paint such as bridges, residences being renovated, and structures being demolished or salvaged. With the increase in highway work, bridge repair, residential lead abatement, and residential remodeling, the potential for exposure to lead-based paint has become more common.

Workers at the highest risk of lead exposure are those involved in:

- Abrasive blasting and
- Welding, cutting, and burning on steel structures.

Other operations with the potential to expose workers to lead include:

- Lead burning;
- Using lead-containing mortar;
- Power tool cleaning without dust collection systems;
- Rivet busting;
- Cleanup activities where dry expendable abrasives are used;
- Movement and removal of abrasive blasting enclosures;
- Manual dry scraping and sanding;
- Manual demolition of structures;
- Heat-gun applications;
- Power tool cleaning with dust collection systems; and
- Spray painting with lead-based paint.

Lead Standard

Lead Standard for the construction industry, particularly those imposed by OSHA under Title 29 Code of Federal Regulations 1926.62, covers lead in a variety of forms, including metallic lead, all inorganic lead compounds, and organic lead soaps.

Exposure Limits

The standard establishes maximum limits of exposure to lead for all workers covered, including a permissible exposure limit (PEL) and action level (AL).

The PEL sets the maximum worker exposure to lead: 50 micrograms of lead per cubic meter of air (50µg/m3) averaged over an eight-hour period.

If Celtic Commercial Painting, LLC. employees are exposed to lead for more than eight hours in a workday, their allowable exposure for that day must be reduced according to this formula:

Employee exposure (in µg/m3) = 400 divided by the hours worked in the day.

The AL, regardless of respirator use, is an airborne concentration of 30µg/m3, averaged over an eight-hour period. The AL is the level at which an employer must begin specific compliance activities outlined in the OSHA standard.

Applicability to Celtic Commercial Painting, LLC. Employees

The applicable OSHA lead standard applies to all construction work where an employee may be exposed to lead. All work related to construction, alteration, or repair, including painting and decorating, is included. Under this standard, construction includes, but is not limited to:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions or materials containing lead;
- Installation of products containing lead;
- Lead contamination from emergency cleanup;
- Transportation, disposal, storage, or containment of lead or materials containing lead where construction activities are performed; and
- Maintenance operations associated with these construction activities.

Celtic Commercial Painting, LLC. Responsibilities

Employee Protections

Celtic Commercial Painting, LLC. will provide the following, as necessary or required, to its employees in regards to lead based hazards:

- Hazard determination, including exposure assessment;
- Medical surveillance and provisions for medical removal;
- Job-specific compliance programs;
- Engineering and work practice controls;
- Respiratory protection;

- Protective clothing and equipment;
- Insure Good housekeeping;
- Proper hygiene facilities and practices;
- Hazard signage;
- Employee information and training; and
- Recordkeeping.

Because lead is a cumulative and persistent toxic substance and health effects may result from exposure over prolonged periods, Celtic Commercial Painting, LLC. will use these precautions where feasible to minimize employee exposure to lead.

Celtic Commercial Painting, LLC. will, as needed, consult a qualified safety and health professional to develop and implement an effective, site-specific worker protection program. These professionals may work independently or may be associated with an insurance carrier, trade organization, or on-site consultation program.

Compliance Program

For each job where employee exposure exceeds the PEL, Celtic Commercial Painting, LLC. will establish and implement a program to reduce employee exposure to the PEL or below. The program must provide for frequent and regular inspections of jobsites, materials, and equipment by a competent person.

Programs, which must be reviewed and updated at least every six months, must include:

- A description of each activity in which lead is emitted (such as equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures, and maintenance practices);
- The means to be used to achieve compliance and engineering plans and studies used to determine the engineering controls selected where they are required;
- Information on the technology considered to meet the PEL;
- Air monitoring data that document the source of lead emissions;
- A detailed schedule for implementing the program, including copies of documentation (such as purchase orders for equipment, construction contracts);
- A work practice program;
- An administrative control schedule, if applicable; and
- Arrangements made among contractors on multi-contractor sites to inform employees of potential lead exposure.

Hazard Assessment

Celtic Commercial Painting, LLC. is required to conduct an initial employee exposure assessment of whether employees are exposed to lead at or above the AL based on:

- Any information, observation, or calculation that indicates employee exposure to lead;
- Any previous measurements of airborne lead; and

- Any employee complaints of symptoms attributable to lead exposure.

Objective data and historical measurements of lead may be used to satisfy the standard's initial monitoring requirements.

Initial Exposure Assessment

Initial monitoring may be limited to a representative sample of those employees exposed to the greatest concentrations of airborne lead. Representative exposure sampling is permitted when there are a number of employees performing the same job, with lead exposure of similar duration and level, under essentially the same conditions. For employees engaged in similar work, the standard requires that the members of the group reasonably expected to have the highest exposure levels be monitored. This result is then attributed to the other employees of the group.

Celtic Commercial Painting, LLC. will establish and maintain an accurate record documenting the nature and relevancy of previous exposure data. Instead of performing initial monitoring, the employer may in some cases rely on objective data that demonstrate that a particular lead containing material or product cannot result in employee exposure at or above the action level when it is processed, used, or handled.

Biological Monitoring Tests

Analysis of blood lead samples must be conducted by an OSHA approved lab and be accurate (to a confidence level of 95 percent) within plus or minus 15 percent, or 6 µg/dl, whichever is greater. If an employee's airborne lead level is at or above the AL on any day, Celtic Commercial Painting, LLC. will make biological monitoring available on the following schedule:

- At least every two months for the first six months and every six months thereafter for employees exposed at or above the action level for more than 30 days annually;
- At least every two months for employees whose last blood sampling and analysis indicated a blood lead level at or above 40 µg/dl; and
- At least monthly while an employee is removed from exposure due an elevated blood lead level.

Pending Exposure Assessment

Until Celtic Commercial Painting, LLC. performs an exposure assessment and documents that employees are not exposed above the PEL, Celtic Commercial Painting, LLC. will requires some degree of interim protection for its employees. This means providing respiratory protection, protective work clothing and equipment, hygiene facilities, biological monitoring, and training – as specified by the standards – for certain tasks prone to produce high exposure. These tasks include:

- Manual demolition of structures such as dry wall, manual scraping, manual sanding, and use of a heat gun where lead containing coatings or paints are present;

- Power tool cleaning with or without local exhaust ventilation;
- Spray painting with lead-containing paint;
- Lead burning;
- Use of lead-containing mortar;
- Abrasive blasting, rivet busting, welding, cutting, or torchburning on any structure where lead-containing coatings or paint are present;
- Abrasive blasting enclosure movement and removal;
- Cleanup of activities where dry expendable abrasives are used; and
- Any other task Celtic Commercial Painting, LLC. believes may cause exposures in excess of the PEL.

Test Results Showing No Overexposure

If the initial assessment indicates that no employee is exposed above the AL, Celtic Commercial Painting, LLC. may discontinue monitoring. Further exposure testing is not required unless there is a change in processes or controls that may result in additional employees being exposed to lead at or above the AL, or may result in employees already exposed at or above the AL being exposed above the PEL.

Celtic Commercial Painting, LLC. must keep a written record of the determination, including the date, location within the work site, and the name and social security number of each monitored employee.

Notification of Monitoring Results

Celtic Commercial Painting, LLC. must notify each employee in writing of employee exposure assessment results within five working days of receiving them. Whenever the results indicate that the representative employee exposure, without the use of respirators, is above the PEL, Celtic Commercial Painting, LLC. must include a written notice stating that the employee's exposure exceeded the PEL and describing corrective action taken or to be taken to reduce exposure to or below the PEL.

Medical Surveillance

When an employee's airborne exposure is at or above the AL for more than 30 days in any consecutive 12 months, an immediate medical consultation must be made available when the employee notifies Celtic Commercial Painting, LLC. that he or she:

- Has developed signs or symptoms commonly associated with lead-related disease;
- Has demonstrated difficulty in breathing during respirator use or a fit test;
- Desires medical advice concerning the effects of past or current lead exposure on the employee's ability to have a healthy child; and
- Is under medical removal and has a medically appropriate need.

Medical Exams

The best indicator of personal lead exposure is through a blood test to indicate elevated blood lead levels. A medical exam must also include:

- Detailed work and medical histories, with particular attention to past lead exposure (occupational and nonoccupational), personal habits (smoking and hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive, and neurological problems;
- A thorough physical exam, with particular attention to gums, teeth, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems; evaluation of lung function if respirators are used;
- A blood pressure measurement;
- A blood sample and analysis to determine blood lead level;
    - Hemoglobin and hematocrit determinations, red cell indices, and an exam of peripheral smear morphology; and
    - Zinc protopor-phyrin; blood urea nitrogen; and serum creatinine;
- A routine urinalysis with microscopic exam; and
- Any lab or other test the examining physician deems necessary.

Information for Examining Physician

Celtic Commercial Painting, LLC. will provide all examining physicians with a copy of the lead in construction standard, including all appendices, a description of the affected employee's duties as they relate to the employee’s exposure, the employee's lead exposure level or anticipated exposure level, a description of personal protective equipment used or to be used, prior blood lead determinations, and all prior written medical opinions for the employee.

When Monitoring Shows Employee AL Over Limit

Celtic Commercial Painting, LLC. will make available, at no cost to the employee, initial medical surveillance for employees exposed to lead on the job at or above the action level on any one day per year. This initial medical surveillance consists of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporyrin (ZPP) levels. In addition, a medical surveillance program with biological monitoring must be made available to any employee exposed at or above the action level for more than 30 days in any consecutive 12 months.

After Medical Examination

Celtic Commercial Painting, LLC. must obtain and provide the employee a copy of a written opinion from each examining or consulting physician that contains only information related to occupational exposure to lead and must include:

- Whether the employee has any detected medical condition that would increase the health risk from lead exposure;

- Any special protective measures or limitations on the worker's exposure to lead,
- Any limitation on respirator use; and
- Results of the blood lead determinations.

In addition, the written statement may include a statement that the physician has informed the employee of the results of the consultation or medical examination and any medical condition that may require further examination or treatment.

Celtic Commercial Painting, LLC. must instruct the physician that findings, including lab results or diagnoses unrelated to the worker's lead exposure, must not be revealed to Celtic Commercial Painting, LLC. or included in the written opinion to Celtic Commercial Painting, LLC.. The employer must also instruct the physician to advise employees of any medical condition, occupational or non-occupational, that necessitates further evaluation or treatment. In addition, some states also require laboratories and health care providers to report cases of elevated blood lead concentrations to their state health departments.

Medical Removal Provisions

Temporary medical removal can result from an elevated blood level or a written medical opinion. More specifically, Celtic Commercial Painting, LLC. is required to remove from work an employee with a lead exposure at or above the AL each time periodic and follow-up (within two weeks of the periodic test) blood sampling tests indicate that the employee's blood level is at or above 50 µg/dl. Celtic Commercial Painting, LLC. also must remove from work an employee with lead exposure at or above the AL each time a final medical determination indicates that the employee needs reduced lead exposure for medical reasons. If the physician who is implementing the employer's medical program makes a final written opinion recommending the employee's removal or other special protective measures, Celtic Commercial Painting, LLC. must implement the physician's recommendation.

For an employee removed from exposure to lead at or above the AL due to a blood lead level at or above 50 µg/dl, the employer may return that employee to former job status when two consecutive blood sampling tests indicate that the employee's blood lead level is below 40 µg/dl. For an employee removed from exposure to lead due to a final medical determination, the employee must be returned when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition that places the employee at increased risk of lead exposure.

Celtic Commercial Painting, LLC. must remove any limitations placed on employees or end any special protective measures when a subsequent final medical determination indicates they are no longer necessary. If the former position no longer exists, the employee is returned consistent with whatever job assignment discretion Celtic Commercial Painting, LLC. would have had if no removal occurred.

Worker Protection and Benefits

Celtic Commercial Painting, LLC. must provide up to 18 months of medical removal protection

(MRP) benefits each time an employee is removed from lead exposure or medically limited. As long as the position/job exists, Celtic Commercial Painting, LLC. must maintain the earnings, seniority, and other employment rights and benefits as though the employee had not been removed from the job or otherwise medically limited. Celtic Commercial Painting, LLC. may condition medical removal protection benefits on the employee's participation in follow-up medical surveillance.

If a removed employee files a worker's compensation claim or other compensation for lost wages due to a lead-related disability, Celtic Commercial Painting, LLC. must continue medical removal protection benefits until the claim is resolved. However, the employer's MRP benefits obligation will be reduced by the amount that the employee receives from these sources. Also, the employer's MRP benefits obligation will be reduced by any income the employee receives from employment with another employer made possible by virtue of the employee's removal.

Records Requirement Regarding Medical Removal

In the case of medical removal, Celtic Commercial Painting, LLC.'s records must include:

- The worker's name and social security number,
- The date of each occasion that the worker was removed from current exposure to lead,
- The date when the worker was returned to the former job status, A brief explanation of how each removal was or is being accomplished, and A statement indicating whether the reason for the removal was an elevated blood lead level.

Recordkeeping Requirements

Celtic Commercial Painting, LLC. must maintain any employee exposure and medical records to document ongoing employee exposure, medical monitoring, and medical removal of workers. This data provides a baseline to evaluate the employee's health properly. Employees or former employees, their designated representatives, and OSHA must have access to exposure and medical records.

Exposure Assessment Records

Celtic Commercial Painting, LLC. must establish and maintain an accurate record of all monitoring and other data used to conduct employee exposure assessments as required. The exposure assessment records must include:

- The dates, number, duration, location, and results of each sample taken, including a description of the sampling procedure used to determine representative employee exposure;
- A description of the sampling and analytical methods used and evidence of their accuracy;
- The type of respiratory protection worn, if any;
- The name, social security number, and job classification of the monitored employee and all others whose exposure the measurement represents; and

- Environmental variables that could affect the measurement of employee exposure.

Medical Surveillance Records

Celtic Commercial Painting, LLC. must maintain an accurate record for each employee subject to medical surveillance, including:

- The name, social security number, and description of the employee's duties;
- A copy of the physician's written opinions;
- The results of any airborne exposure monitoring done for the employee and provided to the physician; and
- Any employee medical complaints related to lead exposure.

In addition, Celtic Commercial Painting, LLC. must keep or ensure that the examining physician keeps the following medical records:

- A copy of the medical examination results including medical and work history;
- A description of the laboratory procedures and a copy of any guidelines used to interpret the test results; and
- A copy of the results of biological monitoring.

Celtic Commercial Painting, LLC. or physician or both must maintain the medical records.

Documents for Employees Subject to Medical Removal

Celtic Commercial Painting, LLC. must maintain--for at least the duration of employment– an accurate record for each employee subject to medical removal, including:

- The name and social security number of the employee;
- The date on each occasion that the employee was removed from current exposure to lead and the corresponding date which the employee was returned to former job status;
- A brief explanation of how each removal was or is being accomplished; and
- A statement about each removal indicating whether the reason for removal was an elevated blood level.

Celtic Commercial Painting, LLC. Requirements Related to Objective Data

Celtic Commercial Painting, LLC. must establish and maintain an accurate record documenting the nature and relevancy of objective data relied on to assess initial employee exposure in lieu of exposure monitoring.

Celtic Commercial Painting, LLC. must maintain the record of objective data relied on for at least 30 years.

Documents for OSHA and NIOSH Review

Celtic Commercial Painting, LLC. must make all records--including exposure monitoring, objective data, medical removal, and medical records--available upon request to affected employees, former employees, and their designated representatives and to the OSHA Assistant Secretary and the Director of the National Institute for Occupational Safety and Health (NIOSH) for examination and copying in accordance with 29 CFR 1910.1020.

When Closing a Business

If Celtic Commercial Painting, LLC. ceases to do business, the successor employer must receive and retain all required records. If no successor is available, these records must be sent to the Director of NIOSH.

Exposure Reduction and Employee Protection

The most effective way to protect workers is to minimize their exposure through engineering controls, good work practices and training, and use of personal protective clothing and equipment, including respirators, where required.

Celtic Commercial Painting, LLC. will designate a competent person capable of identifying existing and predictable lead hazards and who is authorized to take prompt corrective measures to eliminate such problems. Celtic Commercial Painting, LLC. will, as needed, consult a qualified safety and health professional to develop and implement an effective worker protection program.

These professionals may work independently or may be associated with an insurance carrier, trade organization, or on-site consultation program.

Engineering Controls

Engineering measures include local and general exhaust ventilation, process and equipment modification, material substitution, component replacement, and isolation or automation. Examples of recommended engineering controls that can help reduce worker exposure to lead are described as follows.

Exhaust Ventilation

Equip power tools used to remove lead-based paint with dust collection shrouds or other attachments so that paint is exhausted through a high-efficiency particulate air (HEPA) vacuum system. For operations such as welding, cutting/burning, or heating, use local exhaust ventilation. Use HEPA vacuums during cleanup operations. For abrasive blasting operations, build a containment structure that is designed to optimize the flow of clean ventilation air past the workers' breathing zones. This will help reduce the exposure to airborne lead and increase visibility. Maintain the affected area under negative pressure to reduce the chances that lead dust will contaminate areas outside the enclosure. Equip the containment structure with an adequately sized dust collector to control emissions of particulate matter into the environment.

Enclosure or Encapsulation

One way to reduce the lead inhalation or ingestion hazard posed by lead-based paint is to encapsulate it with a material that bonds to the surface, such as acrylic or epoxy coating or flexible wall coverings. Another option is to enclose it using systems such as gypsum wallboard, plywood paneling, and aluminum, vinyl, or wood exterior siding. Floors coated with lead-based paint can be covered using vinyl tile or linoleum.

The building owner or other responsible person should oversee the custodial and maintenance staffs and contractors during all activities involving enclosed or encapsulated lead-based paint. This will minimize the potential for an inadvertent lead release during maintenance, renovation, or demolition.

Substitution

Choose materials and chemicals that do not contain lead for construction projects. Among the options are:

- Use zinc-containing primers covered by an epoxy intermediate coat and polyurethane topcoat instead of lead-containing coatings.
- Substitute mobile hydraulic shears for torch cutting under certain circumstances.
- Consider surface preparation equipment such as needle guns with multiple reciprocating needles completely enclosed within an adjustable shroud, instead of abrasive blasting under certain conditions. The shroud captures dust and debris at the cutting edge and can be equipped with a HEPA vacuum filtration with a self-drumming feature. One such commercial unit can remove lead-based paint from flat steel and concrete surfaces, outside edges, inside corners, and pipes.
- Choose chemical strippers in lieu of hand scraping with a heat gun for work on building exteriors, surfaces involving carvings or molding, or intricate iron work. Chemical removal generates less airborne lead dust. (Be aware, however, that these strippers themselves can be hazardous and that the employer must review the material safety data sheets (MSDSs) for these stripping agents to obtain information on their hazards.)

Component Replacement

Replace lead-based painted building components such as windows, doors, and trim with new components free of lead-containing paint. Another option is to remove the paint off site and then repaint the components with zinc-based paint before replacing them.

Process or Equipment Modification

When applying lead paints or other lead-containing coatings, use a brush or roller rather than a sprayer. This application method introduces little or no paint mist into the air to present a lead inhalation hazard. (Note that there is a ban on the use of lead-based paint in residential housing.)

Use non-silica-containing abrasives such as steel or iron shot/grit sand instead of sand in abrasive

blasting operations when practical. The free silica portion of the dust presents a respiratory health hazard.

When appropriate for the conditions, choose blasting techniques that are less dusty than open-air abrasive blasting. These include hydro- or wet-blasting using high-pressure water with or without an abrasive or surrounding the blast nozzle with a ring of water, and vacuum blasting where a vacuum hood for material removal is positioned around the exterior of the blasting nozzle.

When using a heat gun to remove lead-based paints in residential housing units, be sure it is of the flameless electrical softener type. Heat guns should have electronically controlled temperature settings to allow usage below 700 °F. Equip heat guns with various nozzles to cover all common applications and to limit the size of the heated work area.

When using abrasive blasting with a vacuum hood on exterior building surfaces, ensure that the configuration of the heads on the blasting nozzle match the configuration of the substrate so that the vacuum is effective in containing debris.

Ensure that HEPA vacuum cleaners have the appropriate attachments for use on unusual surfaces. Proper use of brushes of various sizes, crevice and angular tools, when needed, will enhance the quality of the HEPA-vacuuming process and help reduce the amount of lead dust released into the air.

Isolation

Although it is not feasible to enclose and ventilate some abrasive blasting operations completely, it is possible to isolate many operations to help reduce the potential for lead exposure. Isolation consists of keeping employees not involved in the blasting operations as far away from the work area as possible, reducing the risk of exposure.

Housekeeping and Personal Hygiene

Lead is a cumulative and persistent toxic substance that poses a serious health risk. A rigorous housekeeping program and the observance of basic personal hygiene practices will minimize employee exposure to lead. In addition, these two elements of the worker protection program help prevent workers from taking lead contaminated dust out of the worksite and into their homes where it can extend the workers' exposures and potentially affect their families' health.

Housekeeping Practices

An effective housekeeping program involves a regular schedule to remove accumulations of lead dust and lead-containing debris. The schedule should be adapted to exposure conditions at a particular worksite. Celtic Commercial Painting, LLC.'s goal is to maintain all surfaces as free of lead contamination as practicable. Vacuuming lead dust with HEPA-filtered equipment or wetting the dust with water before sweeping are effective control measures. Compressed air may not be used to remove lead from contaminated surfaces unless a ventilation system is in place to capture the dust generated by the compressed air.

In addition, put all lead-containing debris and contaminated items accumulated for disposal into sealed, impermeable bags or other closed impermeable containers. Label bags and containers as lead-containing waste. These measures provide additional help in controlling exposure.

Personal Hygiene Practices

Celtic Commercial Painting, LLC. Emphasizes workers' personal hygiene such as washing their hands and face after work and before eating to minimize their exposure to lead. Provide and ensure that workers use washing facilities. Provide clean change areas and readily accessible eating areas. If possible, provide a parking area where cars will not be contaminated with lead. These measures:

- Reduce workers' exposure to lead and the likelihood that they will ingest lead,
- Ensure that the exposure does not extend beyond the worksite,
- Reduce the movement of lead from the worksite, and
- Provide added protection to employees and their families.

Change Areas

Celtic Commercial Painting, LLC. must provide a clean change area for employees whose airborne exposure to lead is above the PEL. The area must be equipped with storage facilities for street clothes and a separate area with facilities for the removal and storage of lead-contaminated protective work clothing and equipment. This separation prevents cross-contamination of the employee's street and work clothing.

Employees must use a clean change area for taking off street clothes, suiting up in clean protective work clothing, donning respirators before beginning work, and dressing in street clothes after work. No lead-contaminated items should enter this area.

Work clothing must not be worn away from the jobsite. Under no circumstances should lead-contaminated work clothes be laundered at home or taken from the worksite, except to be laundered professionally or for disposal following applicable federal, state, and local regulations.

Showers and Washing Facilities

When feasible, showers must be provided for use by employees whose airborne exposure to lead is above the permissible exposure limit so they can shower before leaving the worksite. Where showers are provided, employees must change out of their work clothes and shower before changing into their street clothes and leaving the worksite. If employees do not change into clean clothing before leaving the worksite, they may contaminate their homes and automobiles with lead dust, extending their exposure and exposing other members of their household to lead.

In addition, Celtic Commercial Painting, LLC. will provide adequate washing facilities for their workers. These facilities must be close to the worksite and furnished with water, soap, and clean towels so employees can remove lead contamination from their skin.

Contaminated water from washing facilities and showers must be disposed of in accordance with applicable local, state, or federal regulations.

Personal Practices

Celtic Commercial Painting, LLC. must ensure that employees do not enter lunchroom facilities or eating areas with protective work clothing or equipment unless surface lead dust has been removed. HEPA vacuuming and use of a downdraft booth are examples of cleaning methods that limit the dispersion of lead dust from contaminated work clothing.

In all areas where employees are exposed to lead above the PEL, employees must observe the prohibition on the presence and consumption or use of food, beverages, tobacco products, and cosmetics. Employees whose airborne exposure to lead is above the PEL must wash their hands and face before eating, drinking, smoking, or applying cosmetics.

End of Day Procedures

Celtic Commercial Painting, LLC. will ensure that workers who are exposed to lead above the permissible exposure limit follow these procedures at the end of their workday:

- Place contaminated clothes, including work shoes and personal protective equipment to be cleaned, laundered, or disposed of, in a properly labeled closed container.
- Take a shower and wash their hair. Where showers are not provided, employees must wash their hands and face at the end of the work shift.
- Change into street clothes in clean change areas.

Protective Clothing and Equipment

Celtic Commercial Painting, LLC. will provide workers who are exposed to lead above the PEL or for whom the possibility of skin or eye irritation exists with clean, dry protective work clothing and equipment that are appropriate for the hazard. Celtic Commercial Painting, LLC. will provide these items at no cost to employees. Appropriate protective work clothing and equipment used on construction sites includes:

- Coveralls or other full-body work clothing;
- Gloves, hats, and shoes or disposable shoe coverlets;
- Vented goggles or face shields with protective spectacles or goggles;
- Welding or abrasive blasting helmets; and
- Respirators.

Clean work clothing must be issued daily for employees whose exposure levels to lead are above 200 µg/m3, weekly if exposures are above the PEL but at or below 200 µg/m3 or where the possibility of skin or eye irritation exists.

Handling Contaminated Clothing

Workers must not be allowed to leave the worksite wearing lead contaminated protective clothing or equipment. This is an essential step in reducing the movement of lead contamination from the workplace into the worker's home and provides added protection for employees and their families.

Disposable coveralls and separate shoe covers may be used, if appropriate, to avoid the need for laundering. Workers must remove protective clothing in change rooms provided for that purpose.

Celtic Commercial Painting, LLC. will ensure that employees leave the respirator use area to wash their faces and respirator facepieces as necessary. In addition, employers may require their employees to use HEPA vacuuming, damp wiping, or another suitable cleaning method before removing a respirator to clear loose particle contamination on the respirator and at the face-mask seal.

Place contaminated clothing that is to be cleaned, laundered, or disposed of by the Celtic Commercial Painting, LLC. in closed containers. Label containers with the warning: "Caution: Clothing contaminated with lead. Do not remove dust by blowing or shaking.

Dispose of lead-contaminated wash water in accordance with applicable local, state, or federal regulations."

Workers responsible for handling contaminated clothing, including those in laundry services or subcontractors, must be informed in writing of the potential health hazard of lead exposure.

At no time shall lead be removed from protective clothing or equipment by brushing, shaking, or blowing. These actions disperse the lead into the work area.

Preventing Heat Stress from Protective Clothing

Workers wearing protective clothing, particularly in hot environments or within containment structures, can face a risk from heat stress if proper control measures are not used.

Heat stress is caused by several interacting factors, including environmental conditions, type of protective clothing worn, the work activity required and anticipated work rate, and individual employee characteristics such as age, weight, and fitness level.

When heat stress is a concern, Celtic Commercial Painting, LLC. should choose lighter, less insulating protective clothing over heavier clothing, as long as it provides adequate protection. Other measures Celtic Commercial Painting, LLC. may take include:

- Discussing the possibility of heat stress and its signs and symptoms with all workers;
- Using appropriate work/rest regimens; and
- Providing heat stress monitoring that includes measuring employees' heart rates, body temperatures, and weight loss.

Celtic Commercial Painting, LLC. will provide a source of water or electrolyte drink in a non-contaminated eating and drinking area close to the work area so workers can drink often throughout the day. Workers must wash their hands and face before drinking any fluid if their airborne exposure is above the PEL.

Respiratory Protection

Although engineering and work practice controls are the primary means of protecting workers from exposure to lead, source control at construction sites sometimes is insufficient to control exposure.

In these cases, airborne lead concentrations may be high or may vary widely. Respirators often must be used to supplement engineering controls and work practices to reduce worker lead exposures below the PEL. When respirators are required, Celtic Commercial Painting, LLC. will provide them at no cost to workers.

The standard requires that respirators be used during periods when an employee's exposure to lead exceeds the PEL, including:

- Periods necessary to install or implement engineering or work practice controls, and
- Work operations for which engineering and work practice controls are insufficient to reduce employee exposures to or below the PEL.

Respirators also will be provided upon employee request. A requested respirator is included as a requirement to provide increased protection for those employees who wish to reduce their lead burden below what is required by the standard, particularly if they intend to have children in the near future. In addition, respirators must be used when performing previously indicated high exposure or "trigger" tasks, before completion of the initial assessment.

Providing Adequate Respiratory Protection

Before any employee first starts wearing a respirator in the work environment, the employer must perform a fit test. For all employees wearing negative or positive pressure tight-fitting facepiece respirators, the employer must perform either qualitative or quantitative fit tests using an OSHA-accepted fit testing protocol.

In addition, employees must be fit tested whenever a different respirator facepiece is used, and at least annually thereafter. Where daily airborne exposure to lead exceeds 50 µg/m3, affected workers must don respirators before entering the work area and should not remove them until they leave the high-exposure area or have completed a decontamination procedure.

Celtic Commercial Painting, LLC. will assure that the respirator issued to the employee is selected and fitted properly to ensure minimum leakage through the facepiece-to-face seal.

Respiratory Protection Programs

When respirators are required at a worksite, Celtic Commercial Painting, LLC. refers to the respiratory protection program chapter in this manual. At a minimum, the respirator program includes:

- Procedures for selecting respirators appropriate to the hazard;
- Fit testing procedures;
- Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations, including cartridge change schedules;
- Procedures and schedules for cleaning, disinfecting, storing inspecting, repairing, discarding, and otherwise maintaining respirators;
- Training of employees in the respiratory hazard to which they are potentially exposed during routine and emergency situations;
- Training of employees in the proper use of respirators, including putting on and removing them, any limitations of their use, and their maintenance;
- Procedures for regularly evaluating the effectiveness of the program;
- Procedures to ensure air quality when supplied air is used;
- A program and designation of a program administrator; and
- Recordkeeping procedures.

In addition, the construction industry lead standard stipulates medical evaluations of employees required to use respirators.

If an employee has difficulty in breathing during a fit test or while using a respirator, the employer must make a medical examination available to that employee to determine whether he or she can wear a respirator safely.

Selecting a Respirator

Celtic Commercial Painting, LLC. must select the appropriate respirator from Table 1 of the lead standard, 29 CFR 1926.62(f)(3)(i). Celtic Commercial Painting, LLC. must provide a powered air-purifying respirator when an employee chooses to use this respirator and it will provide the employee adequate protection. A NIOSH-certified respirator must be selected and used in compliance with the conditions of its certification.

In addition, if exposure monitoring or experience indicates airborne exposures to contaminants other than lead such as silica, solvents, or polyurethane coatings, these exposures must be considered when selecting respiratory protection.

Select type CE respirators approved by NIOSH for abrasive blasting operations. Currently, there are two kinds of CE respirators with the following assigned protection factors (APFs): a continuous-flow respirator with a loose-fitting hood, APF 25; and a full facepiece supplied-air respirator operated in a positive-pressure mode, APF 2,000.

For any airline respirator, it is required to follow the manufacturer’s instructions regarding air

quality, air pressure, and inside diameter and length of hoses. Be aware that using longer hoses or smaller inside diameter hoses than the manufacturer specifies or hoses with bends or kinks may reduce or restrict the airflow to a respirator.

Employee Information and Training

Celtic Commercial Painting, LLC. must inform employees about lead hazards according to the requirement of OSHA's Hazard Communication standard for the construction industry, 29 CFR 1926.59, including-- but not limited to--the requirements for warning signs and labels, safety data sheets (SDSs), and employee information and training. Said hazard communication is discussed in the chapter for hazard communication.

Program Requirements

Celtic Commercial Painting, LLC. will provide an information and training program and ensure that all employees subject to exposure to lead or lead compounds at or above the action level on any day participate. Also covered under information and training are employees who may suffer skin or eye irritation from lead compounds. Initial training must be provided before the initial job assignment. Training must be repeated at least annually and, in brief summary, must include:

- The content of the OSHA lead standard and its appendices;
- The specific nature of operations that could lead to lead exposure above the action level;
- The purpose, proper selection, fit, use, and limitations of respirators;
- The purpose and a description of the medical surveillance program, and the medical removal protection program;
- Information concerning the adverse health effects associated with excessive lead exposure;
- The engineering and work practice controls associated with employees' job assignments;
- The contents of any lead-related compliance plan in effect;
- Instructions to employees that chelating agents must not be used routinely to remove lead from their bodies and when necessary only under medical supervision and at the direction of a licensed physician; and
- The right to access records under "Access to Employee Exposure and Medical Records," 29 CFR 1910.1020.

All materials relating to the training program and a copy of the standard and its appendices must be made readily available to all affected employees.

Warning Signs

Celtic Commercial Painting, LLC. will post these warning signs in each work area where employee exposure to lead is above the PEL:

> DANGER
> LEAD WORK AREA
> MAY DAMAGE FERTILITY OR THE UNBORN CHILD

CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

All signs must be well lit and kept clean so that they are easily visible. Statements that contradict or detract from the signs' meaning are prohibited. Signs required by other statutes, regulations, or ordinances, however, may be posted in addition to, or in combination with, this sign.

Silica

Introduction

Crystalline silica is an important industrial material found abundantly in the earth's crust. Quartz, the most common form of silica, is a component of sand, stone, rock, concrete, brick, block, and mortar. Materials containing quartz are found in a wide variety of workplaces.

Industries and operations in which exposure to crystalline silica can occur include, but are not limited to:

- Construction,
- Glass products,
- Pottery products,
- Structural clay products,
- Concrete products,
- Foundries,
- Dental laboratories,
- Paintings and coatings,
- Jewelry production,
- Refractory products,
- Ready-mix concrete,
- Cut stone and stone products,
- Refractory installation and repair,
- Railroad track maintenance,
- Hydraulic fracturing for gas and oil, and
- Abrasive blasting in Maritime work, Construction, and General Industry.

Health Effects

Silica dust is hazardous when very small (respirable) particles are inhaled. These respirable dust particles can penetrate deep into the lungs and cause disabling and sometimes fatal lung diseases, including silicosis and lung cancer, as well as kidney disease.

Occupational exposure to respirable crystalline silica occurs when cutting, sawing, drilling, grinding, crushing, and abrasive blasting of concrete, brick, ceramic tiles, rock, and stone products. Occupational exposure also occurs in operations that process or use large quantities of sand, such as foundries and the glass, pottery, and concrete products industries. OSHA estimates that more than 2.3 million workers in the United States are potentially exposed to dust containing crystalline silica with nearly 90% of those workers employed in the construction industry.

Scope and Application

This program applies to all occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air

(25 µg/m^3) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

Specified Exposure Control Methods

1. For each employee engaged in a task identified on Table 1 of the Silica standard, a copy of which is provided below as Table 15, Celtic Commercial Painting, LLC. shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task in Table 15, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with the section of this program titled "Alternative Exposure Control Methods."

2. When implementing the control measures specified in Table 15, Celtic Commercial Painting, LLC. shall:

    - For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust.
    - For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust.
    - For measures implemented that include an enclosed cab or booth, ensure the enclosed cab or booth:
        a. Is maintained as free as practicable from settled dust,
        b. Has door seals and closing mechanisms that work properly,
        c. Has gaskets and seals that are in good condition and working properly,
        d. Is under positive pressure maintained through continuous delivery of fresh air,
        e. Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 µm range (*e.g.*, MERV-16 or better), and
        f. Has heating and cooling capabilities.

3. Where an employee performs more than one task on Table 15 during the course of a shift and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 15 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

Alternative Exposure Control Methods

For tasks not listed in Table 15, or where Celtic Commercial Painting, LLC. does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 15:

Permissible Exposure Limit (PEL)

No employee shall be exposed to an airborne concentration of respirable crystalline silica in excess of 50 µg/m3, calculated as an 8-hour TWA.

Exposure Assessment

The exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level shall be assessed in accordance with either the performance option or the scheduled monitoring option as described below.

Performance Option

The 8-hour TWA exposure for each employee shall be assessed on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

Scheduled Monitoring Option

- Initial monitoring shall be performed to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each shift for each job classification in each work area. Where several employees perform the same tasks on the same shift and in the same work area, a representative fraction of these employees may be sampled in order to meet this requirement. In representative sampling, the employee(s) who are expected to have the highest exposure to respirable crystalline silica shall be sampled.
- If initial monitoring indicates that employee exposures are below the action level, monitoring may be discontinued for those employees whose exposures are represented by such monitoring.
- Where the most recent exposure monitoring indicates that employee exposures are at or above the action level, but at or below the PEL, such monitoring shall be repeated within six months of the most recent monitoring.
- Where the most recent exposure monitoring indicates that employee exposures are above the PEL, such monitoring shall be repeated within three months of the most recent monitoring.
- Where the most recent (noninitial) exposure monitoring indicates employee exposures are below the action level, such monitoring shall be repeated within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time monitoring may be discontinued for those employees whose exposures are represented by such monitoring, except that exposure shall be reassessed when there is a change in the production, process, control equipment, personnel, or work practices that may reasonably be expected to result in new or additional exposures at or above the action level, or when there is any reason to believe that new or additional exposures at or above the action level have occurred.

Methods of Sample Analysis

Celtic Commercial Painting, LLC. shall ensure all samples taken are evaluated by a laboratory that analyzes air samples for respirable crystalline silica in accordance with the procedures in Appendix 2 of this program.

Employee Notification of Assessment Results

- Within five working days after completing an exposure assessment, each affected employee shall be individually notified in writing of the results of that assessment, or the results shall be posted in an appropriate location accessible to all affected employees.
- Whenever an exposure assessment indicates employee exposure is above the PEL, the written notification shall include a description of the corrective action being taken to reduce employee exposure to or below the PEL.

Observation of Monitoring

- Where air monitoring is performed, affected employees or their designated representatives shall be provided an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.
- When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the observer shall be provided with protective clothing and equipment at no cost and use such clothing and equipment.

Methods of Compliance

Engineering and Work Practice Controls

Celtic Commercial Painting, LLC. shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless it can be demonstrated that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, they shall nonetheless be used to reduce employee exposure to the lowest feasible level and be supplemented with respiratory protection that complies with the requirements of this program and the Celtic Commercial Painting, LLC.

Respiratory Protection Program.

Abrasive Blasting

In addition to the above requirement, the employer shall comply with other OSHA standards, when applicable, such as 29 CFR 1926.57 (Ventilation), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

Respiratory Protection

Where respiratory protection is required by this program, each employee must be provided an appropriate respirator that complies with the requirements of this program, the Celtic Commercial Painting, LLC.

Respiratory Protection Program, and 29 CFR 1910.134. Respiratory protection is required:

- Where specified by Table 15 this program; or
- For tasks not listed in Table 15, or where the engineering controls, work practices, and respiratory protection described in Table 15 are not fully and properly implemented:
    - Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls;
    - Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and
    - During tasks for which all feasible engineering and work practice controls have been implemented, and such controls are not sufficient to reduce exposures to or below the PEL.

Respiratory Protection Program

Where respirator use is required by this program, the Celtic Commercial Painting, LLC.

Respiratory Protection Program shall be fully implemented.

Specified Exposure Control Methods

For the tasks listed in Table 15 of this program, if the engineering controls, work practices, and respiratory protection described in Table 15 are fully and properly implemented, Celtic Commercial Painting, LLC. shall be considered to be in compliance with the respiratory protection requirements of this program, and the requirements for selection of respirators in 29 CFR 1910.134(d)(1)(iii) and (d)(3) with regard to exposure to respirable crystalline silica.

Housekeeping

1. Dry sweeping or dry brushing, where such activity could contribute to employee exposure to respirable crystalline silica, is not allowed, unless wet sweeping, HEPA-filtered vacuuming, or other methods that minimize the likelihood of exposure are not feasible.

2. Compressed air used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica is not allowed unless:

    - The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
    - No alternative method is feasible.

Written Exposure Control Plan

1. Celtic Commercial Painting, LLC. shall establish and implement a written exposure control plan that contains at least the following elements:

    - A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
    - A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
    - A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
    - A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.

2. The effectiveness of the written exposure control plan shall be reviewed and evaluated at least annually and updated as necessary.

3. The written exposure control plan shall be made readily available for examination and copying, upon request, to each employee covered by this program, their designated

representatives, the Assistant Secretary and the Director.

4. A competent person shall be designated to make frequent and regular inspections of jobsites, materials, and equipment to implement the written exposure control plan.

Medical Surveillance

General

- Medical surveillance shall be made available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this program to use a respirator for 30 or more days per year.
- All medical examinations and procedures required by this section shall be performed by a PLHCP as defined in this program (see Definitions).

Initial Examination

An initial (baseline) medical examination shall be made available within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this program within the last three years. The examination shall consist of:

- A medical and work history, with emphasis on: past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history;
- A physical examination, with special emphasis on the respiratory system;
- A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film [no less than 14x17 inches and no more than 16x17 inches] or digital radiography systems), interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconioses by a NIOSH-certified B Reader;
- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH approved spirometry course;
- Testing for latent tuberculosis infection; and
- Any other tests deemed appropriate by the PLHCP.

Periodic Examinations

Medical examinations that include the procedures described above (except testing for latent TB) shall be made available at least every three years, or more frequently if recommended by the PLHCP.

Information Provided to the PLHCP

Celtic Commercial Painting, LLC. shall ensure the examining PLHCP has a copy of this standard and provide the PLHCP with the following information:

- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;
- The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;
- A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and
- Information from records of employment-related medical examinations previously provided to the employee and currently within the control of Celtic Commercial Painting, LLC..

PLHCP's Written Medical Report for the Employee

Celtic Commercial Painting, LLC. shall ensure the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:

- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;
- Any recommended limitations on the employee's use of respirators;
- Any recommended limitations on the employee's exposure to respirable crystalline silica; and
- A statement that the employee should be examined by a specialist (see Additional Examinations) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

PLHCP's Written Medical Opinion for Celtic Commercial Painting, LLC.

- A written medical opinion shall be obtained from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:
    - The date of the examination,
    - A statement that the examination has met the requirements of this program, and
    - Any recommended limitations on the employee's use of respirators.
- If the employee provides written authorization, the written opinion shall also contain either or both of the following:
    - Any recommended limitations on the employee's exposure to respirable crystalline silica;
    - A statement that the employee should be examined by a specialist (see Additional Examinations) if the chest X-ray provided in accordance with this section is

classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

- Each employee will receive a copy of the written medical opinion described above within 30 days of each medical examination performed.

Additional Examinations

- If the PLHCP's written medical opinion indicates an employee should be examined by a specialist, a medical examination by a specialist shall be made available within 30 days after receiving the PLHCP's written opinion.
- The examining specialist shall be provided with all of the information listed in the Information Provided to the PLHCP section above.
- Celtic Commercial Painting, LLC. shall ensure the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report shall contain the following:
    - A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;
    - Any recommended limitations on the employee's use of respirators;
    - Any recommended limitations on the employee's exposure to respirable crystalline silica.
- A written opinion shall be obtained from the specialist within 30 days of the medical examination. The written opinion shall contain:
    - A written medical opinion shall be obtained from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:
        - The date of the examination and
        - Any recommended limitations on the employee's use of respirators.
    - If the employee provides written authorization, the written opinion shall also contain either or both of the following:
        - Any recommended limitations on the employee's exposure to respirable crystalline silica;
        - A statement that the employee should be examined by a specialist (pursuant to the Additional Examinations section) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.
    - Each employee will receive a copy of the written medical opinion described above within 30 days of each medical examination performed.

Communication of Respirable Crystalline Silica Hazards to Employees

Hazard Communication

Respirable crystalline silica shall be included in the Hazard Communication program. Celtic Commercial Painting, LLC. shall ensure each employee has access to labels on containers of

crystalline silica and safety data sheets and is trained in accordance with the Hazard Communication program and this program. The training shall include at least the following hazards:

- Cancer,
- Lung effects,
- Immune system effects, and
- Kidney effects.

Employee Information and Training

- Each employee covered by this section shall be able to demonstrate knowledge and understanding of at least the following:
    - The health hazards associated with exposure to respirable crystalline silica;
    - Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
    - Specific measures that have been implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
    - The contents of this program;
    - The identity of the competent person designated by the employer to make frequent and regular inspections of jobsites, materials, and equipment to implement the written exposure control plan; and
    - The purpose and a description of the medical surveillance program.
- This program is readily available without cost to each employee covered by this program.

Recordkeeping

Air Monitoring Data

- An accurate record of all exposure measurements taken shall be made and maintained to assess employee exposure to respirable crystalline silica in accordance with this program.
- This record shall include at least the following information:
    - The date of measurement for each sample taken;
    - The task monitored;
    - Sampling and analytical methods used;
    - Number, duration, and results of samples taken;
    - Identity of the laboratory that performed the analysis;
    - Type of personal protective equipment, such as respirators, worn by the employees monitored; and
    - Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.
- Exposure records shall be maintained and made available in accordance with 29 CFR 1910.1020.

Objective Data

- An accurate record of all objective data relied upon to comply with this program shall be made and maintained.
- This record shall include at least the following information:
    - The crystalline silica-containing material in question;
    - The source of the objective data;
    - The testing protocol and results of testing;
    - A description of the process, task, or activity on which the objective data were based; and
    - Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.
- Objective data shall be maintained and made available in accordance with 29 CFR 1910.1020.

Medical Surveillance

- An accurate record for each employee covered by medical surveillance under this program shall be made and maintained.
- The record shall include the following information about the employee:
    - Name and social security number,
    - A copy of the PLHCPs' and specialists' written medical opinions, and
    - A copy of the information provided to the PLHCPs and specialists.
- Medical records shall be maintained and made available in accordance with 29 CFR 1910.1020.

Table 15 – Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
(i) Stationary Masonry Saws	• Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(ii) Handheld Power Saws (any blade diameter)	• Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: ○ When used outdoors: ○ When used indoors or in an enclosed area:	 None APF 10	 APF 10 APF 10
(iii) Handheld Power Saws for Cutting Fiber-Cement Board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: • Use saw equipped with commercially available dust collection system. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None	None
(iv) Walk-Behind Saws	• Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions: ○ When used outdoors: ○ When used indoors or in an enclosed area:	 None APF 10	 None APF 10

(v) Drivable Saws	For tasks performed outdoors only: • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(vi) Rig-Mounted Core Saws or Drills	• Use tool equipped with integrated water delivery system that supplies water to cutting surface. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(vii) Handheld and Stand-Mounted Drills (including impact and rotary hammer drills)	• Use drill equipped with commercially available shroud or cowling with dust collection system. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. • Use a HEPA-filtered vacuum when cleaning holes.	None	None
(viii) Dowel Drilling Rigs for Concrete	For tasks performed outdoors only: • Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter cleaning mechanism. • Use a HEPA-filtered vacuum when cleaning holes.	APF 10	APF 10
(ix) Vehicle-Mounted Drilling Rigs for Rock and Concrete	• Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. **OR** • Operate from within an enclosed cab and use water for dust suppression on drill bit.	None None	None None

(x) Jackhammers and Handheld Powered Chipping Tools	• Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:
	  ○ When used outdoors:
	  ○ When used indoors or in an enclosed area:
	OR
	• Use tool equipped with commercially available shroud and dust collection system.
	• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.
	• Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:
	  ○ When used outdoors:
	  ○ When used indoors or in an enclosed area:
		None
		
		APF 10
		
		None
		
		APF 10
			APF 10
			
			APF 10
			
			APF 10
			
			APF 10

(xi) Handheld Grinders for Mortar Removal (i.e., tuckpointing)	• Use grinder equipped with commercially available shroud and dust collection system. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.	APF 10	APF 25

(xii) Handheld Grinders for Uses Other Than Mortar Removal	For tasks performed outdoors only: • Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. **OR** • Use grinder equipped with commercially available shroud and dust collection system. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism: ○ When used outdoors: ○ When used indoors or in an enclosed area:	None None	None None APF 10
(xiii) Walk-Behind Milling Machines and Floor Grinders	• Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. **OR** • Use machine equipped with dust collection system recommended by the manufacturer. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. • When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None None	None None

(xiv) Small Drivable Milling Machines (less than half-lane)	• Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. • Operate and maintain machine to minimize dust emissions.	None	None
(xv) Large Drivable Milling Machines (half-lane and larger)	For cuts of any depth on asphalt only: • Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. • Operate and maintain machine to minimize dust emissions.	None	None
	For cuts of four inches in depth or less on any substrate: • Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. • Operate and maintain machine to minimize dust emissions.	None	None
	OR		
	• Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. • Operate and maintain machine to minimize dust emissions.	None	None
(xvi) Crushing Machines	• Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). • Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. • Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.	None	None

(xvii) Heavy Equipment and Utility Vehicles Used to Abrade or Fracture Silica-Containing Materials (e.g., hoe-ramming, rock ripping) or Used During Demolition Activities Involving Silica-Containing Materials	• Operate equipment from within an enclosed cab.	None	None
	• When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
(xviii) Heavy Equipment and Utility Vehicles for Tasks, Such as Grading and Excavating, But Not Including Demolishing, Abrading, or Fracturing Silica-Containing Materials	• Apply water and/or dust suppressants as necessary to minimize dust emissions. **OR**	None	None
	• When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None

Definitions

Action level means a concentration of airborne respirable crystalline silica of 25 μg/m^3, calculated as an 8-hour TWA.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Competent person means an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in the Written Exposure Control Plan section of this program.

Employee exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

High-efficiency particulate air (HEPA) filter means a filter that is at least 99.97 percent efficient in removing monodispersed particles of 0.3 micrometers in diameter.

Objective data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the particular health care services required by the Medical Surveillance section of this program.

Respirable crystalline silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality-Particle Size Fraction Definitions for Health-Related Sampling.

Specialist means an American Board Certified Specialist in Pulmonary Disease or an American Board Certified Specialist in Occupational Medicine.

Appendix 2 – Procedures for Analyzing Air Samples for Respirable Crystalline Silica

This appendix specifies the procedures for analyzing air samples for respirable crystalline silica, as well as the quality control procedures that employers must ensure that laboratories use when performing an analysis required under 29 CFR 1926.1153 (d)(2)(v). Employers must ensure that such a laboratory:

1. Evaluates all samples using the procedures specified in one of the following analytical methods: OSHA ID-142; NMAM 7500; NMAM 7602; NMAM 7603; MSHA P-2; or MSHA P-7;
2. Is accredited to ANS/ISO/IEC Standard 17025:2005 with respect to crystalline silica analyses by a body that is compliant with ISO/IEC Standard 17011:2004 for implementation of quality assessment programs;
3. Uses the most current National Institute of Standards and Technology (NIST) or NIST traceable standards for instrument calibration or instrument calibration verification;
4. Implements an internal quality control (QC) program that evaluates analytical uncertainty and provides employers with estimates of sampling and analytical error;
5. Characterizes the sample material by identifying polymorphs of respirable crystalline silica present, identifies the presence of any interfering compounds that might affect the analysis, and makes any corrections necessary in order to obtain accurate sample analysis; and
6. Analyzes quantitatively for crystalline silica only after confirming that the sample matrix is free of uncorrectable analytical interferences, corrects for analytical interferences, and uses a method that meets the following performance specifications:
    A. Each day that samples are analyzed, performs instrument calibration checks with standards that bracket the sample concentrations;
    B. Uses five or more calibration standard levels to prepare calibration curves and ensures that standards are distributed through the calibration range in a manner that accurately reflects the underlying calibration curve; and
    C. Optimizes methods and instruments to obtain a quantitative limit of detection that represents a value no higher than 25 percent of the PEL based on sample air volume.

Environmental

Introduction

Celtic Commercial Painting, LLC. is committed to complying with the appropriate and relevant environmental laws and standards such that its operations are conducted in an environmentally responsible manner. As such, we are committed to preventing pollution and to the continual improvement of its environmental programs.

Furthermore, the environmental policy of Celtic Commercial Painting, LLC. assures compliance with all applicable environmental laws and regulations imposed by federal, state, and local governments.

Company Goals

The Celtic Commercial Painting, LLC. goal is to:

- Regularly evaluate the aspects of its operations and the impacts of these activities on the environment
- Strives to improve all of its operations in regard to their environmental performance
- Reviews with management its environmental activities and progress towards meeting any defined goals and targets
- Educates and trains those who work on behalf of the organization, such as employees, contractors, and vendors, to work in an environmentally responsible manner whenever it is possible and convenient.
- Promotes this statement and makes it available to the public and to all who work on behalf of the company

Each year, Celtic Commercial Painting, LLC. (a) evaluates its impacts on the environment, (b) identifies those areas of impact over which the company has sufficient control, and (c) establishes goals and objectives in those areas to reduce the company's environmental impacts.

Company Actions

Celtic Commercial Painting, LLC. has set forth this environmental policy to properly handle, and be in compliance with, applicable regulations regarding the following:

Air Quality

Fumes, Odors, and Smoke

Engines, asphalt heaters, paints, fuels, fires, chemicals, and many other construction site sources create fumes, odors, and smoke that affect the air quality of the area. These pollutants can be dangerous to the health of construction personnel, as well as to other people and to plant and animal life. The level of noxious fumes, odors, and smoke shall be minimized or eliminated where possible. The use of efficient equipment, adherence to established operating procedures,

and maintenance of proper engine adjustment shall be done to reduce exhaust emissions. Engines shall not be left idling needlessly.

Celtic Commercial Painting, LLC. will consider for each job potential air pollutant emissions, including, but not limited to, vehicle and other combustion equipment exhaust, dust generating activities, organic vapor generating activities (surface coating, parts cleaning, vehicle refueling and fuel storage, etc.), toxic emissions (asbestos, benzene, radionuclides, etc.), and odor-causing activities (roofing, asphalt paving, etc.). The consideration shall contain some indication of the magnitude of such emissions, such as the number of vehicles, gallons of solvent to be used, surface area of exposed soil which may generate dust, amount of asbestos to be removed, etc. A brief discussion of how applicable regulations related to these compounds, if any exist, will be met and how emissions from each of these sources will be minimized shall occur. Celtic Commercial Painting, LLC. shall address the following regulatory requirements during its consideration of each job and ensure that compliance is met.

1. All vehicles and construction equipment shall be built and maintained to remain in compliance with applicable EPA (state and federal) standards.
2. Any degreaser used at the construction site shall comply with applicable EPA (state and federal) standards.
3. Any architectural coating employed shall contain less than 20% by volume photo chemically reactive materials, or the applicable standard as defined by the EPA (state and federal), whichever is lower.
4. Any solvents used for cleaning painting equipment or other surfaces shall be stored in closed containers and disposed of appropriately. Evaporation of solvents as a means of disposal shall not be allowed. The means of storage and disposal of solvents shall result in less than 20% evaporation losses, or the applicable standard as defined by the EPA (state and federal), whichever is lower..
5. Cutback asphalt shall not be used for paving purposes, except as permitted by the EPA (state and federal).

Dust

Construction personnel and nearby persons shall be protected from the health hazard of dust. Dust is produced by a variety of construction operations, including grading, plowing, grinding, crushing, conveying, dry material mixing, demolition, and traffic on unpaved roads. Dust control methods, including applying water to unpaved roads, placing a layer of wood chips on vehicle use areas and pedestrian paths, using water to wet down demolition items, etc., shall be used. Dust from sandblasting shall be reduced by using vacuum systems, plastic sheet coverings, wet sand, or water sprays.

Sandblast operators shall consider the wind velocity and wind direction before blasting to reduce the dust that can blow toward work and/or inhabited site areas. The emission of dust must be controlled such that dust is not visible to the naked eye at the site boundary as required by the EPA (both state and federal).

Celtic Commercial Painting, LLC. will take in to consideration on each job the dust-generating activities planned and the dust control measures to be taken to minimize dust generation.

Specific attention shall be given as a requirement to cover vehicles transporting dust producing materials. The cleaning of dirt and mud covered vehicles before allowing the vehicles to leave the construction site shall also be addressed.

Burning

Burning, whether for disposal of refuse, disposal of trees and shrubs from cleared area, or for warming employees during cold weather, is prohibited unless authorized.

Water Quality

Celtic Commercial Painting, LLC. shall take in to consideration for each job all potential water pollution producing activities planned for the construction site, including, but not limited to, concrete placement and curing; storage and use of liquid chemicals; precipitation resulting in erosion; cleaning of equipment and other surfaces; pumping of groundwater; etc. Activities to consider in this discussion include the accidental spilling of materials not normally discharged to water. The consideration shall contain some indication of the magnitude of such activities, such as the volume of concrete; gallons of chemicals to be stored or used; surface areas of exposed soil which may contribute to erosion; the estimated amount of groundwater to be pumped; etc. If necessary, any plan developed by Celtic Commercial Painting, LLC. will contain a brief discussion of how the release of pollutants to streams or sewers from each of these activities will be prevented or minimized.

Drainage

Concrete and mortar mixing, cooling water, dust control spraying, and equipment washing are just a few of the construction operations that use water. Most of these operations use enough water to produce runoff. In sloping areas, the runoff quantity and velocity also may be high enough to pick up sediment, causing erosion.

When the sediment reaches the main stream, it produces muddy, cloudy water. Erosion and sediment damage may also occur from rainfall on graded or excavated areas. To prevent erosion damage and to preserve the water quality in streams, runoff needs to be controlled. Erosion controls shall be in place where practical, prior to the start of earthwork. When the above is not practical, excavation and backfill operations shall not proceed beyond erosion control measures when inclement weather is forecasted, or by more than twenty-four (24) hours during fair weather. Work areas will be inspected prior to the close of business each day to ensure that erosion controls are in place and not damaged from the day’s activities.

Fording and Working in Streams

Equipment use in streams shall be restricted to building or repairing structure bases, constructing channel diversions, access to work, and similar operations. When it is necessary to ford a stream, a low rock dam shall be constructed immediately downstream of the crossing to create a slow moving pool. A rock base shall be placed at the actual crossing site. The rock base will minimize the quantity of muddy water caused by the vehicles crossing the stream and the slow moving pool will serve as a settling basin for any sediments.

Accidental Spills

Streams need to be protected from direct or indirect accidental spills of pollutants such as refuse, garbage, cement, concrete, lime, sewage, chemicals, industrial waste, fuels, radioactive substances, oil products, mineral salts, and organic material. Sources of these pollutant spills include waste water from core drilling; spills and waste from curing compounds, salt; disposal of concrete curing water; waste from cleanup of mixers and batch trucks; waste from equipment washing; and use of fuel lubricants and chemicals.

Hazardous liquids or waste materials shall be stored in appropriate storage cabinets or other devices which provide adequate secondary containment capacity to retain a spill or leak of the largest conceivable volume. All storage containers must be appropriately labeled. Before any waste water or other liquids are disposed of into sewers, poured on land or dumped into surface streams or ditches, written approval from an environmental authorizing government body shall be obtained.

If pollutants are accidentally spilled, an emergency response group shall be acquired immediately so that emergency cleanup operations can begin promptly, reducing the spread and harmful effects of the spill. After notifying an emergency response group, Celtic Commercial Painting, LLC. shall immediately identify the materials involved in the spill and obtain whatever information is available regarding the potential hazards identified in the Safety Data Sheets (SDS) or other product literature. Celtic Commercial Painting, LLC. shall then stand by to provide whatever assistance is required by the emergency response group, such as construction dikes, removal of contaminated soils, traffic control, etc. Celtic Commercial Painting, LLC. will maintain control of the spill site until the site is certified clean. The clean-up procedures shall be reviewed and approved by the emergency response group prior to the start of clean-up activities.

Human Waste Disposal

Clearance shall be obtained before any human waste disposal facilities are placed or installed on site. Wastes from these facilities must be disposed of in accordance with State and Federal sanitation and water quality standards.

Fish and Wildlife

Disturbance to fish and wildlife in a construction area shall be held to a minimum. Streams and native habitat next to a project shall not be disturbed, except as necessary and permitted. Disturbance of nesting areas and the deer herd on site shall be avoided. The large numbers of deer on sites are often crossing roadways, and construction workers shall watch for the deer when driving on site.

Construction operations in a watershed shall be performed so that sediment loads, velocities, and temperatures are maintained as closely as possible to the normal conditions of the stream. Fish and other aquatic life have adapted to the quality and temperature of their water environment. Water used on a construction project and emptied into a stream may raise the water temperature and be unsafe for some species of fish.

Land Characteristics

Protection of Land Features

Landscape damage is often a permanent alteration to the environment. Maximum effort shall be made by construction personnel to avoid such damage. Where a tree is removed without cause, where rock formations are defaced by tractor cleats, or where a path is needlessly bucked through a wooded area, the environment can be permanently damaged. At best, such damage will not be restored by nature for many years. Equipment shall not be operated outside the work area and operators of clearing equipment shall be sensitive to the natural beauty of the area. Work areas shall be located and marked before construction starts. Protective features such as wire fences and steel posts, which are needed to preserve the landscape next to the work area, shall be installed when the work area is first established. Drainage from construction areas, storage yards, and other use areas shall be regulated to prevent erosion and to preserve the water quality in streams. Methods to control this drainage include velocity barriers, baled straw, drainage ditches, and down drains.

Chemical Alteration of Plants, Soils, Structures, and Runoff

Chemical fumes, dust, or liquids present a variety of dangers to plants, soils, structures, and drainage runoff. Plants may be stripped of their leaves, have their colors altered, or become deformed; the soil may be poisoned; paint on nearby structures may deteriorate; and runoff may become contaminated. Preventive measures shall be taken where such dangers are anticipated. If harmful chemical effects are detected during construction, immediate corrective measures shall be taken to reduce these effects and eliminate future danger.

Fire Damage

Construction activities shall use proper fire prevention methods to eliminate fire danger to the environment. In the event of a fire, the Fire Department shall be notified immediately (dial 911), even though other construction workers may be fighting the fire.

Off-Road Vehicles

Damage to vegetation, soils, and appearance results when work vehicles and other construction equipment are permitted to move off established roads and haul routes. Not only is the damage difficult and expensive to repair, but the area may not recover for years, if at all. It is prohibited for vehicles to move off established routes without approval.

Protection of Trees

Only remove trees specifically authorized. Avoid damaging vegetation that will remain in place. Except in areas to be cleared, no ropes, cables, or guy wires may be fastened to trees unless specific permission is obtained. If permission is given to use a tree for anchorage, the trunk must be wrapped with four or more layers of burlap or other suitable padding. Softwood cleats are then to be placed over the padding. Only after this is done shall rope, cable, or wire be attached

to the trunk. When it is necessary to climb a tree not scheduled for removal, climbing spurs shall not be used. During clearing operations, trees shall not be allowed to fall where they can damage other trees and shrubs that are to be left. Where necessary, use ropes or guys to prevent injury to neighboring plants and property.

Borrow Area Plan and Location

Development and restoration of borrow areas shall be accomplished with the least permanent defacement of the landscape. Individual contract specifications may show how borrow areas are to be restored by shaping, blending with surrounding features, and replanting. The borrow area shall be planned and located with these considerations in mind before staking or excavation begins.

Slope Protection

Manmade slopes shall be constructed to intercept cross drainage and prevent erosion. Extensive slopes shall be terraced and smaller slopes corrugated. Bulldozers shall be equipped with full U-blades when excavating slopes. These blades minimize the quantity of material that can escape to the side of the cut and slide downhill, damaging vegetation and rock outcrops.

Clearing Operations

Clearing operations result in cut and fill scars, scarring of rock formations, and damage can be minimized by building roads only as wide as necessary to comply with safety standards and allowing the roads to follow natural contours. Bulldozers, graders, and other construction equipment shall not be operated outside of designated areas. Trees and debris shall not be permitted to fall outside the clearing limits where they might damage trees or shrubs scheduled to remain. Fallen trees and debris shall be removed without injuring remaining trees and shrubs. Ropes, guys, or other means shall be used for tree or debris removal where necessary.

Surveying

Survey bench marks and control points shall be installed with minimum disruption of natural features. Construction workers shall recognize bench marks and preserve them. Bench marks are usually embedded in concrete, masonry structures, or concrete posts. Semi-permanent control points are often iron pipe or steel rods. Survey points, depending upon the type of survey, may be wooden stakes, chisel marks on concrete surfaces, or nails driven through “shriners.” Survey lines shall be located to avoid cutting down trees and to keep clearing operations within established limits. Clearing brush and branches shall be held to the minimum necessary to obtain readings. Survey crews shall cut branches in a manner that will leave as much as possible of the tree or shrub. Careful trimming will prevent a mangled appearance. All tree trimming shall be done with sharp saws and/or pruning shears. Sharpness of the blades adds to the user’s safety and makes a clean, neat cut. Tree trimming with axes is not permitted. All wounds and pruning cuts to trees shall be treated with an approved pruning compound of a color approximately matching the color of the bark to prevent rotting and insect damage. Roads or trails shall not be cut for temporary access to survey alignments, except when special permission has been granted.

Temporary Access Roads

Access and construction roads shall be located to preserve the natural beauty and minimize erosion. Where possible, existing roads shall be used. When temporary roads are required, they shall follow natural contours to minimize cuts and fills. Road widths and curve radii shall be reduced to the smallest dimension that complies with safety standards. Adequate drainage shall be provided. Construction roads shall be planned insofar as possible for future use as permanent service or access roads. Temporary roads shall be restored as soon as possible to their original natural condition.

Cultural Resources

Burial sites, ancient refuse pits, foundations, artifacts, and other historical or archaeological finds may be discovered during field surveys or excavation operations. These may have great historical or archaeological value. All such finds shall be reported immediately by the employee. Public law provides that nothing be removed. Extreme care must be taken to avoid unnecessary damage of artifacts and features. Further construction operations shall be restricted until clearance has been obtained. Removing artifacts from Federal lands is unlawful. Celtic Commercial Painting, LLC. shall discuss the procedures to be used during construction, particularly during excavation activities, to locate artifacts which the activity may uncover and to report these findings. It shall also include a statement acknowledging the requirement to halt those construction activities which could damage the historic site until the site is properly surveyed and released.

Visual Appearance

Celtic Commercial Painting, LLC. shall briefly address each of the following considerations in order to demonstrate that adequate attention has been paid to minimizing any adverse impacts from these operations.

Office Areas and Parking

Construction field offices, storage, and accompanying parking areas shall be planned and arranged not only for easy use but in an attractive manner having the least adverse visual impact. Parking work vehicles, heavy equipment, and personal vehicles in a carefully arranged pattern requires less space, looks neater and allows easy access and maintenance.

Equipment Repair and Storage

Repair areas and storage facilities for construction equipment usually are a source of noise, dust and visual distractions. These facilities shall be located to minimize annoyance to the surrounding area. Equipment staging areas shall be located in such a manner that rain water that may wash off quantities of petroleum wastes from the machinery will not concentrate and be directed into waterways. Existing natural land features and buildings shall be used to screen repair and as storage areas away from public view.

Materials Storage

The location and method of the fueling and maintenance activities shall ensure that insult to the environment will not occur.

Construction Area Lighting

Administrative offices, equipment storage and repair yards, materials storage areas, and facilities under construction may have high intensity lighting that creates a visual distraction. While lighting shall be adequate, it ought not be excessive in quantity and intensity. When not in use, most lights shall be turned off to reduce distraction and to conserve energy. Lights may be used to discourage thefts and vandalism. Lighting shall never be directed at nearby buildings, public areas, or roads.

Post-Construction Cleanup

After the construction work is finished, the operations, administration, storage, and repair areas shall be cleaned and restored as near to their original condition as possible. This includes removal of temporary trailers, buildings, equipment, lumber, refuse, surplus materials, fencing, and any other items not at the site prior to construction; correcting any drainage deficiencies; restoring cut and fill areas; and replanting native trees, shrubs, and grasses on all use areas.

Solid Waste

Celtic Commercial Painting, LLC. shall briefly discus of all waste materials to be generated by the project and how each material will be disposed of. The approximate quantity and any nonobvious characteristics of each waste material shall also be included. This list shall include any waste generated by any subcontractor who may be used during the project.

Refuse

All phases of construction produce refuse from packaging, worn out equipment, remains of lunches, beverage containers, and scrap lumber. Construction personnel can contribute to general safety and the appearance of the work site by providing and using waste containers and properly disposing of all refuse. A refuse control system shall be established at the construction site to promptly remove all refuse. Keeping the accumulation of refuse to a minimum will reduce health and safety hazards, will enhance the appearance of the construction area, and will save the contractor time and effort in cleanup when the project is completed. Construction personnel are also responsible for keeping refuse off the land next to the construction area. Refuse must be disposed of in accordance with State or Federal regulations. Refuse cannot be disposed of at the construction site by burning, burying, or other methods unless specific permission is granted. All refuse being hauled from the construction site shall be covered to prevent spillage or blowing.

Hazardous and Radioactive Waste

The disposal of hazardous waste and other regulated wastes generated by the contractor during the course of construction, using materials purchased and brought on site by the contractor, is the

responsibility of that contractor, including all necessary permitting, manifesting and land-ban documentation requirements. The disposal of hazardous waste, such as contaminated soil or polychlorinated biphenyl (PCB) oil is included in the construction specifications, if applicable. No hazardous waste shall be allowed to accumulate for more than 90 days before being shipped off-site for disposal or sent to an IEPA permitted RCRA storage facility.

What You Can Do

If you wish to be helpful in pursuing our environmental goals, please notify your supervisor and they will place you in touch with the appropriate managing body. If you would like to make an impact on your own, here are a few suggestions as to how you could help improve the environment:

- Carpool to and from work
- Recycle at home and, if possible, at work
- Turn lights off at home
- Turn the thermostat down when not needed
- Get involved with local environment programs

Sanitation

Introduction

It is important for the health and safety of each of its employees that Celtic Commercial Painting, LLC. makes all its employees of proper sanitation when handling, consuming, or otherwise using food and/or water on or near a work site. As such, we have set forth certain guidelines which either meet, or exceed, those set forth in 29 CFR 1926.51 for the handling, consuming or use of food and/or water while on or near a jobsite. Furthermore, it is important that employees understand the importance of cleanliness and maintaining the sanitation of a work site to insure the health and safety of himself, and all those he/she works with.

Accessibility and Use of Potable Water

Potable water is water which is safe for the consumption by people in accordance with state law. Celtic Commercial Painting, LLC. will insure that an adequate supply of potable water is provided in all places of employment.

Portable containers of water are permitted on worksites, but all portable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap; water will not be dipped from containers.

Types of Drinking Containers

Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose. Marked water bottles, canteens, or other sealable containers may be used. A common drinking cup, glass or non-sealable container is prohibited. Single service disposable cups are allowed for purposes of immediate consumption of water acquired from a recognized and allowed water container. Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups will be provided and must be used by employees.

Accessibility and Use of Non-Potable Water

Non-potable water is water which is not safe for the consumption by people in accordance with state law.

Outlets for non-potable water, such as water for industrial or firefighting purposes only, shall be identified by signs clearly indicating that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

Toilets at Construction Jobsites

Toilets will be provided for employees at all jobsites. In the event that 20 or less employees are located on a worksite, a minimum of 1 toilet will be provided; in the event that 20 or more employees are located on a worksite, a minimum of 1 toilet and 1 urinal will be provided per 40 workers; in the event that 200 or more employees are located on a worksite, a minimum of 1 toilet and 1 urinal will be provided per 50 workers.

Under temporary field conditions, provisions shall be made to assure not less than one toilet facility is available.

Jobsites, not provided with a sanitary sewer, will be provided with one of the following toilet facilities unless prohibited by local codes:

- Privies (where their use will not contaminate ground or surface water);
- Chemical toilets;
- Recirculating toilets; or
- Combustion toilets.

Food Handling

Celtic Commercial Painting, LLC. will insure that its employees have access to food service facilities and operations that meet the applicable laws, ordinances, and regulations of the jurisdictions in which they are located. In the event that no such food services are available at a worksite, the company will instruct the employees to bring food to the jobsite in sealed containers which are appropriately marked to identify the contents. Said containers will be stored in an area which is safe and free from possible contamination by hazardous materials that may be present on a worksite.

Employees are instructed to wash their hands and mouth with clean potable water and disinfectant soap prior to the consumption of any and all food. Food shall only be eaten in designated “break areas” and during a time which it is safe to eat.

Note: No employees are permitted to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

Temporary Sleeping Quarters

Under certain circumstances, Celtic Commercial Painting, LLC. may be presented with worksite operations that require or encourage the employees to remain on site at all times. In such an instance, Celtic Commercial Painting, LLC. will be notified of such and will be provided with temporary sleeping quarters and other necessary facilities.

In the event that a worksite requires or provides for employee temporary sleeping quarters, the employer will make sure the temporary sleeping quarters are heated, ventilated, and lighted.

Washing Facilities

In the event that any employees are engaged in the application of paints, coating, herbicides, or insecticides, or in other operations where the employee may be exposed to harmful contaminants, the company shall provide the employee with access to a washing facility. Such facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove harmful substances.

The washing facilities will be maintained in a sanitary condition.

Lavatories

Celtic Commercial Painting, LLC. will insure that its employees have ready access to lavatories. Each lavatory shall be provided with hot and cold running water, or tepid running water. Hand soap or similar cleansing agents will also be provided. Individual hand towels or sections thereof, of cloth or paper, air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.

Showers

Under certain circumstances, Celtic Commercial Painting, LLC. will make showers readily accessible to its employees. Such a circumstance would include if the employee's where required to remain on a jobsite at all times for an elongated period of time. In such an event, the company would provide its employees with showers in the following manner:

- One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift;
- Body soap or other appropriate cleansing agents convenient to the showers shall be provided;
- Showers shall be provided with hot and cold water feeding a common discharge line; and
- Employees who use showers shall be provided with individual clean towels.

Vermin Control

Every enclosed workplace will be so constructed, equipped, and maintained, so far as reasonably practicable, as to prevent the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.

Changing Rooms

Whenever employees are required by a particular standard to wear protective clothing because of the possibility of contamination with toxic materials, changing rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing will be provided.

Pandemic Preparedness

Introduction

Influenza is a highly infectious viral illness that has the capacity to spread rapidly. A pandemic is likely to occur when a new influenza strain emerges. It will spread rapidly because people will not have any natural resistance to it. It is difficult to predict the scale, severity and impact of a pandemic, but research suggests that it could affect the entire country and that up to half the population could develop the illness. There could also be more than one wave of the pandemic. During a flu pandemic, Celtic Commercial Painting, LLC. overall aim will be to encourage our staff to carry on if they are well, while taking additional precautions to protect them from exposure to infection and to lessen the risk of spread to others.

In terms of business continuity, this means that we will seek to sustain our core business and services during an influenza pandemic and therefore we will continue to operate within the existing framework of company policies and procedures. However Celtic Commercial Painting, LLC. recognizes that during such times some additional provisions will be required to support staff.

During a Pandemic

During a recognized influenza pandemic, Celtic Commercial Painting, LLC. will implement the following provisions:

Appointment of a Coordinator

As part of the effort to maintain the health and safety of its team and the public, Celtic Commercial Painting, LLC. will appoint a Coordinator or a Coordinating team to ensure this pandemic preparedness program is implemented in a pandemic event. The Coordinator / Coordinating team's responsibilities may include, but are not limited to:

- Assist in developing and regularly reviewing components of the Pandemic Preparedness Program
- Identifying core business / personnel to maintain essesntial functions
- Disseminate updated information and advice as it relates to pandemic events to employees and other key contacts
- Coordinating distribution of personal protective equipment to employees

Communications

During the period of a pandemic regular guidance and sources of information and support will be made available via line managers/supervisors, notice boards, Celtic Commercial Painting, LLC.'s Intranet and Website. Staff should monitor these sources closely to stay up to date with what is happening within the workplace and what action is being taken to ensure Celtic Commercial Painting, LLC. meets its obligations to staff, customers and other stakeholders.

Additional Hygiene Arrangements

- Celtic Commercial Painting, LLC. employees are to wash their hands often with soap and water for at least 20 seconds, especially after blowing their nose, coughing or sneezing; going to the bathroom; and before eating or preparing food. In the event that soap and water are not available, an alcohol-based hand sanitizer with at least 60% alcohol will be utilized.
- Celtic Commercial Painting, LLC. will provide hand sanitizer located throughout company premises and staff will be encouraged and reminded to use these regularly.
- All surfaces, door handles, banister rails, telephones, computer keyboards etc. will be cleaned more frequently.
- All waste bins will be emptied regularly.
- Employees are to always use clean tissues to cover their mouth/nose when they cough/sneeze (and not to use cloth handkerchiefs or re-use tissues) and to wash/sanitize their hands regularly.
- All employees are to avoid touching their eyes, nose, and mouth with unwashed hands.

Other Interventions

Celtic Commercial Painting, LLC. will follow the requirements and guidelines issued by CDC and local health departments, including the implementation of social distancing practices and use of face coverings. Social distancing means deliberately increasing the physical space between people to avoid spreading illness. Staying at least 6 feet away from other people reduces the chances of transmission.

Flu Vaccination

- Celtic Commercial Painting, LLC. may identify certain key staff and arrange for those staff to be given a flu vaccination at Celtic Commercial Painting, LLC.'s expense.
- This would be a purely voluntary arrangement and staff may refuse to have this if they wish.

Visitors

- Visitor passes will largely be discontinued except in exceptional circumstances for the duration of the pandemic.
- Visitors will be asked if they have any flu like symptoms before being allowed into company premises.
- Visitors will be asked to sanitize their hands before entering Celtic Commercial Painting, LLC. premises.
- Visitors will be accompanied and will be confined to meeting rooms where at all possible.

Face to Face Meetings

- Travel should largely be avoided unless absolutely essential and in particular if it involves the use of public transport.
- Face to face meetings should be avoided wherever possible and use of telephone/teleconferencing/email facilities should be encouraged.
- Where face to face meetings are unavoidable, the meeting rooms should be used which will have sanitizer pumps/tissues/waste bins provided and will be cleaned regularly.

Staff Identified as Potentially At-risk

- Staff at risk of developing influenza-related complications (e.g., pregnant workers and those with compromised immune systems) will be reassigned from high-risk work sites and locations. If this is not possible it may be necessary to ask such staff to work from home, or remain at home until it is deemed safe to return to the workplace.

Staff with Flu Symptoms

(The most significant symptoms are the sudden onset of: fever, cough or shortness of breath; other symptoms may include: headache, tiredness, chills, aching muscles, sore throat, runny nose, sneezing, loss of appetite)

While at Work

If a member of staff feels ill with symptoms consistent with flu, it is important that they do not simply carry on working. They should report their illness immediately to their line manager and if the symptoms are consistent with influenza, they will be sent home, advised to contact their GP and told not to return to work until the symptoms have cleared after the isolation period.

While Not at Work

If they develop symptoms whilst not at work, they should adhere to the following advice:

- Inform their manager that they are ill using the recognized process and follow the same procedure as above

As part of the reporting procedures, the manager will seek the permission of the employee to inform their colleagues that they are suffering from flu. Allowing colleagues to know about it will allow them to look out for early symptoms in themselves, and also allow any who may be at-risk in some way (e.g., pregnant) to seek medical advice.

Staff Who Have Difficulty Attending Work (Where They Do Not Have the Flu)

In general staff shall attend work during a pandemic unless there is a clear health and safety risk. However Celtic Commercial Painting, LLC. is aware that certain situations can occur:

1. Public transport is shut down:

Where an employee has difficulty getting to work because of a failure in the public transport system due to the pandemic, then they will be encouraged to seek other methods of getting to work.

2. The employee reports that a member of their household has been diagnosed with flu but that they themselves are okay and would be willing to attend work:

   Celtic Commercial Painting, LLC. recognizes it has a duty of care to others in the workforce and the individual will be advised to remain at home until the ill relative is no longer infectious, however Celtic Commercial Painting, LLC. may ask the employee to work from home if possible.

3. The employee reports that their child or other dependent has flu and they are unable to arrange care at short-notice:

   Under these circumstances Celtic Commercial Painting, LLC. will provide the employee with a reasonable period of time off to care for these dependents. This is limited to sufficient time off to deal with the immediate issue and sort-out longer-term caring arrangements; the individual should discuss their situation with their line manager.

4. The employee has school-age children and the school is closed due to the influenza pandemic:

   The provisions of number 3 above would apply.

Working Flexibly

The impact of any pandemic will normally mean an increased workload due to a reduction in the actual staff available for work. It will therefore be essential that we maximize the capacity of our available workforce by asking staff to work more flexibly and/or differently. Therefore Celtic Commercial Painting, LLC. reserves the right to ask staff to undertake one or more of the following options:

- Work additional hours to cover for sick colleagues
- Work more flexibly as required
- Work in a different job role for a period (with appropriate training)
- Work from an alternative location, or even from home if appropriate

Training

Celtic Commercial Painting, LLC. employees will be periodically trained on the company policy pertaining to a pandemic and on health issues of the pertinent disease to include prevention of illness, initial disease symptoms, preventing the spread of the disease, and when it is appropriate to return to work after illness.

Hearing Conservation

The purpose of this program is protect employees over exposure to noise and to prevent hearing loss. This program also states that employees must understand how to protect their hearing.

Purpose

This program is intended to comply with the Occupational Safety and Health Administration's Noise Exposure Standard (29 CFR 1910.95). Celtic Commercial Painting, LLC. Hearing Conservation Plan is designed to protect employees whose duties require them to work in areas where the potential for high intensity noise exposure exists. The purpose of this program is to prevent exposure to or injury from potentially damaging noise levels and serves Celtic Commercial Painting, LLC. overall goal of providing a workplace that is free from all recognized hazards

General Principles

The OSHA Occupational Noise Exposure Standard (29 CFR 1910.95 (a) and (b) was enacted to protect employees against the effects of high intensity occupational noise. The standard includes the following components:

- The standard sets permissible exposure levels and exposure duration at sound levels at or above 90dBA as an 8-hour time weighted average (TWA) per workday
- The standard requires the employer to reduce employee exposure to within this level by the use of feasible engineering/administrative controls
- If engineering/administrative controls do not reduce sound levels to the specified exposure range, personal protective equipment (PPE) will be provided to the employee and used to reduce sound levels to the specified level
- The standard requires the combined effect of noise from varying sources be given special consideration
- The standard requires that distinctions between continuous and intermittent noise and associated sound levels be identified
- Exposure to impact or impulse noise should not exceed 140dBA.

In addition, the hearing conservation standard (29 CFR 1910.95 (c)(1)) requires that a "continuing effective hearing conservation program" be implemented whenever employee exposure exceeds 85 dBA as an 8-hour TWA, or an equivalent dose of 50% of the exposure limit, without regard to the use of hearing protectors. This hearing conservation standard also requires that employees whose noise exposures equals or exceeds the action level of 85dBA be included in the Hearing Conservation Program.
The standard 29 CFR 1910.95 (c) through (o) also details provisions dealing with monitoring employee noise exposures, annual audiometric testing for employees exposed to 85dBA or more as an 8-hour TWA, retesting under some circumstances, selection of appropriate hearing protectors, employee training and education, and record maintenance.

Summary of the Requirements of OSHA's Occupational Noise Exposure Standard

The following sections describe the requirements of the Hearing Conservation Standard.

1. Monitoring
2. Audiometric Testing
    a. Audiograms
    b. Audiogram Evaluation
3. Hearing Protectors
4. Training
5. Record Keeping

Monitoring

The hearing conservation standard requires employers to monitor noise exposure levels in a manner that will accurately identify employees who are exposed at or above 85-dBA as an 8-hour TWA, or equivalently, a dose of 50% of the PEL. The monitoring requirement includes the following points:

- All exposure measurements shall include all noise within the 80 to 130 dBA range, and includes both continuous, intermittent and impulsive sources of noise.
- Some workers may experience varying sound level exposures due to high mobility, significant variations in sound levels, or significant impact noise, and area monitoring may be inappropriate. Personal sampling that is representative of the employee's exposure, produces equivalent results, and complies with the standard shall be used in these cases.
- Instruments used for monitoring employee exposure must be calibrated to ensure that measurements are accurate.
- Employers shall re-monitor worker exposure for sound levels whenever there is a change in continuous or intermittent noise levels due to a change in process/equipment or work assignment.
- The employer shall notify employees exposed to sound levels at or above 85dB as an 8-hour TWA of the results of the monitoring.
- Affected employees shall have the opportunity to observe the monitoring.

Audiometric Testing

Audiometric testing monitors employee hearing acuity over time and provides an opportunity to educate employees about their hearing and the need to protect it. The audiometric testing program includes:

- Baseline audiograms
- Annual audiograms
- Training and follow-up procedures

Audiometric testing will be made available **at no cost** to all employees whose exposure equal or exceeds an 8-hour TWA of 85 decibels.

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

Those performing the audiometric tests shall also:

- Ensuring that the audiometer works properly.
- Conducting audiometric tests in accordance with 1910.95 and all relevant appendix.
- For reviewing audiograms for standard threshold shifts (STS).
- Identifying problem audiograms requiring further evaluation by a professional.

There are two essential components of the medical testing program. These include conducting and evaluating all audiogram tests.

Audiograms

The different types of audiograms required:

- **Baseline Audiogram** – An audiogram performed within 6 months of an employee's first exposure to occupational noise at or above the action level 85dBA. This audiogram serves as a reference against which future audiograms are compared. If the baseline audiogram will be obtained more than six months after the employee's first exposure at or above the action level, the employee shall wear hearing protectors until the baseline audiogram is obtained. In addition, whenever a baseline audiogram is to be obtained from an employee, the employee shall have limited noise exposure at least 14 hours prior to testing. If necessary, hearing protectors may be used to limit the employee's exposure to noise.
- **Annual Audiogram** – Once the baseline has been established, the employer must obtain a new audiogram within one year of the baseline, and then subsequent yearly audiograms if the employee is exposed above the Action Level.
- **Mobile Test Van Exception** – Where mobile test vans are used to meet the audiometric testing obligation, the employer shall obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level. Where baseline audiograms are obtained more than 6 months after the employee's first exposure at or above the action level, employees shall wearing hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained.

Audiogram Evaluation

The employee's annual audiogram shall be compared to his or her baseline audiogram to determine if the annual audiogram is valid and to determine if a standard threshold shift (STS) has occurred. The standard defines an STS as an average audiogram shift of 10dB or more at 2,000, 3,000 or 4,000 Hz in either ear.

Whenever a problem audiogram has been identified the audiologist:

- May retest the employee within 30 days and consider the retest the employee's annual audiogram.
- Shall review problem audiograms and determine whether further evaluation is required.
- Shall provide all information necessary to perform the evaluation including the employee's baseline and most recent audiograms, and information pertaining to test room and equipment requirements as outlined in the noise standard and its appendices.

Whenever an STS has been identified, follow-up procedures include:

- That the employer shall inform the employee, in writing, of the test results within 21 days of the determination.
- If an STS is determined to be work related, employees shall be fitted and trained for hearing protectors if they are not currently using them or refitted and retrained in the use of hearing protectors if they are currently using them.
- That the employee shall be referred for further clinical or audiologic testing or evaluation, as appropriate, shall be examined to determine if the hearing protectors are aggravating or promoting any medical conditions, and informed of any medical condition of the ear that is unrelated to the use of hearing protectors.
- If subsequent testing of the employee, exposed at or below 90dBA as an 8-hour TWA, shows that the STS is not persistent, the employer shall inform the employee of the new test and evaluation result and discontinue the use of hearing protection for that employee.

A recent or annual audiogram may be substituted for the baseline audiogram, if the audiologist determines that:

- The STS identified in the audiogram is persistent, or
- There has been an improvement in the employee's hearing over the baseline.

The replacement audiogram is known as the **revised baseline**, which will help to identify any subsequent shifts in hearing should they occur.

The standard recognizes the effects of natural aging upon hearing, and makes allowances for the application of age correction factors in evaluating an employee's annual audiogram.

In order to obtain valid audiograms, audiometric equipment and facilities must be used, calibrated and maintained according to specifications described 29 CFR 1910.95 (g) and (h), and appendices C, D, E and F.

Hearing Protectors and Protector Attenuation

Hearing protectors are made available to all workers exposed at or above the Action Level for noise (85dBA TWA) at no cost to the employee.

The employer shall ensure that hearing protectors are worn by employees whenever:

- Feasible engineering/administrative controls fail to reduce noise levels to 90dBA or less,
- And employee is exposed to 85dBA and has a) not yet had a baseline audiogram or b) experienced an STS.

Employees will have the opportunity to select hearing protectors with the help of a professional trained in the selection and fitting of these devices. The protectors should be comfortable to wear and provide sufficient attenuation of noise to specified levels.

The employer shall also provide for employees:

- Training in the use and care of the protectors.
- Appropriate fitting and supervision to ensure correct use of these devices at the work-site.

Hearing protectors shall provide adequate attenuation of noise for each employee. Hearing protector attenuation shall be evaluated for each specific work environment (Appendix B of the noise standard) by the employer, and the protectors must:

- Reduce noise exposure to 90dBA or less as an 8-hour TWA.
- Reduce noise exposure to 85dBA or less for workers who have not yet received a baseline audiogram or who have experienced and STS.

The adequacy of hearing protectors shall be re-evaluated by the employer whenever:

- There is a change in the employee's work conditions or noise exposure levels, and the current protectors may not provide adequate attenuation.
- An STS has occurred in a worker; therefore exposure levels need to be reduced through the use of PPE to 85dBA or less as and 8-hour TWA.

Where necessary, the employer shall provide more effective hearing protectors. 29 CFR1910.95 (i) and (j) and corresponding appendices provide a complete discussion on hearing protectors and attenuation of noise.

Training

Celtic Commercial Painting, LLC. is responsible for providing training to employees exposed to noise at or above an eight-hour time-weighted average of 85dBA. The training program shall be repeated annually for each employee, and will contain information that is up to date and includes any changes regarding the work environment or process.

A training program will include the following components:

- The effects of noise on hearing.
- The purpose, advantages and disadvantages of properly fitting hearing protectors for attenuating noise levels.
- Selection of hearing protectors.
- Fitting and use of hearing protectors.
- The care of hearing protectors.
- The purpose and procedures for audiometric testing.

The employee or their supervisor shall have access to information and materials, upon request, regarding this program including:

- Copies of 1910.95.
- Access to training and hearing conservation materials for this program.
- Training or educational materials from this program pertaining to the noise control standard.

Celtic Commercial Painting, LLC. will provide training and educational materials that best suit each situation as it pertains to noise exposure, control and hearing conservation. The training requirements are such that they will promote employee awareness and participation, and allow for routine assessment of the level of compliance of the program by the employer.

Recordkeeping and Access to Records

Celtic Commercial Painting, LLC. will maintain records in compliance with 29 CFR 1910.95(m).

Recording keeping requirements of the noise control standard include:

1. Maintaining noise exposure measurement records for a period of 2 years.

2. Retaining hearing test records that include:

    - The name and job classification of the employee.
    - Dates of all audiogram tests.
    - Examiner's name.
    - Date of the last acoustic or exhaustive calibration of test equipment, measurements of the background sound levels in audiogram test rooms.
    - The employee's most recent noise exposure measurement.
    - Maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.

3. Audiometric test records must be maintained for the duration of the affected individual's employment. All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary. The provisions of 29 CFR 1910.20 (a)-(e) and (g)-(i) apply to access to records under this section.

Responsibilities

This section provides a description of each department's responsibilities in accordance with the Hearing Conservation Program.

Program Administrator

- Evaluate noise measurements and identify exposure at or above the permissible exposure level (PEL) of 90 dBA as an 8-hour TWA.
- Monitor employee exposures in areas where noise levels may exceed 85 dBA as an 8-hour TWA (action level).
- Recommend feasible engineering controls.
- Perform Noise exposure computations (29 CFR 1910.95 Appendix A).
- Estimate adequacy of hearing protectors (29 CFR 1910.95 Appendix B).
- Ensure a copy of 1910.95 is posted in the workplace.
- Report findings to employees.
- Provide program oversight and make recommendations.
- Maintain necessary records.
- Maintain the written plan.

Supervisors and Facilities Managers:

- Make themselves familiar with the Hearing Conservation Program, and ensure that employees comply with the requirements of this plan.
- Ensure that all of their facilities have been surveyed and that all high noise areas or work activities have been identified.
- Help to identify employees who have the potential for exposure to sound levels that exceed the OSHA permissible exposure limit (PEL).
- Make sure that employees are educated and trained on safe working practices.
- Ensure that employees are trained and properly fit tested for the use of hearing protectors.
- Ensure that hearing protectors are properly used by the employees where necessary.
- Provide a clean area where hearing protectors can be stored.
- Maintain necessary records.

Employees

- Comply with the Hearing Conservation Program.
- Carry out their duties in a manner so as to promote safe work practices.
- Use the provided hearing protectors in accordance with training and education.
- Make sure that their hearing protectors are in good condition.
- Inform their supervisors when they need replacement-hearing protectors.
- Communicate any problems in the work process or new hazards that may compromise the effectiveness of the hearing conservation practices.

Appendix 3 – The Occupational Noise Exposure Standard

29 CFR 1910.95

(a)

Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table 16 when measured on the A scale of a standard sound level meter at slow response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:

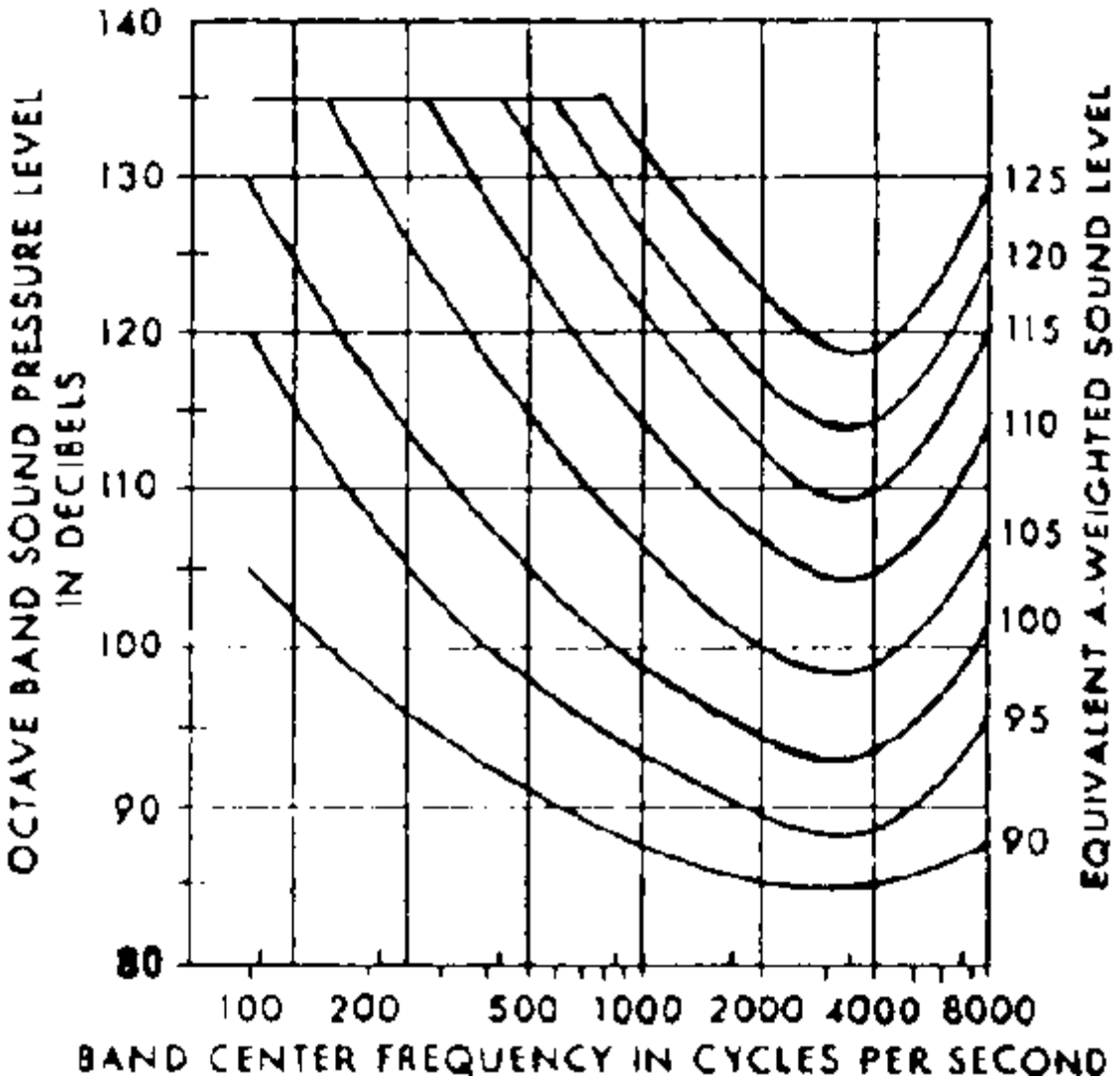


Figure 14 – Equivalent A-Weighted Sound Level

Equivalent sound level contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on this graph and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This

equivalent A-weighted sound level, which may differ from the actual A-weighted sound level of the noise, is used to determine exposure limits from Table 16.

(b)(1)

When employees are subjected to sound exceeding those listed in Table 16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table 16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

(b)(2)

If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

Table 16 – Permissible Noise Exposures

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

(c)

Hearing Conservation Program

(c)(1)

The employer shall administer a continuing, effective Hearing Conservation Program, as described in paragraphs (c) through (o) of this section, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the Hearing Conservation Program, employee noise exposures shall be computed in accordance with

Appendix A and Table G-16A in Appendix A, and without regard to any attenuation provided by the use of personal protective equipment.

(c)(2)

For purposes of paragraphs (c) through (n) of this section, an 8-hour time-weighted average of 85 decibels or a dose of fifty percent shall also be referred to as the action level.

(d)

Monitoring

(d)(1)

When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the employer shall develop and implement a monitoring program.

(d)(1)(i)

The sampling strategy shall be designed to identify employees for inclusion in the Hearing Conservation Program and to enable the proper selection of hearing protectors.

(d)(1)(ii)

Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, the employer shall use representative personal sampling to comply with the monitoring requirements of this paragraph unless the employer can show that area sampling produces equivalent results.

(d)(2)(i)

All continuous, intermittent and impulsive sound levels from 80 decibels to 130 decibels shall be integrated into the noise measurements.

(d)(2)(ii)

Instruments used to measure employee noise exposure shall be calibrated to ensure measurement accuracy.

(d)(3)

Monitoring shall be repeated whenever a change in production, process, equipment or controls increases noise exposures to the extent that:

(d)(3)(i)

Additional employees may be exposed at or above the action level; or

(d)(3)(ii)

The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of paragraph (j) of this section.

(e)

Employee Notification – The employer shall notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.

(f)

Observation of Monitoring – The employer shall provide affected employees or their representatives with an opportunity to observe any noise measurements conducted pursuant to this section.

(g)

Audiometric Testing Program

(g)(1)

The employer shall establish and maintain an audiometric testing program as provided in this paragraph by making audiometric testing available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels.

(g)(2)

The program shall be provided at no cost to employees.

(g)(3)

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational

Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

(g)(4)

All audiograms obtained pursuant to this section shall meet the requirements of Appendix C: "Audiometric Measuring Instruments."

(g)(5)

Baseline Audiogram

(g)(5)(i)

Within 6 months of an employee's first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared.

(g)(5)(ii)

Mobile Test Van Exception – Where mobile test vans are used to meet the audiometric testing obligation, the employer shall obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level. Where baseline audiograms are obtained more than 6 months after the employee's first exposure at or above the action level, employees shall wearing hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained.

(g)(5)(iii)

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.

(g)(5)(iv)

The employer shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

(g)(6)

Annual Audiogram – At least annually after obtaining the baseline audiogram, the employer shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

(g)(7)

Evaluation of Audiogram

(g)(7)(i)

Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift as defined in paragraph (g)(10) of this section has occurred. This comparison may be done by a technician.

(g)(7)(ii)

If the annual audiogram shows that an employee has suffered a standard threshold shift, the employer may obtain a retest within 30 days and consider the results of the retest as the annual audiogram.

(g)(7)(iii)

The audiologist, otolaryngologist, or physician shall review problem audiograms and shall determine whether there is a need for further evaluation. The employer shall provide to the person performing this evaluation the following information:

(g)(7)(iii)(A)

A copy of the requirements for hearing conservation as set forth in paragraphs (c) through (n) of this section;

(g)(7)(iii)(B)

The baseline audiogram and most recent audiogram of the employee to be evaluated;

(g)(7)(iii)(C)

Measurements of background sound pressure levels in the audiometric test room as required in Appendix D: Audiometric Test Rooms.

(g)(7)(iii)(D)

Records of audiometer calibrations required by paragraph (h)(5) of this section.

(g)(8)

Follow-Up Procedures

(g)(8)(i)

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined in paragraph (g)(10) of this section has occurred, the employee shall be informed of this fact in writing, within 21 days of the determination.

(g)(8)(ii)

Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the employer shall ensure that the following steps are taken when a standard threshold shift occurs:

(g)(8)(ii)(A)

Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.

(g)(8)(ii)(B)

Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

(g)(8)(ii)(C)

The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.

(g)(8)(ii)(D)

The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

(g)(8)(iii)

If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the employer:

(g)(8)(iii)(A)

Shall inform the employee of the new audiometric interpretation; and

(g)(8)(iii)(B)

May discontinue the required use of hearing protectors for that employee.

(g)(9)

Revised Baseline – An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or physician who is evaluating the audiogram:

(g)(9)(i)

The standard threshold shift revealed by the audiogram is persistent; or

(g)(9)(ii)

The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

(g)(10)

Standard Threshold Shift

(g)(10)(i)

As used in this section, a standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

(g)(10)(ii)

In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: “Calculation and Application of Age Correction to Audiograms.”

(h)

Audiometric Test Requirements

(h)(1)

Audiometric tests shall be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency shall be taken separately for each ear.

(h)(2)

Audiometric tests shall be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969, which is incorporated by reference as specified in Sec. 1910.6.

(h)(3)

Pulsed-tone and self-recording audiometers, if used, shall meet the requirements specified in Appendix C: “Audiometric Measuring Instruments.”

(h)(4)

Audiometric examinations shall be administered in a room meeting the requirements listed in Appendix D: “Audiometric Test Rooms.”

(h)(5)

Audiometer Calibration

(h)(5)(i)

The functional operation of the audiometer shall be checked before each day’s use by testing a person with known, stable hearing thresholds, and by listening to the audiometer’s output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.

(h)(5)(ii)

Audiometer calibration shall be checked acoustically at least annually in accordance with Appendix E: “Acoustic Calibration of Audiometers.” Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.

(h)(5)(iii)

An exhaustive calibration shall be performed at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

(i)

Hearing Protectors

(i)(1)

Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary.

(i)(2)

Employers shall ensure that hearing protectors are worn:

(i)(2)(i)

By an employee who is required by paragraph (b)(1) of this section to wear personal protective equipment; and

(i)(2)(ii)

By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:

(i)(2)(ii)(A)

Has not yet had a baseline audiogram established pursuant to paragraph (g)(5)(ii); or

(i)(2)(ii)(B)

Has experienced a standard threshold shift.

(i)(3)

Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the employer.

(i)(4)

The employer shall provide training in the use and care of all hearing protectors provided to employees.

(i)(5)

The employer shall ensure proper initial fitting and supervise the correct use of all hearing protectors.

(j)

Hearing Protector Attenuation

(j)(1)

The employer shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. The employer shall use one of the evaluation methods described in Appendix B: “Methods for Estimating the Adequacy of Hearing Protection Attenuation.”

(j)(2)

Hearing protectors must attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels as required by paragraph (b) of this section.

(j)(3)

For employees who have experienced a standard threshold shift, hearing protectors must attenuate employee exposure to an 8-hour time-weighted average of 85 decibels or below.

(j)(4)

The adequacy of hearing protector attenuation shall be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. The employer shall provide more effective hearing protectors where necessary.

(k)

Training Program

(k)(1)

The employer shall institute a training program for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels, and shall ensure employee participation in such program.

(k)(2)

The training program shall be repeated annually for each employee included in the Hearing Conservation Program. Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

(k)(3)

The employer shall ensure that each employee is informed of the following:

(k)(3)(i)

The effects of noise on hearing;

(k)(3)(ii)

The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and

(k)(3)(iii)

The purpose of audiometric testing, and an explanation of the test procedures.

(l)

Access to Information and Training Materials

(l)(1)

The employer shall make available to affected employees or their representatives copies of this standard and shall also post a copy in the workplace.

(l)(2)

The employer shall provide to affected employees any informational materials pertaining to the standard that are supplied to the employer by the Assistant Secretary.

(l)(3)

The employer shall provide, upon request, all materials related to the employer's training and education program pertaining to this standard to the Assistant Secretary and the Director.

(m)

Recordkeeping

(m)(1)

Exposure Measurements – The employer shall maintain an accurate record of all employee exposure measurements required by paragraph (d) of this section.

(m)(2)

Audiometric Tests

(m)(2)(i)

The employer shall retain all employee audiometric test records obtained pursuant to paragraph (g) of this section:

(m)(2)(ii)

This record shall include:

(m)(2)(ii)(A)

Name and job classification of the employee;

(m)(2)(ii)(B)

Date of the audiogram;

(m)(2)(ii)(C)

The examiner's name;

(m)(2)(ii)(D)

Date of the last acoustic or exhaustive calibration of the audiometer; and

(m)(2)(ii)(E)

Employee's most recent noise exposure assessment.

(m)(2)(ii)(F)

The employer shall maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.

(m)(3)

Record Retention – The employer shall retain records required in this paragraph (m) for at least the following periods.

(m)(3)(i)

Noise exposure measurement records shall be retained for two years.

(m)(3)(ii)

Audiometric test records shall be retained for the duration of the affected employee's employment.

(m)(4)

Access to Records – All records required by this section shall be provided upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary. The provisions of 29 CFR 1910.20 (a)-(e) and (g)-(i) apply to access to records under this section.

(m)(5)

Transfer of Records – If the employer ceases to do business, the employer shall transfer to the successor employer all records required to be maintained by this section, and the successor employer shall retain them for the remainder of the period prescribed in paragraph (m)(3) of this section.

(n)

Appendices

(n)(1)

Appendices A, B, C, D, and E to this section are incorporated as part of this section and the contents of these appendices are mandatory.

(n)(2)

Appendices F and G to this section are informational and are not intended to create any additional obligations not otherwise imposed or to detract from any existing obligations.

(o)

Exemptions – Paragraphs (c) through (n) of this section shall not apply to employers engaged in oil and gas well drilling and servicing operations.

(p)

Startup Date – Baseline audiograms required by paragraph (g) of this section shall be completed by March 1, 1984.

Heat and Cold Stress

Scope

The purpose of this program is to protect Celtic Commercial Painting, LLC. employees from heat and cold related illnesses that can occur to employees. This program will discuss the following.

- Identifying, evaluating and controlling potential exposure to extreme temperature; humidity, and other environmental factors;
- Providing drinking water;
- Providing supervisor and employee training;
- Establishing heat and cold related emergency procedures.

Cold Illness Prevention Program

Cold-Related Hazards

Some health problems can arise from being exposed to the cold including frostbite, trench foot, and hypothermia. This section is designed to provide employees with basic information on how to prevent cold-related illnesses.

Environmental conditions that cause cold-related stresses are low temperature, cool high winds, dampness, and cold water.

Risk factors contributing to cold-related stresses include:

- A cold environment.
- Inadequate clothing or wet clothing.
- A previous illness or disease, such as diabetes, atherosclerosis and hypothyroidism, may increase risk.
- Susceptibility increases with age.
- Exhaustion or immobilization, especially through injury or entrapment.
- Drug use or certain medications may inhibit the body's response to cold or impair judgment.

Harmful Effects of Cold

Common harmful effects of cold include frostbite, trench foot, and general hypothermia.

Frostbite

Frostbite occurs when skin tissue actually freezes and cell damage results. The symptoms of frostbite include an uncomfortable sensation of coldness; there may be a tingling, stinging, or aching feeling followed by numbness. Initially the frostbitten area appears white and is cold to the touch. This is followed by heat, redness, and swelling.

First aid includes treating affected areas with warm water. **Be careful to avoid rubbing frostbitten areas because this can lead to greater tissue injury.** If there is a chance for refreezing, do not rewarm the affected areas.

Trench Foot

Trench foot may be caused by long, continuous exposure to a wet and cold environment or actual immersion in water. The condition is characterized by vascular damage. Symptoms include a tingling and/or itching sensation, pain, and swelling. Blisters may form and be followed by death of skin tissue and ulceration. First aid treatment for trench foot is similar to the treatment for frostbite, and includes moving the victim to a warm area, treating the affected part with warm water or warm packs, arranging bed rest in a warm environment and obtaining medical assistance as soon as possible.

Hypothermia

General hypothermia is the progressive loss of body heat with prolonged exposure to cold. Body heat loss is accelerated more rapidly when a person is wet because of sweat or working in a damp environment. Most cases of hypothermia develop in air temperatures between 30 and 50 °F.

The first symptoms of hypothermia are uncontrollable shivering and feeling of cold. As the body's temperature continues to drop, an individual can become confused, careless, and disoriented. At this point a person may make little or no effort to avoid further exposure to the cold. For those working around machinery or animals, accidental injury is an additional risk. When the core body temperature falls below 86˚F, the body's adaptive mechanisms for reducing heat loss become ineffective and death can occur.

Individuals experiencing mild hypothermia should be immediately moved to a warm, dry shelter. Further heat loss is minimized by removing wet clothing and applying warm blankets for insulation. Warm, nonalcoholic, caffeine-free drinks may be offered. More severe cases of hypothermia require intensive medical care.

Preventing Cold-Related Disorders

The following recommendations may help to reduce the number of cold-related disorders that employees may experience.

Personal Protective Clothing

- Dress appropriately. Wear at least three layers:
    - An outer layer to break the wind and allow some ventilation (like Gore-Tex or nylon)
    - A middle layer of wool, down, or synthetic pile to absorb sweat and retain insulating properties when wet;

    - An inner layer of cotton or synthetic weave to allow ventilation and escape of perspiration.
- Layer clothing to create air pockets that help retain body heat. Layering also makes adapting to changes in weather and level of physical exertion easier.
- Keep available a change of clothing, if work garments become wet.
- Pay special attention to protecting feet, hands, head, and face. Keep the head covered (up to 40% of body heat can be lost when the head is exposed).
- Wear footgear that protects against cold and dampness. Footgear should be insulated and fit comfortably when socks are layered.
- Celtic Commercial Painting, LLC. will provide extreme cold weather protective equipment. Extreme cold weather is defined as an equivalent chill temperature of -25 °F or lower.

Environmental Protection

- Protect hands, face, and feet from frostbite with an on-site source of heat. Air jets, radiant heaters, or contact warm plates may be employed.
- Provide a heated shelter for workers who experience prolonged exposure to the equivalent wind- chill temperature of 20 °F or less.
- Shield work areas from drafty or windy conditions.
- Use thermal insulating material on the handles of equipment when temperatures drop below 30 °F. Do not sit or kneel on cold, unprotected surfaces.

Safe Work Practices

- Allow individuals to set their own pace and take extra work breaks when needed. Avoid activities, whenever possible, that may cause heavy perspiration.
- Shift as many outdoor activities to the inside as feasible and, when working outside, select the warmest hours of the day.
- Minimize activities that reduce circulation, such as sitting or standing in a cold environment for prolonged periods of time.
- Keep energy levels up and prevent dehydration by consuming warm, sweet, caffeine-free, nonalcoholic drinks and soup.
- Allow a period of adjustment to the cold before embarking on a full work schedule. Avoid working alone. In very cold weather use a buddy system.
- Seek warm shelter immediately following these symptoms: heavy shivering, an uncomfortable sensation of coldness, severe fatigue, drowsiness, or euphoria.

Supervisor Responsibility

Supervisors are to:

- Determine whether employees will be working in cold weather conditions.
- Ensure that employees are equipped with and wear protective outerwear when necessary.
- Implement work/warm-up schedules when indicated by the equivalent chill temperature chart.

- Upon observing, or being notified of, an employee experiencing the initial symptoms of frostbite or hypothermia, the supervisor is to ensure that the employee is moved to a warm location. If symptoms worsen or additional symptoms appear, the supervisor should ensure that the employee is examined by a medical professional. The supervisor must complete an Accidental Injury or Occupational Illness Report upon notification of potential frostbite or hypothermia.

Employee Responsibility

Employees are to:

- Wear protective outerwear or equivalent personal protective outerwear when required to work in cold weather conditions.
- An employee experiencing any of the initial symptoms of frostbite or hypothermia must immediately move to a warm location and notify his/her supervisor of the symptoms. If symptoms worsen or additional symptoms appear, the employee must immediately seek medical attention.

Heat Illness Prevention Program

Introduction

Hot weather puts stress on an employee's body cooling system. When heat is combined with other stressors such as hard physical work, loss of fluids or some medical conditions, it may lead to heat-related illness, disability, or even death. This can happen to anyone, even the young and fit.

Heat illness risk factors are present in many workplaces. For outdoor workplaces, solar radiation and hot ambient air are important external sources of heat. Humidity in the workplace also contributes to heat stress.

Employees on medications or with pre-existing medical conditions may be more susceptible to heat stress. Employees should speak to their physicians about working in hot environments before starting work.

What is Heat Stress/Illness?

Our bodies maintain a fairly constant internal temperature of 98.6 °F, even though external temperatures might be much higher or lower. To keep its temperature within safe limits, the body often must shed excess heat. Its natural method is to increase blood circulation to the skin, from which some heat flows to the environment through radiation and convection, and then to release sweat. As the sweat evaporates, it helps to further cool the skin surface.

On hot days, the body cannot shed its heat nearly as efficiently as when the surrounding temperature is much lower than that of the body. In addition, on days of high humidity, sweat does not evaporate as quickly because the surrounding air is moist. These conditions make it

more difficult to work in heat. With more blood going to the external surface of the body, less circulation carries nutrients and oxygen to the active muscles, the brain, and other internal organs. Strength soon declines and fatigue occurs earlier than it would otherwise. Alertness and mental capacity also may be impaired. Employees who must perform delicate or detailed work may find their accuracy suffering, and others may find their comprehension and retention of information lowered. Because the loss of body fluid as sweat reduces blood volume, it further interferes with normal functions and makes subsequent cooling even harder.

Failure to recognize the signs and symptoms of heat stress can result in serious illness or even death. Employees who observe fellow employees exhibiting any symptoms of heat illness must **immediately** report these symptoms to their supervisor. Most heat illness victims are not aware of the danger they are in due to diminished rational thinking caused by the heat stress itself.

Contributing Factors

Many factors influence heat illnesses. You can control some factors, but not others:

- **Heat** – Ambient temperature at the jobsite.
- **Humidity** – The amount of moisture in the air.
- **Air Movement** – A light wind can act as a refresher, but too much wind can increase your body's dehydration rate.
- **Exertion** – How much effort a person expends while working.
- **Clothing** – Thick, heavy clothing acts as insulation that can greatly decrease the body's ability to dissipate its heat and control its temperature. Darker clothing generally absorbs more solar heat.
- **Condition** – Your overall physical condition can play a huge role in how your body reacts to hot conditions and tolerates loss of fluids.
- **Water Consumption** – Drinking plenty of water, especially on hot days, is crucial to replace fluids lost as sweat and preventing heat illness.
- **Alcohol Use** – Alcohol dehydrates the body. By drinking a lot of alcohol the night before, you will already be dehydrated before your workday even starts, greatly increasing your risk of heat illness.
- **Acclimatization** – The extent to which your body had adjusted to working in hot weather by starting to sweat earlier and with less loss of electrolytes.

Definitions

Acclimatization means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within 4-14 days of regular work for at least two hours per day in the heat.

Heat illness means a serious medical condition resulting from the body's inability to cope with a particular heat load, including heat cramps, heat exhaustion, heat syncope (i.e., fainting) and heat stroke (i.e., impairment of brain or nervous system stemming from dangerously elevated body temperature).

Environmental risk factors for heat illness means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, work load severity and duration and protective clothing and personal protective equipment worn by employees.

Personal risk factors from heat illness means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and the use of medications or other drugs that affect the body's water retention or other psychological responses to heat.

Shade means blockage of direct sunlight. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning. Shade may be provided by any natural or artificial means that do not expose employees to unsafe or unhealthy conditions.

Temperature means the dry-bulb temperature in degrees Fahrenheit obtainable by using a thermometer to measure the outdoor temperature in an area where there is no shade. While the temperature measurement must be taken in an area with full sunlight, the sensor of the thermometer should be shielded by the hand or some other object, from direct contact by sunlight.

Disorders Related to Heat Stress

Disorders related to heat stress and their causes, symptoms, treatment and prevention are summarized below:

Mild: Heat Cramps

This is often the earliest and least serious form of heat illness. It isn't dangerous unless the symptoms aren't treated. You should get treated and tell your supervisor.

Signs and Symptoms

- Having painful spasms in your muscles during activity or hours afterward (heat cramps)

Treatment

- Rest in a cool, shady area.
- For muscle cramps, use warm, moist compresses. Then massage gently.
- Drink water or a sport drink

Moderate: Heat Exhaustion

This is a serious form of heat illness that can progress to stroke if not treated right away. You may need to take a break from work and get medical attention.

Signs and Symptoms

- Sweating a lot
- Cold, moist, pale, or flushed skin
- Feeling very weak or tired
- Headache, nausea, loss of appetite
- Feeling dizzy or giddy
- Rapid or weak pulse

Treatment

- Resting in a cool area.
- Drinking water or a sport drink. In some cases, a medical professional will need to administer fluids.
- Taking salt, if instructed.
- Using cool compresses on the forehead, around the neck, and under armpits. Blowing air across skin with fans.

Severe: Heat Stroke

This is a serious, life threatening medical emergency. If not treated right away, heat stroke can lead to permanent brain damage and even death.

Signs and Symptoms

- Sweating stops
- Hot, dry skin that looks red, mottled or bluish.
- Deep, fast breathing
- Headache or nausea
- Rapid, weak, or irregular pulse
- Feeling dizzy, confused, or delirious
- Fainting
- Having convulsions

Treatment

- Call 9-1-1 immediately
- Implement Emergency Response Procedures
- Rest in a cool area.
- Have clothing soaked with cool water, or remove outer clothing and be wrapped with a sheet soaked in cool water.

- Be blown with fans
- Drink water or a sport drink. (Do not try to give water to someone who is unconscious.)

Supervisor/Company Responsibilities

- Each supervisor is responsible for carrying out the procedures of this policy and the training of employees under his or her direct supervision that are specific to the employee's work locations. Procedures and responsibilities will be communicated to all employees working outdoors, and in particular to the supervisory employees assigned program responsibilities through training, general safety meetings and tailgate meetings.
- Supervisors shall take personal factors and physical work factors into consideration before assigning employees to a task.

Provision of Water

Every field supervisor shall carry out the following procedures:

- Bring to the worksite fresh, pure and suitably cool drinking water in containers (5 to 10 gallons each) so that at least one quart per employee per hour is available at the start of the shift. Smaller quantities of such drinking water may be brought at the beginning of the work shift if the supervisor follows the replenishment procedure noted below.
- Bring sufficient paper cone cups or bags of disposable cups and the necessary cup dispensers to ensure that enough disposable cups are made available for each employee and are kept clean until used.
- Check the water level of all containers at least once an hour, and more frequently when the temperature exceeds 80 deg. F. When the water level within a container drops below 50%, refill it with fresh, pure and suitably cool water from additional water containers (i.e., 5 gallon bottles), or replace it with a full container. Monitor and replace water as needed throughout the day to ensure at least one quart per employee per hour is available.
- When the temperature exceeds 80 deg. F., carry ice in separate clean containers, so that when necessary, it will be added to the drinking water to keep it suitably cool.
- Continuously monitor the worksite and place water containers as close as practical to employees so that it is readily accessible. If field terrain prevents the water from being readily accessible to the employees, bring bottled water or individual containers (in addition to disposable cups and water containers), so that employees can have drinking water readily accessible.
- Relocate water containers throughout the day to follow crews so that drinking water will be readily accessible at all times.
- Clean the water containers and ensure they are kept in sanitary condition
- Point out to employees daily the location of water containers and remind them to drink water frequently. When the temperature exceeds or is expected to exceed 80 deg. F., hold a brief "tailgate" meeting each morning to review with employees the importance of drinking water throughout the workday, the number and schedule of water and rest breaks, and the signs and symptoms of heat illness.
- When the temperature equals or exceeds 90 deg. F. or during a heat wave, consider increasing the number of water breaks, and remind employees to drink plenty of water.

- During employee training sessions, stress the importance of drinking water frequently.

Access to Shade

To minimize the risk of heat illnesses and to ensure access to shade at all times, Celtic Commercial Painting, LLC. has adopted and adheres to the following policies:

- Employees are allowed and encouraged to take a cool-down rest in the shade for a period of no less than 5 minutes when they feel the need to do so to protect themselves from overheating. Such access to shade is permitted at all times, irrespective of the temperature.
- Where a work area with employees present does not have adjacent to it an adequately large area shaded by a permanent natural or permanent artificial structural shade, the field supervisor must setup portable shade structure so it is immediately available when the temperature exceeds 80 deg. F. Such portable shaded area must be open to the air or provided with ventilation or cooling. The amount of shade present must be sufficient to accommodate 25% of employees on the shift at any time, so they can sit in a normal posture fully in the shade without having physical contact with each other. The shaded areas must be located as close as practicable to areas where the employees are working. When the outdoor temperature in the work areas does not exceed 80 deg. F., the supervisor provides shade either as above, or timely upon an employee's request.
- A vehicle sitting in the sun does not provide acceptable shade to an employee inside it, unless the vehicle is running with air conditioning that is functional.
- The supervisor points out the location of the shade structures and shaded areas to employees each day.
- The supervisor ensures that the portable shade structures are relocated to follow the crew and double-checks to ensure they are as close as practicable to the employees at all times.
- In situations where trees or other vegetation are used to provide shade (such as in orchards), the supervisor evaluates the thickness and shape of the shaded area (given the changing angles of the sun during the entire shift), in determining whether it will cast sufficient shadow to protect employees throughout the shift.
- In situations where it is not safe to provide shade (e.g., winds of more than 40 mph), or it is not feasible to provide it continuously (e.g., employee is roving on an all-terrain vehicle), the supervisor must document how this determination was made and what steps will be taken to provide shade upon request.

Procedures for Monitoring the Weather

Prior to each workday, the supervisor will do the following:

- Review the forecasted temperature and humidity for the worksite, refer to the National Weather Service Heat Index, and evaluate the risk level for heat illness, for instance, whether employees will be exposed to a temperature and humidity characterized as either "extreme caution" or "extreme danger" for heat illnesses such as heat stroke. Consider the potential effect of direct exposure to the sun in this evaluation.

- Monitor the weather with the aid of a thermometer at the worksite. Consider weather information in determining the necessity to make work schedule modifications, such as starting or stopping work early, rescheduling the job, working at night or during cooler hours of the day, or increasing the number of water and rest breaks.
- Use a thermometer at the jobsite to check the temperature at least hourly to monitor any sudden increases in temperature; ensure that once the temperature exceeds 80 deg. F., the shade structures are open and accessible to employees; and make certain that once the temperature equals or exceeds 90 deg. F., additional preventative "high-heat procedures" are implemented.

Handling a Heat Wave (Acclimatization)

A "heat wave" means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days. During a heat wave:

- All employees shall be closely observed by a supervisor or designee.
- Follow the acclimatization schedule and ensure that newly assigned employees are closely observed by a supervisor or designee for the first 14 days of employment.

Celtic Commercial Painting, LLC. takes the following additional "high-heat" precautions, to the extent practicable, when the temperature equals or exceeds 90 deg. F.

- Consider starting the workday early, stopping work early, rescheduling the job, working at night or during cooler hours of the day, or increasing the number of water and rest breaks. (The specific action taken shall be documented, as applicable.)
- Conduct pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.
- Ensure that effective communication by voice, observation or electronic means (such as a cell phone or text messaging device if reception in the area is reliable) is maintained so that employees at the worksite can contact a supervisor when necessary.
- Observe all employees for alertness and signs and symptoms of heat illness.
- Remind employees throughout the workday to frequently drink plenty of water.
- Follow the acclimatization schedule and ensure that new employees are closely supervised for their first 14 days on the job.
- Assign each employee a "buddy" to be on the look-out for signs and symptoms of heat illness and ensure that emergency procedures are initiated when someone displays possible signs or symptoms of heat illness. All employees are authorized to call for emergency services when necessary.

Acclimatization Schedule

New Workers	
1st Day	20% usual work duration

2nd Day	40% usual work duration
3rd Day	60% usual work duration
4th Day	80% usual work duration
5th Day	100% usual work duration

Workers with previous experience* with the same job	
1st Day	50% usual work duration
2nd Day	60% usual work duration
3rd Day	80% usual work duration
4th Day	100% usual work duration

*Workers returning to work in the heat after an absence of 1 week or more

NOTE: Workers returning after more than 1 month away from work in the heat should follow the schedule for New Workers.

- Adjustments to the above acclimatization schedule may be needed depending on the worksite situation and on individual factors.

- Work intensity should be increased gradually under close supervision. Sudden shifts in work intensity or sudden increases in environmental temperature can increase the risk for heat illness even for acclimatized workers.

- Most workers should be able to safely handle a full workload after 4 days of gradual increase, even though they will usually not be fully acclimatized yet. Most people will continue to see beneficial improvements in heat tolerance for up to 2 weeks after exposure starts.

Employee Training

To help employees understand heat illness prevention, the supervisor trains employees in the following topics before the employees begin anticipated to result in exposure to the risk of heat illness:

- The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing and personal protective equipment.
- Celtic Commercial Painting, LLC. procedures for complying with the requirements of this program.
- The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.
- The importance of acclimatization and close supervision of new employees for the first 14 days of employment.
- The different types of heat illness and the common signs and symptoms of heat illness.

- The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, signs or symptoms of heat illness in themselves, or in co-employees.
- The Celtic Commercial Painting, LLC. procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
- The Celtic Commercial Painting, LLC. procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by emergency medical service providers.
- The Celtic Commercial Painting, LLC. procedures for insuring that, in the event of an emergency, clear and precise directions to the worksite can and will be provided as needed to emergency responders. These procedures shall include designating a person to be available to ensure that emergency procedures are invoked when appropriate.

Supervisor Training

Before supervising employees performing work anticipated to result in exposure to the risk of heat illness, Celtic Commercial Painting, LLC. provides to each supervisor effective training on the following topics:

- All of the information required to be provided in Emplolyee Training above.
- The procedures supervisors are to follow to implement the applicable provisions of this program.
- The procedures supervisors are to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.
- How to monitor weather reports and how to respond to hot weather advisories.

Procedures for Emergency Response

Celtic Commercial Painting, LLC. has established the following procedures for emergency response to heat illness and related symptoms:

- Before performing work at a particular worksite, the supervisor provides a map along with clear and precise directions (such as street or road names, distinguishing features and distances to major roads) to the worksite, to avoid the delay of emergency medical services.
- Before performing work at a particular worksite, the supervisor ensures that a qualified, appropriately trained and equipped person will be available at the site to render timely first aid if necessary. This person shall be trained in First Aid and CPR.
- Before the start of the shift, the supervisor determines if a language barrier is present at the worksite and takes steps (such as assigning responsibility to call emergency medical services to an English-speaking employee) to ensure that emergency medical services can be immediately called in the event of an emergency.
- All supervisors carry cell phones or other means of communication to ensure that emergency medical services can be called and check that these devices are functional at the worksite before each shift.

- When an employee is showing symptoms of possible heat illness, the supervisor takes immediate steps to keep the stricken employee cool and comfortable once emergency responders have been called, in order to reduce the progression to more serious illness.
- At remote locations, the supervisor designates an employee or employees to physically go to the nearest road or highway where emergency responders can see them. If daylight is diminished, the designated employee or employees are given reflective vests or flashlights in order to direct emergency responders to the location of the worksite, which may not be visible from the road or highway.
- During a heatwave or hot temperatures, employees are reminded and encouraged to immediately report to their supervisor any signs or symptoms of heat illness that they are experiencing.
- Celtic Commercial Painting, LLC. provides training for employees and supervisors that includes every detail of these written emergency procedures.

Handling a Sick Employee

The following procedures are followed by supervisors present at the worksite:

- When an employee displays signs or symptoms of possible heat illness, a trained first aid worker or supervisor checks the sick employee and determines whether resting in the shade and drinking cool water will suffice or if emergency responders are needed. The employee is not to be left alone, even in the shade.
- When an employee displays signs or symptoms of possible heat illness and no trained first aid worker or supervisor is available at the worksite, emergency service providers are to be contacted immediately.
- Emergency responders are contacted immediately if an employee displays signs or symptoms of heat illness such as loss of consciousness, incoherent speech, convulsions, red and hot face, does not look coherent, or does not get better after drinking cool water and resting in the shade. While the emergency responders are en route, the supervisor or other trained employee initiates first aid (cool the employee, place in the shade, remove excess layers of clothing, place ice packs in the armpits, fan the employee). A sick employee is not allowed to leave the worksite alone.
- If an employee displays signs or symptoms of severe heat illness (loss of consciousness, incoherent speech, convulsions, red and hot face) and the worksite is located more than 20 minutes away from a hospital, the supervisor or other employee calls emergency responders, communicates the signs and symptoms of the employee, and requests an air ambulance.

Availability of Heat Illness Prevention Program

This policy and related training documentation is available to all employees.

Fatigue Management

Definitions

Fatigue is mental or physical exhaustion that stops a person from being able to function normally.

Circadian rhythms are the internal body clock or body's natural rhythms that are repeated approximately every 24 hours.

Causes

Fatigue is caused by prolonged periods of physical and/or mental exertion without enough time to rest and recover. Fatigue can result from both work and personal life.

Work-related causes include:

- Roster design, such as too many consecutive night shifts;
- Aspects of the tasks being undertaken, such as greater workload within standard shifts; and
- Features of the working environment, such as noise or temperature extremes.

Non-work related causes include:

- Sleep disruption due to ill family members;
- Strenuous activities outside work, such as second jobs;
- Sleep disorders;
- Inappropriate use of alcohol, prescription, and illegal drugs; and
- Stress associated with financial difficulties or domestic responsibilities.

Identifying Fatigue

Signs of fatigue may include:

- Headaches and/or dizziness
- Difficulty keeping eyes open
- Constant yawning
- Muscle weakness
- Lacking energy

Immediate effects of fatigue may include:

- Lack of concentration
- Reduced short-term memory
- Increased errors

- Slower reaction times
- Impaired decision-making and judgment (including being unaware of the state of fatigue)
- Reduced immune system function

Longer-term effects of fatigue may include:

- High blood pressure and/or heart disease
- Depression and/or anxiety
- Diabetes and/or gastro-intestinal disorders

Managing Fatigue

Fatigue management is a shared responsibility between management and employees, as it involves factors both inside and outside of work. Outside of work, causes of fatigue need to be addressed by individuals, whereas work-related causes should be addressed in consultation with the relevant supervisor or manager. All employees should be trained upon hire and annually thereafter on fatigue and measures to help control it.

Responsibilities of employees include:

- Ensure they get enough sleep and come to work fresh and alert;
- Plan social activities to ensure sufficient sleep before starting work;
- Identify instances of fatigue; and
- Where a fatigue issue exists, consult their supervisor/manager.

Responsibilities of management include:

- Ensure the work schedule provides for a continuous 7 to 8 hours sleep in each 24 hours;
- Ensure sufficient time-off is available for workers for personal time or sick leave;
- Limit the amount of overtime so workers do not work longer than 12 hours in an individual shift;
- Consider rotation of employees in certain tasks to help control fatigue
- Limit the number of required, consecutive night shifts;
- Ensure there is a minimum of 12 hours to rest between consecutive shifts;
- Analyze employee work tasks to identify more strenuous tasks;
- Consider implementing more ergonomic equipment to reduce the amount of stress on the body; and
- Take appropriate action to assist any worker who are experiencing fatigue.

Breaks

Time spent away from the work environment allows workers to recover from fatigue and improve performance, vigilance, safety, and efficiency. For this reason, breaks should be taken during work shifts and not traded for an early finish time.

Consider the following when deciding on the length and frequency of breaks within a shift:

- Type of work being performed; the greater the physical and/or mental effort required, the longer the total break time required per shift; and
- Length of shifts worked; the longer the shift, the longer the total break time required per shift.

Workplace Violence

Celtic Commercial Painting, LLC. employees shall have a safe environment in which to work. Such "safe work" environments include them being free from abuse, intimidation, harassment and/or violence.

The following weapons are specifically prohibited from possession or use on any work sites or while conducting business on the Company's behalf:

- Handguns, rifles, shotguns (of any caliber, size, dimension, or firing configuration whether professionally made or homemade);
- Instruments used to deliver an electrical shock;
- Knives unless said the knife is used as a tool by a crafts person whose job description specifically requires such an object be used to perform their duties;
- Chemically or otherwise disabling sprays or similar substances unless specifically intended for self-defense.

The following acts are specifically prohibited on company work sites while conducting business on the Company's behalf:

- Performing, or threatening to perform, verbal threats, vandalism, harassment, or intimidation;
- Performing, or threatening to perform, non-verbal gestures that are designed to threaten, harass, or intimidate;
- Performing, or threatening to perform, by using electronic or telephonic methods to convey a threat, harass, or intimidate; Each employee is expected to report any observed, or heard, incidents that are within the scope of this policy to their supervisor, to another supervisor, to Human Resources, or to security. Even joking comments should be taken as serious statement until fully resolved.

NOTE: This policy extends, by association, to contractors, clients, vendors, visitors, and guests who enter a work site.

Violations and Disciplinary Action

Abusive, harassing behavior and acts of violence committed on work site locations, or while conducting company business, **WILL NOT BE TOLERATED**. Employees who engage in such conduct will be subject to disciplinary action, (see Correction Action Program, up to and including, immediate termination of employment.

Any non-employee (i.e., applicant, client, subcontractor, vendor, visitor or guest) participating in abusive, harassing behavior and acts of violence committed on work site locations, will be subject to having local law enforcement immediately notified and asked to respond to the scene of the event.

General Waste Management

Purpose

This written program documents the steps Celtic Commercial Painting, LLC. has taken to minimize General Refuse and Construction and Demolition debris resulting from various construction activities. Through the use of sound waste minimization practices utilizing a reduce, reuse, and recycle approach, Celtic Commercial Painting, LLC. will strive to reduce their volume of waste. The potential impact on the environment will be minimized with the proper handling, organization, and storage of waste and scrap materials.

Celtic Commercial Painting, LLC. has overall responsibility for coordinating Environmental Health and Safety programs in this company. Copies of the written program may be obtained at the jobsite or in the Corporate Office.

Responsibilities

The Program Administrator is responsible for:

- Issuing and administering this program and making sure that it satisfies all applicable federal, state, and local requirements.
- Identifying waste minimization opportunities and prescribing appropriate solutions.

Project Mangers, superintendents, and supervisors are responsible for:

- Estimation of the waste that will be generated prior to work being performed so the need for containers and waste removal, if necessary, can be determined.
- Coordinate with the project site or owner to ensure proper disposal of wastes or construction and demolition debris.
- Assign or ensure an employee is given the responsibility to handle the task of proper disposal, reuse, or recycling of wastes or construction and demolition debris.
- Assuring safe operations are maintained on the jobsite to prevent injuries to the eyes, face, head, hands, and feet during handling of wastes.
- Enforcing the use of this program in the areas in which it is required or necessary.

Employees are responsible for:

- Using PPE when required.
- Properly store and maintain all general and construction and demolition debris.

Definitions

General trash/refuse includes domestic, office, and warehouse wastes, paper, and other nonhazardous refuse. Waste should be free of liquids and should not include any recyclable waste, used oil, hazardous wastes, or universal wastes.

Clean construction or demolition debris, also known as “clean fill,” is defined as uncontaminated, broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement, or dirt or sand generated from construction or demolition activities.

General construction or demolition debris is defined as non-hazardous, uncontaminated materials resulting from the construction, remodeling, repair, and demolition of utilities, structures, and roads, limited to the following:

- Soil
- Wall coverings
- Reclaimed asphalt pavement
- Rock
- Plaster
- Glass
- Non-hazardous, painted wood
- Drywall
- Plastics
- Non-hazardous, treated wood
- Plumbing fixtures
- Electrical wiring
- Non-hazardous, coated wood
- Non-asbestos insulation
- Bricks
- Wood products
- Roofing shingles
- Concrete
- General roof coverings

Program Activities

Construction and demolition debris is nonhazardous, uncontaminated material resulting from construction, remodeling, repair, or demolition of utilities, structures, and roads. These materials include the following:

- Bricks, concrete, and other masonry materials
- Soil
- Rock
- Wood, including nonhazardous painted, treated, and coated wood and wood products
- Wall coverings
- Plaster
- Drywall
- Plumbing fixtures
- Non-asbestos insulation
- Roofing shingles and other roof coverings
- Reclaimed asphalt pavement

- Glass
- Plastics that do not conceal waste
- Electrical wiring and components that do not contain hazardous substances
- Piping
- Metal materials incidental to any of the materials above

Celtic Commercial Painting, LLC. shall estimate the waste that will be generated prior to work being performed so the need for containers and waste removal, if necessary, can be determined. If the same wastes or scrap materials are generated for every project, please state so in your program.

General trash includes domestic, office, and warehouse wastes; paper; and other nonhazardous refuse. Waste should be free of liquids and should not include any recyclable waste, used oil, hazardous wastes, or universal wastes.

Accumulation and Storage

- Use appropriate PPE, such as rubber or neoprene gloves, boots and safety glasses, and a facemask or goggles.
- When handling trash, use caution to avoid splinters, cuts, or other injuries.
- Trash can be accumulated in bags, drums, baskets, gondolas, or dumpsters. Outdoor receptacles should be covered to prevent storm water pollution.

Waste Management Locations

- Dumpsters should be kept within plain sight, if possible, to facilitate oversight of contractors or others who use it. Construction and demolition debris can be transported to a permitted facility by any hauler. The hauler is not required to have a special waste hauler's permit. You should first call the disposal facility to determine if it accepts construction and demolition debris.
- If you have lead-based paint that was removed from non-household waste (for example, paint that was removed from the substrate), the paint waste must be tested by a laboratory using the toxicity characteristic leachate procedure (TCLP) before landfilling. Currently, this waste must be managed as a special waste.
- Well-labeled trash barrels are to be located throughout the jobsite, covered, and labeled "General Trash."

Recycling and Disposal

All general refuse other than office waste is currently thrown in the dumpster and hauled to the landfill. Employees will be made aware of the proper disposal of waste at their job. However, every effort should be made to recycle or reuse certain types of general refuse.

Three recycling methods available to contractors for construction and demolition debris include the following:

- **Mixed material collection** – Recyclable materials are transported from the jobsite, sorted at a designated facility, and sent to processors for recycling.
- **Source separation** – Similar materials are separated from other wastes at the jobsite by category (such as wood, metal, and concrete) and sent to processors for recycling.
- **On-site processing** – Recyclable materials are processed on-site and made ready for reuse.

Waste Prevention Planning

- Voluntary recycling requirements for project recyclables include:
  - Newspaper
  - Corrugated cardboard
  - White and colored office paper
  - Glass bottles and jars
  - Metal cans
- Compliance with IEPA and Illinois Landfill Bans, i.e., no disposal of tires, appliances, yard waste, mandatory recyclables, hazardous waste, batteries, fluorescent tubes, and large metal items.
- Project Construction Documents – Requirements for waste management that will be included in all work. The General Contractor will contractually require all subcontractors to comply with any client-driven mandatory recycling requirements. A copy of this Construction Waste Management Plan will accompany all Subcontractor Agreements and require subcontractor participation.
- The Construction Waste Reduction Plan shall be implemented and executed as follows and as on the chart:
  - Salvageable materials will be diverted from disposal where feasible.
  - There will be a designated area on the construction site reserved for a row of dumpsters, each specifically labeled for respective materials to be received.
  - Before proceeding with any removal of construction materials from the construction site, Recycling Coordinators will inspect containers for compliance with local landfill requirements.
  - Wood cutting will occur in centralized locations to maximize reuse and make collection easier.
  - Hazardous waste will be managed by a licensed hazardous waste vendor.

Communication and Education Plan

- The General Contractor will conduct an on-site pre-construction meeting with subcontractors. Attendance will be required for the subcontractor's key field personnel. The purpose of the meeting is to reinforce to subcontractor's key field employees the commitments made by their companies with regard to the project goals and requirements.
- As each new subcontractor comes onsite, the recycling coordinators will present him/her with a copy of the Waste Management Plan and provide a tour of the recycling areas.
- The subcontractor will be expected to make sure all their crews comply with the Waste Management Plan.

- All recycling containers will be clearly labeled. Containers shall be located in close proximity to the building(s) under construction in which recyclables/salvageable materials will be placed.
- Lists of acceptable/unacceptable materials will be posted throughout the site.
- All subcontractors will be informed in writing of the importance of non-contamination with other materials or trash.

Recycling coordinators shall inspect the containers on a weekly basis to ensure no contamination is occurring, and precautions shall also be taken to deter any contamination by the public.