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Policy Statement on Safety

The health and safety of each Cirks Construction Inc. employee is of primary importance to us. As a company, we are committed to maintaining a healthy and safe working environment. Management will provide necessary safeguards, programs, and equipment required to reduce the potential for incidents and injuries.

To achieve this goal, we have developed and implemented a comprehensive Health, Safety & Environmental Manual (HSE), which incorporates all required components of an Injury and Illness Prevention Program (IIPP). This program is designed to prevent workplace incidents, injuries, and illnesses. A complete copy of the program is maintained at our corporate office and on all job site locations in written or electronic form. You may ask to review it at any time. A copy of relevant portions of the program that are applicable to your job will also be provided to you. You may also contact the corporate Safety Director if you have any questions or concerns.

It is the intent of Cirks Construction Inc. to comply with all laws relating to occupational health and safety. To accomplish this, we require the active participation and assistance of all employees. The policies and procedures contained in this manual are mandatory. You should also be constantly aware of conditions in all work areas that can produce injuries or illness. No employee is required to work at a job that he or she knows is unsafe. Never hesitate to inform your supervisor or foreman of any potentially hazardous situation or condition that is beyond your ability or authority to correct immediately. No employee will be discriminated against for reporting safety concerns to management.

It is the responsibility of each employee to support the company safety program and to perform in a manner that assures his or her own personal safety and the safety of others, including customers, visitors, and other trades. To be successful in our endeavor, all employees at every level must adopt proper attitudes towards injury and illness prevention. We must also cooperate in all health and safety matters, not only between management and employees, but also between each employee and his or her respective co-workers. Only through such an effort can any safety program be successful. Our objective is a health and safety program that will reduce the total number of injuries and illnesses to an absolute minimum. Our ultimate goal is zero incidents.

Ken Cirks
President
Cirks Construction Inc.
**Duties and Responsibilities for Safety**

A successful Health, Safety, Environmental and Injury and Illness Prevention Program can only be achieved and maintained when there is active interest, participation, and accountability at all levels of the organization. At Cirks Construction Inc., it is a condition of employment that all employees are responsible for safety. To ensure this, Cirks Construction Inc. delegates the following safety duties by job title. Please keep in mind that this is not an all-inclusive list. In some cases, employees will need to perform safety duties outside their regular responsibilities to prevent incidents.

**Stuart Nakutin, Safety Director, referenced forward as “Safety Director” can be reached at (714) 400-5023. The Safety Director will plan, organize, and administer the program by establishing policy, setting goals and objectives, assigning responsibility, motivating subordinates, and monitoring results. All employees of Cirks Construction Inc. will support and maintain an ongoing Health, Safety, Environmental and Injury and Illness Prevention Program through the following:**

1. Provide clear understanding and direction to all management, employees, and subcontractors regarding the importance of safety through the development, implementation, monitoring, and revision of policies and procedures.

2. Provide financial support for the Injury and Illness Prevention Program through the provision of adequate funds for the purchase of necessary safety materials, safety equipment, proper personal protective equipment, adequate time for employee safety training, and maintenance of tools and equipment.

3. Oversee development, implementation, and maintenance of the IIPP and other required safety programs.

4. Maintain a company commitment to incident prevention by expecting safe conduct on the part of all managers, supervisors, and employees.

5. Hold all levels of management and employees accountable for incident prevention and safety.

6. Review all incident investigations to determine corrective action.

**The Safety Director for Cirks Construction Inc. acts as a safety resource for the company and is responsible for maintaining program records. The Safety Director is also our primary person to deal with outside agencies regarding the safety program and its contents. Additional duties include:**

1. Coordinate all loss prevention activities as a representative of management.

2. Act as a consultant to management in the implementation and administration of the Safety Program.

3. Develop and implement loss prevention policies and procedures designed to ensure compliance with the applicable rules and regulations of all federal, state, and local agencies.

4. Review all incident reports to determine root cause and corrective action.

5. Conduct periodic reviews of the safety program and job sites to evaluate performance, discuss problems, and help solve them.

6. Consult with representatives of our insurance companies in order that their loss control services will support the safety program.
7. Review Workers’ Compensation claims. Help supply the insurance carrier with information about injured employees in order to keep loss reserves to a minimum.

**Managers and supervisors play a key role in the prevention of incidents on the job. They have direct contact with the employees and know the safety requirements for various jobs. Safety responsibilities for these individuals include:**

1. Enforce all safety rules in the Code of Safe Practices, the posted job site rules, and ensure safe work procedures.
2. Verify corrective action has been taken regarding safety hazards and incident investigations.
3. Conduct periodic documented inspections of the work sites to identify and correct unsafe actions and conditions that could cause incidents.
4. Act as a leader in company safety policy and set a good example by following all safety rules.
5. Become familiar with federal, state, and local safety regulations. The Safety Director is available for assistance.
6. Under the guidance of the safety director, train all new and existing employees in proper safety procedures and the hazards of the job.
7. Instruct all employees under his or her supervision in safe work practices and job safety requirements.
8. Hold safety meetings with employees.
9. Ensure employee proficiency when assigning work requiring specific knowledge, special operations, or equipment.
10. Ascertain that all machinery, equipment, and workstations are maintained in safe working condition and operate properly.
11. Correct unsafe acts and conditions that could cause incidents.
12. Communicate with all employees about safety and incident prevention activities.
13. Correct the cause of any incident as soon as possible.
14. Ascertain that proper first aid and firefighting equipment is maintained and used when conditions warrant its use.
15. Maintain good housekeeping conditions at all times.
16. Investigate all injuries and incidents to determine their cause and potential corrective action.
17. Ascertain that all injuries involving our employees that require medical attention are properly treated and promptly reported immediately following the procedures laid out in our post incident response protocol.

**Every employee is responsible for working safely, both for self-protection and for protection of fellow co-workers. Employees must also support all company safety efforts. Specific employee safety responsibilities include:**

1. If you are unsure how to do any task safely, ask your supervisor.
2. Read and abide by all requirements of the Health, Safety, Environmental Manual and Injury and Illness Prevention Program (IIPP).
3. Know and follow the Code of Safe Practices and all company safety policies and procedures.
4. Wear all required personal protective equipment (PPE).
5. Report all incidents and injuries, no matter how minor, to your supervisor immediately.
6. Do not operate any equipment you have not been trained on or authorized to use.
7. Report any safety hazards or defective equipment immediately to your supervisor.
8. Do not remove, tamper with, or defeat any guard, safety device, or interlock.
9. Never use any equipment with inoperative or missing guards, safety devices, or interlocks.
10. Never possess or be under the influence of alcohol or controlled substances while on the premises.
11. Never engage in horseplay or fighting.
12. Participate in and actively support the safety program.
Employee Safety Training

California law requires that employees be trained in the safe methods of performing their job. Cirks Construction Inc. is committed to instructing all employees in healthy and safe work practices. Awareness of potential hazards, as well as knowledge of how to control them, is critical in maintaining a healthy and safe work environment in preventing injuries. To achieve this goal, we will provide training to each employee on general safety issues and safety procedures specific to that employee's work assignment.

Every new field employee will be given instruction by his or her supervisor in the general safety requirements of their job. A copy of our Code of Safe Practices shall also be provided to each employee.

Field managers, supervisors, and employees will be trained at least twice per year on various incident prevention topics.

Training provides the following benefits:

- Makes employees aware of job hazards
- Teaches employees to perform jobs safely
- Promotes two-way communication
- Encourages safety suggestions
- Creates interest in the safety program
- Fulfills CAL-OSHA requirements

Employee training will be provided at the following times:

1. New field employees will receive a safety orientation.
2. New field employees will be given a copy of the Code of Safe Practices and required to read and sign for it.
3. Employees given a new job assignment, for which training has not been previously provided, will be trained before beginning the new assignment.
4. Whenever new substances, processes, procedures, or equipment that represent a new hazard are introduced into the workplace.
5. Whenever Cirks Construction Inc. is made aware of a new or previously unrecognized hazard.
6. Whenever management believes that additional training is necessary.
7. After all serious incidents.
8. When employees are not following safe work policies and procedures.

Training topics will include, but are not be limited to:

- Code of Safe Practices
- Employee’s safety responsibility
- General safety rules
• Safe job procedures
• Ergonomics
• Safe lifting and material handling practices
• Use of hazardous materials
• Use of equipment
• Emergency procedures
• Contents of the safety program

Documentation of Training:

“New Employee Safety Orientation Form”

The following training method should be used. Actual demonstrations of the proper way to perform a task are very helpful in most cases.

• **Instruct them** how to do the job safely.
• **Train them** how to do the job safely.
• **Have them tell you** how to do the job safely.
• **Have them show you** how to do the job safely.
• **Follow up** to ensure they are still performing the job safely.
Field Employee Safety Training

The supervisor will verbally cover the following items with each new field employee on the first day of their employment.

Employee Name: ________________________________  Start Date: __________________

Safety Manager/Supervisor: ______________________________________________________

Employee Position: ______________________________________________________________

Instruction has been received in the following areas:

☐ 2. Hazard Communication (Right to Know Policy)
☐ 3. Driving Safety Rules.*
☐ 4. Safety rule enforcement procedures.
☐ 5. Necessity of reporting ALL injuries, no matter how minor, IMMEDIATELY.
☐ 6. Proper method of reporting safety hazards.
☐ 7. Emergency procedures and First Aid.
☐ 8. Proper work clothing and required personal protective equipment.
☐ 9. List all special equipment, such as lifts, employee is trained and authorized to operate.
☐ 10. Emergency Exits and Fire Extinguishers.

* Give a copy of these items to the employee.

Note any special requirements:
___________________________________________________________________________
___________________________________________________________________________

I agree to abide by all company safety polices and the Code of Safe Practices. I also understand that failure to do so may result in disciplinary action or possible termination.

Signature: ______________________________________________  (Employee)

Signature: ______________________________________________  (Safety Manager / Supervisor)
Safety Communication

This section establishes procedures designed to develop and maintain employee involvement and interest in the HSE Manual and IIPP. These activities will also ensure effective communication between management and employees on safety related issues that is of prime importance to Cirks Construction Inc. The following are some of the safety communication methods that may be used:

2. Periodic safety meetings with employees that encourage participation and open two-way communication.
3. Provision and maintenance of employee notices discussing safety issues, incidents, and general safety suggestions.
4. Written communications from management or the safety director, including memos, postings, payroll stuffers, and newsletters.
5. Anonymous safety suggestion program.

Employees will be kept advised of highlights and changes relating to the safety program. Management shall relay changes and improvements regarding the safety program to employees, as appropriate. Employees will be involved in future developments and safety activities by requesting their opinions and comments be reviewed, as necessary.

All employee-initiated safety related suggestions shall be properly answered, either verbally or in writing, by the appropriate level of management. All employees are encouraged to bring any safety concerns they may have to the attention of management. Cirks Construction Inc. will not discriminate against any employee for raising safety issues or concerns.

Cirks Construction Inc. welcomes anonymous notification whereby employees who wish to inform the company of workplace hazards without identifying themselves may do so by phoning or sending written notification to the Safety Director or company manager.
Enforcement of Safety Policies

The compliance of all employees with the Cirks Construction Inc. HSE Manual and IIPP is mandatory and shall be considered a condition of employment.

The following programs will be utilized to ensure employee compliance with the safety program and all safety rules.

- Training programs
- Retraining
- Optional safety incentive programs
- Disciplinary action

Training Programs

The importance of safe work practices and the consequences of failing to abide by safety rules will be covered in the New Employee Safety Orientation and safety meetings. This will help ensure that all employees understand and abide by Cirks Construction Inc. safety policies.

Safety Correction Notices

Employees or subcontractors that are observed performing unsafe acts or not following proper policies or procedures will be corrected by their supervisor. A Safety Correction Notice may be completed by the supervisor to document the infraction. If multiple employees are involved, additional safety training will be held.

Safety Incentive Programs

Although strict adherence to safety policies and procedures is required of all employees, the company may choose to periodically provide recognition of safety-conscious employees and job sites without incidents through a safety incentive program.

Disciplinary Action

The failure of an employee to adhere to safety policies and procedures established by Cirks Construction Inc. can have a serious impact on everyone concerned. An unsafe act can not only threaten the health and well-being of the employee committing the unsafe act, but it can also affect the safety of his or her co-workers and customers. Accordingly, any employee who violates any of the Company’s safety policies and procedures will be subject to disciplinary action or dismissal.

Note: Failure to promptly report any on-the-job incident or injury, on the same day as the occurrence, is considered a serious violation of the Company’s Code of Safe Practices. Any employee who fails to immediately report a work-related incident or injury, no matter how minor, shall be subject to disciplinary action or dismissal.

Employees will be disciplined for infractions of safety policies and procedures where unsafe work practices are observed, not just those that result in an injury. Often, when an injury occurs, the incident investigation will reveal that the injury was caused because the employee violated an
established safety policy or safe work practice. In any disciplinary action, the supervisor should be cautious that discipline is given to the employee for safety violations, and not simply because the employee was injured on the job or filed a Workers’ Compensation claim.

Violations of safety rules and the Code of Safe Practices are to be considered equal to violations of other company policies.

As in all disciplinary actions, each situation is to be carefully evaluated and investigated. The particular step taken in the disciplinary process will depend on the severity of the violation, employee history, and regard to safety. Managers and supervisors should consult with the Human Resources Manager if there is any question about whether or not disciplinary action is justified. Employees may be terminated immediately for willful or extremely serious violations.
Hazard Identification and Evaluation

To assist in the identification and correction of hazards, Cirks Construction Inc. has developed the following procedures. These procedures are representative only and are not exhaustive of all the measures and methods that will be implemented to guard against injury from recognized and potential hazards in the workplace. As new hazards are identified or improved work procedures developed, they will be promptly incorporated into our Safety Manual. The following methods will be utilized to identify hazards in the workplace:

- Loss Prevention Self-Assessment
- Loss analysis of incident trends
- Incident investigations
- Employee observation
- Employee suggestions
- Regulatory requirements for our industry
- Periodic safety inspections at minimum monthly
- Documentation of inspections

Loss Analysis

Periodic loss analyses will be conducted by the Safety Director and all superintendents. These will help identify areas of concern and potential job hazards. The results of these analyses will be communicated to management, supervisors, and employees through safety meetings and other appropriate means.

Incident Investigations

All near loss incidents (NLI) must be reported. Incidents and injuries will be investigated in accordance with the guidelines contained in this program. Incident investigations will focus on causal factors and corrective action, including the identification and correction of hazards that may have contributed to the incident.

Employee Observation

Superintendents and foremen shall be continually observing employees for unsafe actions or conditions and taking corrective action as necessary.

Employee Suggestions

Employees are encouraged to report any hazard they observe to their supervisors. No employee of Cirks Construction Inc. is to ever be disciplined or discharged for reporting any workplace hazard or unsafe condition. However, employees who do NOT report potential hazards or unsafe conditions that they are aware of will be subject to disciplinary action.
Regulatory Requirements

All industries are subject to government regulations relating to safety. Many of these regulations are specific to our type of business. Copies of pertinent regulations can be obtained from the safety director.

Periodic Safety Inspections

Periodic safety inspections ensure that physical and mechanical hazards are under control and identify situations that may become potentially hazardous. Inspections shall include a review of the work habits of employees in all work areas. These inspections will be conducted by the supervisor, manager, safety director, or other designated individual.

Periodic safety inspections will be conducted:

- When new substances, processes, procedures, or equipment are used.
- When new or previously unrecognized hazards are identified.
- Periodically by the supervisor.
- Periodically by the safety director.

These inspections will focus on both unsafe employee actions as well as unsafe conditions. The following is a partial list of items to be checked:

- Compliance with the Code of Safe Practices.
- The proper use, condition, maintenance, and grounding of all electrically operated equipment.
- The proper use, condition, and maintenance of safeguards for all power-driven equipment.
- Housekeeping and personal protective equipment (PPE).
- Hazardous materials.
- Proper material storage.
- Provision of first aid equipment and emergency medical services.

Any and all hazards identified will be corrected as soon as practical in accordance with the Cirks Construction Inc. hazard correction policy.

If imminent or life-threatening hazards are identified which cannot be immediately corrected, all employees must be removed from the area, except those with special training required to correct the hazard. Employees with special training required to correct the hazard will be provided necessary safeguards.

Documentation of Inspections

Safety inspections will be documented to include the following:

- Date on which the inspection was performed.
- The name and title of person who performed the inspection.
• Any hazardous conditions noted or discovered, and the steps or procedures taken to correct them.
• Signature of the person who performed the inspection.

One copy of the completed form should be sent to the office. All reports shall be kept on file for a minimum of two (2) years.
## SAFETY AUDIT CHECKLIST

<table>
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<tr>
<th>JOB NAME</th>
<th>SUPERINTENDENT NAME</th>
<th>INSPECTION DATE</th>
<th>COMPLETION OF PROJECT</th>
<th>INSPECTOR NAME</th>
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### GENERAL

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<tr>
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<tr>
<td>CCI Signage</td>
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<td></td>
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<tr>
<td>Job Site Rules Posted</td>
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<tr>
<td>Sign In Sheet</td>
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<td></td>
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<tr>
<td>Pedestrian Protection</td>
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<tr>
<td>Perimeter Protection</td>
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<tr>
<td>Duty to Warn – Duty to Protect – Duty to Control</td>
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<tr>
<td>Accident Reporting Instructions</td>
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<tr>
<td>Safety &amp; Health Program (IIPP)</td>
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<td></td>
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<tr>
<td>Safety Data Sheets</td>
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<td></td>
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<tr>
<td>First Aid Kit</td>
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<tr>
<td>Eye Wash Station</td>
<td></td>
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<tr>
<td>Tailgate Meeting Documentation</td>
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<tr>
<td>Plans/Specs/Drawings of job</td>
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<tr>
<td>Fire Extinguishers - Fire extinguishers inspected &amp; tagged</td>
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<td>Emergency Evacuation Plan (EEP)</td>
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<td>Medical Clinic and Map</td>
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### JOB HAZARD ANALYSIS FOR CRITICAL WORK

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<td>Excavation 5 ft or greater</td>
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<td>Confined Space Work</td>
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<tr>
<td>Hot Work</td>
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<td>Working at heights in excess of 10ft</td>
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### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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<td>Face shield being used when chipping, grinding, chop saw etc.....</td>
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<tr>
<td>Hard hat</td>
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<tr>
<td>Safety Glasses</td>
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<td>Cut Resistant Gloves</td>
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<td>Class II Vest</td>
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<td>Respiratory Protection</td>
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### FALL PROTECTION

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<td>Site Specific Fall Protection Plan (SFPP) available for review</td>
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<td>Rescue Plan Completed</td>
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<td>Retrieval Method Available</td>
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<td>Equipment Inspection Conducted</td>
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<td>Fall Protection ABC’s followed</td>
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**SCAFFOLDING WORK**

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<td>Base Plates &amp; Mudsills</td>
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<td>Plank Size, spacing and construction</td>
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<tr>
<td>Guardrails</td>
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**CRANE ACTIVITY**

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<tr>
<th>CCI Crane Plan Followed</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>JHA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pic Plan Completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigging Plan</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONFINED SPACES**

<table>
<thead>
<tr>
<th>JHA completed</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined Space Plan (CSP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of sniffer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attendant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP Permit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JHA completed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DIGGING**

<table>
<thead>
<tr>
<th>Utility companies contacted and/or utilities located.</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact location of utilities marked when near excavation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underground installations protected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precautions taken to protect employees from accumulation of water.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface water controlled or diverted.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmosphere tested</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen content is between 19.5% and 21%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable gas build-up to 20% of lower explosive limit (LEL).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxic Levels of gases are below limits set on gas monitor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation blowing into space and air intake placed away from vehicle exhaust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXCAVATION/TRENDS/SHARING</td>
<td>YES</td>
<td>NO</td>
<td>N/A</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----</td>
<td>----</td>
<td>-----</td>
</tr>
<tr>
<td>Pre-Excavation Report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JHA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil Test – Type (circle one) ABC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective device</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmospheric Testing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Conditions N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description or Measure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments / Observations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrain, Weather, Water accumulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy equipment location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spoils location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trench width</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trench depth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access / egress conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ELECTRICAL</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock Out Tag Out</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JHA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailgate Meeting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLAMMABLE &amp; COMBUSTIBLE LIQUIDS</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stored and handled in appropriately container</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeled Correctly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right to Know Poster</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOBILE EQUIPMENT</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily inspection conducted on all mobile equipment - documented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner’s manual secured in all mobile equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seat belts functional and worn on mobile equipment (as required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proper attachments used on all mobile equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Hazard Correction**

The following procedures will be used to evaluate, prioritize, and correct identified safety hazards. Hazards will be corrected in order of priority; the most serious hazards will be corrected first.

### Hazard Evaluation

Factors that will be considered when evaluating hazards include:

- **Potential severity** - The potential for serious injury, illness, or fatality.
- **Likelihood of exposure** - The probability of the employee coming into contact with the hazard.
- **Frequency of exposure** - How often employees come into contact with the hazard.
- **Number of employees exposed**
- **Possible corrective actions** - What can be done to minimize or eliminate the hazard?
- **Time necessary to correct** - The time necessary to minimize or eliminate the hazard.

### Techniques for Correcting Hazards

1. **Engineering Controls**: Could include machine guarding, ventilation, noise reduction at the source, and provision of material handling equipment. These are the first and preferred methods of control.

2. **Administrative Controls**: The next most desirable method would include rotation of employees or limiting exposure time.

3. **Personal Protective Equipment**: Includes hard hats, hearing protection, respirators, and safety glasses. These are often the least effective controls for hazards and should be relied upon only when other controls are impractical.

### Documentation of Corrective Action

All corrective action taken to mitigate hazards should be documented. Depending on the circumstances, one of the following forms should be used:

- Safety contact report
- Safety meeting report
- Memo or letter
- Safety inspection form

All hazards noted on safety inspections will be re-checked on each subsequent inspection and notations made as to their status.
Incident Investigation

The supervisor, manager, or other designated individual will investigate all work-related incidents in a timely manner. This includes minor incidents and "near loss incidents," as well as serious injuries. An incident is defined as any unexpected occurrence that results in injury to personnel, damage to equipment, facilities, material, or interruption of normal operations.

Responsibility for Incident Investigation

Immediately upon being notified of an incident, the supervisor, manager, or other designated individual shall conduct an investigation. The purpose of the investigation is to determine the cause of the incident and corrective action to prevent future reoccurrence; not to fix blame or find fault. An unbiased approach is necessary in order to obtain objective findings.

The Purpose of Incident Investigations

- To prevent or decrease the likelihood of similar incidents.
- To identify and correct unsafe work practices and physical hazards. Incidents are often caused by a combination of these two factors.
- To identify training needs. This makes training more effective by focusing on factors that are most likely to cause incidents.

What Types of Incidents Do We Investigate?

- Fatalities
- Serious injuries
- Minor injuries
- Property damage
- Near losses

Procedures for Investigation of Incidents

Immediately upon being notified of an incident the supervisor, manager, or other designated individual will:

1. Visit the incident scene, as soon as possible, while facts and evidence are still fresh and before witnesses forget important details and to make sure hazardous conditions to which other employees or customers could be exposed are corrected or have been removed.
2. Provide for needed first aid or medical services for the injured employee(s).
3. If possible, interview the injured worker at the scene of the incident and verbally "walk" him or her through a re-enactment. All interviews should be conducted as privately as possible. Interview all witnesses individually and talk with anyone who has knowledge of the incident, even if they did not actually witness it.
4. Report the incident to the Safety Director and supervisors immediately. All serious incidents will be reported to the insurance carrier as soon as possible.
5. Consider taking signed statements in cases where facts are unclear or there is an element of controversy.
6. Thoroughly investigate the incident to identify all incident causes and contributing factors. Document details graphically. Use sketches, diagrams and photos as needed. Take measurements when appropriate.

7. All incidents involving death, disfigurement, amputation, loss of consciousness, or hospitalization for more than 24 hours must be reported to CAL-OSHA immediately.

8. Focus on causes and hazards. Develop an analysis of what happened, how it happened, and how it could have been prevented. Determine what caused the incident itself, not just the injury.

9. Every investigation must also include an action plan. How can such incidents be prevented in the future?

10. In the event a third party or defective product contributed to the incident, save any evidence as it could be critical to the recovery of claim costs.

Accurate and Prompt Investigations
- Ensures information is available
- Causes can be quickly corrected
- Helps identify all contributing factors
- Reflects management concerns
- Reduces chance of recurrence

Investigation Tips
- Avoid placing blame
- Document with photos and diagrams, if needed
- Be objective, get the facts
- Reconstruct the event
- Use open-ended questions

Questions to Ask
When investigating incidents, open-ended questions such as; who, what, when, where, why, and how, will provide more information than closed-ended questions such as "Were you wearing gloves?"

Examples include:
- How did it happen?
- Why did it happen?
- How could it have been prevented?
- Who was involved?
- Who witnessed the incident?
- Where were the witnesses at the time of the incident?
- What was the injured worker doing?
- What was the employee working on?
- When did it happen?
- When was the incident reported?
- Where did it happen?
- Why was the employee assigned to do the job?

The single, most important question that must be answered as the result of any investigation is:

"What do you recommend to be done (or have you done) to prevent this type of incident from recurring?"

Once the Incident Investigation is completed

- Take or recommend corrective action
- Document corrective action
- Management and the Safety Director will review the results of all investigations
- Consider safety program modifications
- Information obtained through incident investigations can be used to update to improve our current program
**Program Records**

The Safety Director will ensure the maintenance of all HSE Manual and IIPP records, for the listed periods, including:

1. New Employee Safety Orientation Forms  Length of Employment
2. Code of Safe Practices Receipt  Length of Employment
3. Disciplinary Actions for Safety  Length of Employment
4. Safety Inspections  2 years
5. Safety Meeting Reports  2 years
6. Safety Correction Notices  2 years
7. Incident Investigations  5 years
8. CAL-OSHA Log of Injuries  5 years
9. Inventory of Hazardous Materials (if any)  Indefinitely
10. Employee Exposure or Medical Records  Indefinitely

Note: Records are available for review upon request.
Emergency Medical Services and First Aid

Cirks Construction Inc. will ensure the availability of emergency medical services for its employees at all times. We will also ensure the availability of a suitable number of appropriately trained persons to render first aid. The Safety Director will maintain a list of trained individuals and take steps to provide training for those that desire it.

First-Aid Kits

Every work site shall have access to at least one first-aid kit in a weatherproof container. The first-aid kit will be inspected regularly to ensure that it is well stocked, in sanitary condition, and any used items are promptly replaced. The contents of the first-aid kit shall be arranged to be quickly found and remain sanitary. First-aid dressings shall be sterile and in individually sealed packages. The following minimum first-aid supplies shall be kept.

<table>
<thead>
<tr>
<th>Type of Supply Required by Number of Employees</th>
<th>1-5</th>
<th>6-15</th>
<th>16-200</th>
<th>200+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dressings in adequate quantities consisting of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive dressings</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Adhesive tape rolls, 1-inch wide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye dressing packet</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1-inch gauze bandage roll or compress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-inch gauze bandage roll or compress</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4-inch gauze bandage roll or compress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterile gauze pads, 2-inch square</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sterile gauze pads, 4-inch square</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sterile surgical pads suitable for pressure dressings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triangular bandages</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Safety pins</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Tweezers and scissors</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cotton-tipped applicators*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forceps*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emesis basin*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flashlight*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnifying glass*</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Portable oxygen and its breathing equipment*</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Tongue depressors*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate record forms*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>First-aid textbook, manual or equivalent*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*To be readily available but not necessarily within the first-aid kit.

Drugs, antiseptics, eye irrigation solutions, inhalants, medicines, or proprietary preparations shall not be included in Cirks Construction Inc. first-aid kits unless specifically approved, in writing, by an employer-authorized licensed physician. Other supplies and equipment, if provided, shall be in accordance with the documented recommendations of an employer-authorized licensed physician upon consideration of the extent and type of emergency care to be given based upon the anticipated incident and nature of injuries and illnesses and availability of transportation to medical care.
First Aid

The designated first aid person on each site will be available to render appropriate first aid for injuries and illnesses. Proper equipment for the prompt transportation of the injured or ill person to a physician or hospital where emergency care is provided, or an effective communication system for contacting hospitals or other emergency medical facilities, physicians, ambulance, and fire services, shall also be provided. The telephone numbers of the following emergency services in the area shall be posted near the job telephone, or otherwise made available to the employees where no job site telephone exists:

1. A company authorized physician or medical clinic, and at least one alternate if available.
2. Hospitals.
3. 911.
4. Fire-protection services.
5. Police services.

Prior to the commencement of work at any site, the supervisor or manager shall locate the nearest preferred medical facility and establish that transportation or communication methods are available in the event of an employee injury.

Each employee shall be informed of the procedures to follow in case of injury or illness through our new employee orientation program, Code of Safe Practices, and safety meetings.

Incident Procedures

These procedures are to be followed in the event of an employee injury in the course of employment:

1. For severe incidents call 911 and request the Paramedics.
2. Employees must report all work-related injuries to their supervisor immediately even if they do not feel that it requires medical attention. Failure to do so may result in a delay of Workers’ Compensation benefits and disciplinary action could be taken.
3. The supervisor and employee should determine whether or not outside medical attention is needed.
4. If medical attention is not desired or the employee refuses treatment, you must still fill out a Cirks Construction Inc. “Incident Report” in case complications arise later.
5. In all cases, if the employee cannot transport himself or herself for any reason, transportation should be provided.
6. In the event of a serious incident involving hospitalization for more than 24 hours, amputation, permanent disfigurement, loss of consciousness, or death, phone contact should be made with the office immediately. Contact must also be made by the Safety Director with the nearest CAL-OSHA office within 8 hours.
Hazard Communication Program – Materials and Chemicals

Introduction

It is the policy of Cirks Construction Inc. that the first consideration of work shall be the protection of the health and safety of all employees. We have developed this Hazard Communication Program to ensure that all employees receive adequate information about the possible hazards that may result from the various materials used in our operations. This Hazard Communication Program will be monitored by our safety director, who will be responsible for ensuring that all facets of the program are carried out, and that the program is effective.

Our program consists of the following elements:

1. Hazardous material inventory
2. Collection and maintenance of Safety Data Sheets (SDS)
3. Container labeling
4. Employee training

The following items are not required to be included in the program and are therefore omitted:

- Foods, drugs, cosmetics, and tobacco
- Untreated wood products
- Hazardous waste
- Consumer products packaged for sale to and use by the general public provided that our exposure is not significantly greater than typical consumer exposure

Hazardous Material Inventory

The job site superintendent maintains a list of all hazardous materials used in our operations. This list contains the name of the product, the type of product (solvent, adhesive, etc.), and the name and address of the manufacturer.

Safety Data Sheets (SDS)

Copies of SDS for all hazardous substances, to which our employees may be exposed, will be kept in a binder at the job site and stored electronically at the office. SDS will be made available to all employees, at all times, upon request. Copies of the most commonly used products will also be kept by the supervisor at the work site.

The safety director and on-site superintendent will be responsible for reviewing incoming SDS for new and significant health and safety information. They will ensure that any new information is passed on to the affected employees.

They will also review all incoming SDS for completeness. If an SDS is missing or obviously incomplete, a new SDS will be requested from the manufacturer. CAL-OSHA will be notified if a complete SDS is not received and the manufacturer will not supply one.
New materials will not be introduced into the shop or field until a SDS has been received. The employees purchasing materials will make it an ongoing part of their function to obtain SDS for all new materials when they are first ordered.

**Container Labeling**

No container of hazardous substances will be used unless the container is correctly labeled and the label is legible.

All chemicals in cans, bags, drums, pails, etc., will be checked by the receiving department to ensure the manufacturer’s label is intact, is legible, and has not been damaged in any manner during shipment. Any containers found to have damaged labels will be held until a new label has been installed. New labels will be obtained from the manufacturer.

The label must contain:

- The chemical name of the contents
- The appropriate hazard warnings
- The name and address of the manufacturer

All secondary containers will be labeled as to their contents with a reference to the original label.

**Employee Information and Training**

All employees will be provided information and training on the following items through the Cirks Construction Inc. safety training program and prior to starting work with hazardous substances:

1. An overview of the requirements of the Hazard Communication Standard, including their rights under this regulation.
2. Information regarding the use of hazardous substances in their specific work areas.
3. The location and availability of the written hazard communication program. The program will be available from the job site specific superintendent.
4. The physical and health hazards of the hazardous substances in use.
5. Methods and observation techniques used to determine the presence or release of hazardous substances in the work area.
6. The controls, work practices, and personal protective equipment that is available for protection against possible exposure.
7. Emergency and first aid procedures to follow if employees are exposed to hazardous substances.
8. How to read labels and Safety Data Sheets (SDS) to obtain the appropriate hazard information.

**Hazardous Non-Routine Tasks**

Infrequently, employees may be required to perform hazardous non-routine tasks. Prior to starting this work, each involved employee will be given information by his or her supervisor about hazards to which they may be exposed during such activity.
This information will include:

- The specific hazards
- Protective and safety measures which must be utilized
- The measures the company has taken to lessen the hazards, including special ventilation, respirators, the presence of another employee, emergency procedures, etc.

**Informing Outside Contractors and Vendors**

To ensure that outside contractors are not exposed to our hazardous materials, and to ensure the safety of the contractor’s employees, it will be the responsibility of the supervisor to provide outside contractors the following information:

- The hazardous substances under our control that they may be exposed to while at the work site.
- The precautions the contractor's employees must take to lessen the possibility of exposure.

We will obtain from outside contractors and vendors the name of any hazardous substances the contractor's employees may be using at a work site or bringing into our facility. The contractor must also supply a copy of the material safety data sheet relevant to these materials.

**Employee Rights Under the Hazard Communication Standard**

At any time, an employee has the right to:

- Access the SDS folder, and the Hazard Communication Program.
- Receive a copy of any environmental sampling data collected in the workplace.
- See their employment medical records upon request.

**Written Hazard Communication Plan**

The management of CCI is committed to preventing accidents and ensuring the safety and health of our employees. We will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. This written hazard communication plan is available at the following location for review by all employees: [Intranet, Office & at each job site location].

**Identifying hazardous chemicals**

Found within the SDS Master Book is a list that identifies all hazardous chemicals with a potential for employee exposure at this workplace. Detailed information about the physical, health, and other hazards of each chemical is included in a Safety Data Sheet (SDS); the product identifier for each chemical on the list matches and can be easily cross-referenced with the product identifier on its label and on its Safety Data Sheet.
Identifying containers of hazardous chemicals

All hazardous chemical containers used at this workplace will either the original manufacturer’s label -- that includes a product identifier, an appropriate signal word, hazard statement(s), pictogram(s), precautionary statement(s) and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party -- OR a label with the appropriate label elements just described; OR workplace labeling that includes the product identifier and words, pictures, symbols, or combination that provide at least general information regarding the hazards of the chemicals.

The safety director and all superintendents will ensure that all containers are appropriately labeled. No container will be released for use until this information is verified. Workplace labels must be legible and in English. Information in other languages is available upon request.

Keeping Safety Data Sheets (previously known as Material Safety Data Sheets)

Safety Data Sheets are readily available to all employees during their work shifts. Employees can review Safety Data Sheets for all hazardous chemicals used at this workplace.

The Safety Data Sheets are updated and managed by the company’s Safety Director. If a Safety Data Sheet is not immediately available for a hazardous chemical, employees can obtain the required information by contacting the Safety Director.

Training employees about chemical hazards

Before they start their jobs or are exposed to new hazardous chemicals, employees must attend a hazard communication training that covers the following topics:

- An overview of the requirements in OSHA’s hazard communication rules.
- Hazardous chemicals present in their workplace.
- Any operations in their work area where hazardous chemicals are used.
- The location of the written hazard communication plan and where it may be reviewed.
- How to understand and use the information on labels and in Safety Data Sheets.
- Physical and health hazards of the chemicals in their work areas.
- Methods used to detect the presence or release of hazardous chemicals in the work area.
- Steps we have taken to prevent or reduce exposure to these chemicals.
- How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/work practices and personal protective equipment.
- An explanation of any special labeling present in the workplace.
- Emergency procedures to follow if an employee is exposed to these chemicals.
The Safety Director is responsible to ensure that employees receive this training. After attending the training, employees will sign a form verifying that they understand the above topics and how the topics are related to our hazard communication plan.

**Informing contractors and other employers about our hazardous chemicals**

If employees of other employer(s) may be exposed to hazardous chemicals at our workplace (for example, employees of a construction contractor working on-site) it is the responsibility of the job site superintendent to provide contractors and their employees with the following information:

- The identity of the chemicals, how to review our Safety Data Sheets, and an explanation of the container and pipe labeling system.
- Safe work practices to prevent exposure.

The job site superintendents will also obtain a Safety Data Sheet for any hazardous chemical a contractor brings into the workplace.

**Hazard Communication Safety Data Sheets**

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDS) (formerly known as Material Safety Data Sheets or MSDS) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDS to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

**Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

**Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.

**Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.

**Section 4, First-aid measures** includes important symptoms/ effects, acute, delayed; required treatment.

**Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.

**Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.

**Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.

**Section 8, Exposure controls/personal protection** lists OSHA’s Permissible Exposure Limits (PELs); Threshold Limit Values (TLV); appropriate engineering controls; personal protective equipment (PPE).

**Section 9, Physical and chemical properties** list the chemical’s characteristics.

**Section 10, Stability and reactivity** lists chemical stability and possibility of hazardous reactions.

**Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
Section 12, Ecological information*
Section 13, Disposal considerations*
Section 14, Transport information*
Section 15, Regulatory information*
Section 16, Other information includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

Employers must ensure that SDS are readily accessible to employees.
Fall Protection

Cirks Construction Inc. has the following requirements for fall protection at all of our worksites.

Fall Protection is Required

When working where there is a hazard of falling 6 ft. or more from the perimeter of a structure, unprotected sides and edges, leading edges, through shaft ways and openings, sloped roof surfaces steeper than 7:12, or other sloped surfaces steeper than 40 degrees not otherwise adequately protected, fall protection is 100% mandatory, in addition it is also required when working on all temporary elevated platforms (example: scissor and boom lifts).

Fall Protection Types

One of the following four types of fall protection systems will be used when our employees are exposed to fall hazards of 6 feet or more:

1. Standard guardrails, safety cables, or floor hole covers
2. Personal fall arrest systems
3. Positioning device systems
4. Personal fall restraint systems

Standard Guardrails, Safety Cables, or Covers

These are the easiest and most cost-effective methods of providing fall protection and have a very high success rate. Standard guardrails, safety cables, floor hole, and sky light covers are our preferred means of fall protection on job sites. The following rules will be followed when using them:

1. Railings shall be constructed of wood or in an equally substantial manner from other materials. They shall consist of a top rail, not less than 42 inches or more than 45 inches in height, measured from the upper surface of the top rail to the floor, platform, runway, or ramp level. The mid-rail shall be halfway between the top rail and the floor, platform, runway, or ramp. "Selected lumber" free from damage that affects its strength shall be used.

2. Wooden posts shall be no less than 2 inches by 4 inches in cross section, spaced at 8-foot or closer intervals.

3. Wooden top railings shall be smooth and of 2-inch by 4-inch or larger material. Double, 1-inch by 4-inch members may be used for this purpose provided that one member is fastened in a flat position on top of the posts and the other fastened in an edge-up position to the inside of the posts and the side of the top member. Mid-rails shall be of at least 1-inch by 6-inch material.

4. The rails shall be placed on the side of the post that will afford the greatest support and protection.

5. All railings, including their connections and anchorage, shall be capable of withstanding, without failure, a force of at least 250 pounds applied to the top rail within 3 inches of the top edge in any outward or downward direction at any point along the top edge.
the 250-pound test load is applied in a downward direction, the top edge of the guardrail should not deflect to a height less than 42 inches above the walking/working level.

6. Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent 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 mid-rail, screen, mesh, or other intermediate member.

7. Railings exposed to heavy stresses from employees trucking or handling materials shall provide additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means.

8. The ends of the rails will not overhang the terminal posts, except where such overhang does not constitute a projection hazard.

9. Railings will be of a smooth surface to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

10. Steel banding and plastic banding shall not be used as top rails or mid-rails.

11. Railings receiving heavy stresses from employees trucking or handling materials shall provide additional strength by the use of heavier stock, closer spacing of posts, bracing, or by other means.

12. Floor, roof, and skylight openings shall be guarded by a standard railing with toe boards or a cover. Coverings shall be capable of safely supporting the greater of 400 pounds or twice the weight of worker(s) and material(s) placed thereon.

13. Coverings shall be secured in place to prevent incidental removal or displacement, and they should bear a pressure sensitized, painted, or stenciled sign with legible letters not less than one inch high, stating: "Opening--Do Not Remove." Markings of chalk or keel should not be used.

14. Ladder-way floor openings or platforms shall be guarded by standard railings with standard toe boards on all exposed sides, except at the entrance to the opening, with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

15. Floor holes, into which persons can incidentally walk, shall be guarded by either a standard railing with standard toe boards on all exposed sides, or a floor hole-cover of standard strength and construction that is secured against incidental displacement. While the cover is not in place, the floor hole should be protected by standard railings.

16. Wall openings, from which there is a drop of more than 4 feet, and the bottom of the opening is less than 3 feet above the working surface, shall be guarded with either a standard rail or intermediate rail or both.

17. An extension platform outside a wall opening onto which materials can be hoisted for handling shall have side rails or equivalent guards of standard specifications. One side of an extension platform may have removable railings in order to facilitate handling materials.

18. Wall opening protection barriers shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 250 pounds applied in any direction (except upward).

19. All elevator shafts in which cages are not installed and which are not enclosed with solid partitions and doors shall be guarded on all open sides by standard railings and toe boards.

20. A full body harness and lanyard are required when using scissor and boom lifts.
Personal Fall Arrest Systems

Personal fall arrest systems consist of a full body harness and the most appropriate connecting device attached to suitable anchorage. The system does not actually stop you from falling, but catches you and safely stops you from hitting the level below. Fall arrest systems will be our preferred means of protection when standard guardrails, safety cables, or covers are not practical. The following rules, in addition to the manufacturer's requirements and OSHA regulations, will be observed:

1. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body harnesses shall be made from synthetic fibers except when they are used in conjunction with Hot Work where the lanyard may be exposed to damage from heat or flame.

2. 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 part of a complete personal fall arrest system which maintains a safety factor of at least two; and under the supervision of a qualified person.

3. The attachment point of the body belt shall be located in the center of the wearer's back. 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.

4. Where practical, the anchor end of the lanyard shall be secured at a level not lower than the employee's waist, limiting the fall distance to a maximum of 4 feet.

5. Harnesses, lanyards, and other components shall be used only for employee protection as part of a personal fall arrest system and not to hoist materials.

6. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

7. Cirks Construction Inc. shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

8. 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.

9. Any lanyard, safety harness, or drop line subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service, and shall not be used again for employee safeguarding.

10. Personal fall arrest systems shall not be attached to guardrails, unless the guardrail is capable of safely supporting the load.

11. Each personal fall arrest system shall be inspected not less than twice annually by a competent person in accordance with the manufacturer's recommendations. The date of each inspection shall be documented.

12. Personal fall arrest systems will be rigged such that an employee can neither free fall more than 4 feet, nor contact any lower level.

13. Personal fall arrest systems will bring an employee to a complete stop. They will also 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.
Positioning Device Systems

Positioning device systems are designed to allow employees to work with both hands free at elevated locations. By their very nature, they provide some level of fall protection. They are not as effective as railings or fall arrest systems. Positioning device systems may be used together with a fall arrest system for greater safety. Their use shall conform to the following provisions:

1. Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet.
2. Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration and defective components shall be removed from service.
3. 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.
4. The use of non-locking snap hooks is prohibited.
5. Anchorage points for positioning device systems shall be capable of supporting two times the intended load or 5,000 pounds, whichever is greater.

Personal Fall Restraint Systems

Fall restraint systems are designed to prevent the wearer from reaching the edge or danger area and thus prevent them from falling. Only full body personal fall arrest systems may be used for personal fall restraint.

1. Body belts shall be at least one and five-eighths (1-5/8") inches wide.
2. Anchorage points used for fall restraint shall be capable of supporting 5,000 lbs.
3. Restraint protection shall be rigged to allow the movement of employees only as far as the sides of the working level or working area.
Aerial Lift Safety Procedures

Standard Procedures

To ensure safe practices, the following general procedure is used when an authorized user uses an aerial platform lift:

1. Obtain any necessary authorization to use the lift.
2. Check the last pre-start inspection for any comments or notes.
3. Perform a pre-start inspection on the lift, document the inspection, and place it in the reserved storage location on the lift.
4. Perform a workplace inspection in the area that the lift will be used.
5. Inspect and place your personal fall arrest systems. Note: Self-retracting lifelines are prohibited in scissor lifts.
6. Extend and adjust the outriggers, stabilizers, extendible axles, or other stability enhancing means.
7. Ensure that the guardrails are installed and are in place.
8. Ensure that the load being placed on the lift is within the rated capacity of the lift.
9. Test the controls of the lift.
10. Ensure that all personnel on the lift have been trained and authorized to operate or work on the platform.

Platform Qualifications

These are the specifications for platforms and the following criteria shall be met to be an approved platform on a lift:

1. Platform width shall be not less than 24 inches and shall have a slip resistant surface.
2. The platform shall have a guardrail system around its periphery. It is removable or can be lowered. The means used to secure it in the normal operating position shall be readily accessible for inspection and maintenance.
3. The guardrail system shall include a top rail that is between 42 and 45 inches high, a mid-rail that is approximately half-way from the platform to the top rail, and a toe board that is at least 3 ½ inches high.

When to use personal fall protection

When operating articulating or boom type lifts that are equipped with lanyard tie off points, the use of fall protection equipment is required. If special circumstances exist that encourage the operator to use fall protection on vertical aerial platform lifts, they must tie off to a proper tie off point that is not attached to or part of the aerial platform lift itself.

ANSI A92.6 series states that a worker need only be protected from falling by a properly designed and maintained guardrail system. However, if the guardrail system is less than adequate or the worker leaves the safety of the work platform, an additional fall protection device would be required. The general scaffolding fall protection provision found in 1926.451(g)(1)(vii) reads in
part, “[f]or all scaffolds not otherwise specified in this section, each employee shall be protected by the use of personal fall arrest systems or guardrails systems.”

Markings and Decals

In addition to any other markings or decals that are placed on the lift by the manufacturer, the following information shall be displayed on all aerial platform lifts in a clearly visible, accessible area, and in a durable manner:

1. The make, model, serial number, and manufacturer’s name and address.
2. The rated workload, including rated number of occupants.
3. The maximum platform height.

Safe Operation During Operation

1. Attention shall be given towards the direction of travel, clearances above, below and on all sides.
2. Employees shall not sit or climb on the guardrails of the aerial lift.
3. Planks, ladders, or other devices shall not be used on the work platform.
4. An aerial lift shall not be moved when the boom is elevated in a working position with employees in the basket.
5. Aerial lift shall not be placed against another object to steady the elevated platform.
6. Aerial lift shall not be used as a crane or other lifting device.
7. Aerial lift devices shall not be operated on grades, side slopes, or ramps that exceed the manufacturer’s recommendations.
8. The brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface.
9. Speed of aerial lift devices shall be limited according to the conditions of the ground surface, congestion, visibility, slope, location of personnel, and other factors that may cause hazards to other nearby personnel.
10. Stunt driving and horseplay shall not be permitted.
11. Booms and elevated platform devices shall not be positioned in an attempt to jack the wheels off the ground.
12. The area surrounding the elevated platform shall be cleared of personnel and equipment prior to lowering the elevated platform.
13. All equipment must be secured on the inside of the aerial lift.
14. Operators are to call for assistance if the platform or any part of the machine becomes entangled.

Inspections

The inspection process is a critical step in preventing aerial lift incidents that are caused from faulty or worn-out equipment. Aerial platform lifts that are not in proper operating condition shall be removed from service until the problems have been corrected by an authorized and trained maintenance technician.
Pre-Start Inspections

Before each day’s use or at the beginning of each shift that the aerial platform lift is used it shall be given a pre-start inspection, which is a visual inspection and functional test that includes the following criteria:

1. Operating and emergency controls.
2. Safety devices.
3. Personal protective devices.
4. Air, hydraulic, and fuel system leaks.
5. Cables and wiring harness.
6. Loose or missing parts.
7. Tires and wheels.
8. Placards, warnings, control markings, and operating manual(s).
9. Outriggers, stabilizers, and other structures.
10. Guardrail system and other items specified by manufacturer.
# Aerial Platform Lift Pre-start Inspection Form

The pre-start inspection shall be performed prior to each day’s or shift’s use of the aerial platform lift by an authorized and trained user of the lift.

*Check off the items that have been inspected or mark the N/A box if the item does not apply to the lift being inspected. Place any comments in the space provided below. If there are any of these items that are not satisfactory place the lift out of service until the item is corrected.*

Lift Provider: 

Make of lift: 
Model of lift: 
Serial #: 

Inspector’s Name: ___________________________ Date of Inspection: ____________

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<tr>
<th>Item Inspected</th>
<th>Okay</th>
<th>Not Okay</th>
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<td>Loose/missing parts (locking pins/bolts…)</td>
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<td>Tires and wheels</td>
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<td>Placards and Warnings</td>
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<td>Operational Manual</td>
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<td>Outriggers/Stabilizers</td>
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Comments:  

________________________________________________________________________
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Inspector’s Signature: ___________________________ Date: _____________
Crane, Hoist, and Sling Maintenance Testing and Inspection Requirements

INSPECTION DOCUMENTATION

1. All inspections will be documented.
2. All documentation will be maintained until any action items or notations are addressed or for one year, whichever is longer.
3. Records will be maintained by either the company safety officer or the supervisor or manager responsible for the crane, hoist, or sling.

CRANES AND HOISTS

1. Testing
   - Operational tests
     i. Prior to initial use, all new and altered cranes are tested to insure the following functions:
        a) Hoisting and lowering
        b) Trolley travel
        c) Bridge travel
        d) Limit switches, locking, and safety devices
     ii. The trip setting of hoist limit switches is determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch must be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.
   - Rated load test
     i. Test loads may not be more than 125% of the rated load unless otherwise recommended by the manufacturer. Test reports are placed on file and available.

2. Maintenance
   - Preventive Maintenance
     i. A preventive maintenance program based on the crane manufacturer's recommendations must be established.
   - Maintenance Procedure
     i. Before adjustments and repairs are started on a crane the following precautions are taken:
        a) The crane to be repaired is run to a location where it will cause the least interference with other cranes and operations in the area.
        b) All controllers are at the off position.
c) The main or emergency switch is open (off) and locked.

d) Warning or "out of order" signs are placed on the crane, also on the floor beneath or on the hook where visible from the floor.

e) Where other cranes are in operation on the same runway, rail stops or other suitable means are provided to prevent interference with the idle crane.

f) After adjustments and repairs have been made, the crane may not be operated until all guards have been reinstalled, safety devices reactivated and maintenance equipment removed.

- Adjustments and Repairs
  
  i. Any unsafe condition disclosed by the inspection requirements is corrected before operation of the crane is resumed. Adjustments and repairs are done only by designated personnel.

  ii. Adjustments shall be maintained to assure correct functioning of components. The following are examples:

  a) All functional operating mechanisms
  b) Limit switches
  c) Control systems
  d) Brakes
  e) Power plants

  iii. Repairs or replacements are provided promptly as needed for safe operation. The following are examples:

  a) Crane hooks showing defects are discarded. Repairs by welding or reshaping are not generally recommended. If such repairs are attempted, they are only be done under competent supervision and the hook must be tested to the load requirements before further use.

  b) Load attachment chains and rope slings showing defects.

  c) All critical parts which are cracked, broken, bent, or excessively worn.

  d) Pendant control stations are kept clean and function labels kept legible.

3. Rope Inspection

- Running Ropes: A thorough inspection of all ropes must be made at least once a month and documented, which includes the date of inspection, the signature of the person who performed the inspection and an identifier for the ropes which were inspected. The documentation is kept on file and readily available. Any deterioration, resulting in appreciable loss of original strength, must be carefully observed and determination made as to whether further use of the rope would constitute a safety hazard. Some of the conditions that could result in an appreciable loss of strength are the following:

  i. Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires
ii. A number of broken outside wires and the degree of distribution or concentration of such broken wires

iii. Worn outside wires

iv. Corroded or broken wires at end connections

v. Corroded, cracked, bent, worn, or improperly applied end connections

vi. Severe kinking, crushing, cutting, or un-stranding

- Other Ropes: All rope which has been idle for a period of a month or more due to shut down or storage of a crane on which it is installed are given a thorough inspection before use. This inspection is for all types of deterioration and is performed by a responsible person whose approval is required for further use of the rope. Documentation must be maintained and available for inspection which includes the date of inspection, the signature of the person who performed the inspection and an identifier for the rope which was inspected.

**SLINGS**

1. Sling Inspections

- Training. Sling operators will be trained by the sling manufacturer or installer (or other certified agency) to perform sling inspections.

- Daily inspections. The sling, all fastenings, and attachments must be inspected for damage or defects by the operator each day before being used.

- Periodic inspections. Supervisors will determine and schedule additional inspections periodically during sling use where service conditions warrant. A thorough periodic inspection is made based on frequency of sling use; severity of service conditions; nature of lifts being made; and experience gained on the service life of slings used in similar circumstances.

- Scheduled inspections. Scheduled inspections with all assigned sling inspectors will be performed. The inspections will be conducted on an annual basis at a minimum.

- Damaged/unserviceable slings. Slings found to be damaged or unserviceable will be immediately removed from service and disposed of.

**REQUIREMENTS FOR SPECIFIC TYPES OF SLINGS**

1. Alloy Steel Chain Slings

- Sling identification. Alloy steel chain slings must have permanently affixed durable identification stating size, grade, rated capacity, and reach.

- Attachments. Hooks, rings, oblong links, pear shaped links, welded or mechanical coupling links or other attachments are marked with their rated capacity (at least equal to that of the alloy steel chain with which they are used) or the sling must be limited to the rated capacity of the weakest component. Makeshift links or fasteners formed from bolts, rods, or other such attachments shall not be used.
• Inspections. A thorough periodic inspection of alloy steel chain slings in use must be made regularly based on frequency of sling use; severity of service conditions; nature of lifts being made; and experience gained on the service life of slings used in similar circumstances. Such inspections are performed annually. Records of the most recent month in which each alloy steel chain sling was thoroughly inspected must be maintained and be available for employees, OSHA personnel, or other persons having a need to know. Inspection of alloy steel chain slings are performed by trained sling inspectors only and include a thorough inspection for wear, defective welds, deformation, and increase in length. Where such defects or deterioration are present, the sling must be immediately removed from service.

• Proof testing. Before use each new, repaired, or reconditioned alloy steel chain sling, (including all welded components in the sling assembly), is proof tested by the sling manufacturer. The certificate of the proof test and shall be retained and made available to employees.

• Sling use. Alloy steel chain slings shall not be used with loads in excess of their rated capacities, or used only in accordance with the manufacturer's recommendations.

• Safe operating temperatures. Alloy steel chain slings must be permanently removed from service if they are heated above 1000°F. When exposed to service temperatures in excess of 600°F, maximum working load limits permitted are reduced in accordance with the chain or sling manufacturer’s recommendations.

• Repairing and reconditioning alloy steel chain slings. Worn or damaged alloy steel chain slings or attachments must be repaired before use. When welding or heat testing is performed, they must be proof tested by the sling manufacturer. Mechanical coupling links or low carbon steel repair links cannot be used to repair broken lengths of chain.

• Effects of wear. If the chain size at any point of any link is less than that stated the regulatory limits set in Table N-184-2 of 29 CFR 1910.184, the sling must be removed from service.

• Deformed attachments. Alloy steel chain slings with cracked or deformed master links, coupling links, or other components must be removed from service. Slings must be removed from service if hooks are cracked, have been opened more than 15 percent of the normal throat opening measured at the narrowest point, or twisted more than 10 degrees from the plane of the unbent hook.

2. Wire Rope Slings

• Sling use. Wire rope slings may not be used with loads in excess of their rated capacity, or in accordance with the manufacturer's recommendations.

• Minimum sling lengths. Cable laid, 6 x 19, and 6 x 37 slings have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves, or end fittings. Braided slings have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings. Cable laid grommets, strand laid grommets, and endless slings have a minimum circumferential length of 96 times their body diameter.
• Safe operating temperatures. Fiber core wire rope slings of all grades must 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 must be followed.

• End attachments. Welding of end attachments, except covers to thimbles, is performed prior to the assembly of the sling. All welded end attachments are proof tested to twice their rated capacity prior to initial use. Certificates of the proof test will be retained and made available.

• Removal from service. Wire rope slings must be immediately removed from service if any of the following conditions are present:
  i. Ten randomly distributed broken wires in one rope lay or five broken wires in one strand in one rope lay.
  ii. Wear or scraping of one-third the original diameter of outside individual wires.
  iii. Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.
  iv. Evidence of heat damage.
  v. End attachments that are cracked, deformed, or worn.
  vi. Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.
  vii. Corrosion of the rope or end attachments.

3. Metal Mesh Slings

• Sling marking. Each metal mesh sling must have a durable marking that states the rated capacity for vertical basket hitch and choker hitch loading permanently affixed.

• Handles. Handles have a rated capacity at least equal to the metal fabric and exhibit no deformation after proof testing.

• Attachments of handles to fabric. The fabric and handles are joined so that:
  i. The rated capacity of the sling is not reduced.
  ii. The load is evenly distributed across the width of the fabric.
  iii. Sharp edges will not damage the fabric.

• Sling coatings. Coatings which diminish the rated capacity of a sling may not be applied.

• Sling testing. All new and repaired metal mesh slings, including handles, may not be used unless proof tested by the manufacturer at a minimum of 1 1/2 times their rated capacity. Elastomer impregnated slings are proof tested before coating.
• Proper use of metal mesh slings. Metal mesh slings may not be used to lift loads in excess of their rated capacities or are used only in accordance with the manufacturer's recommendations.

• Safe operating temperatures. Metal mesh slings which are not impregnated with elastomers may be used in a temperature range from minus 20°F to plus 550°F without decreasing the working load limit. Metal mesh slings impregnated with polyvinyl chloride or neoprene may be used only in a temperature range from zero degrees to plus 200°F. For operations outside these temperature ranges or for metal mesh slings impregnated with other materials, the sling manufacturer's recommendations must be followed.

• Repairs. Metal mesh slings which are repaired may not be used unless repaired by a metal mesh sling manufacturer. Once repaired each sling is permanently marked or tagged, or a written record maintained to indicate the date and nature of the repairs and the person or organization that performed the repairs. Records of repairs must be available.

• Removal from service. Metal mesh slings must be immediately removed from service if any of the following conditions are present:
  i. A broken weld or broken brazed joint along the sling edge.
  ii. Reduction in wire diameter of 25% due to abrasion or 15% due to corrosion. Lack of flexibility due to distortion of the fabric.
  iii. Distortion of the female handle so that the depth of the slot is increased more than 10%.
  iv. Distortion of either handle which decreased the eye width more than 10%.
  v. A 15% reduction of the original cross-sectional area of metal at any point around the handle eye.
  vi. Distortion of either handle out of its plane.

4. Natural and Synthetic Fiber Rope Slings

• Sling use. Fiber rope slings made from conventional three strand construction fiber rope may not be used with loads in excess of the rated capacities or are used only in accordance with manufacturer’s recommendations. Fiber rope slings have a diameter of curvature that is specified by regulation.

• 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, follow the manufacturer's recommendations.

• Splicing. Spliced fiber rope slings may 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:
  i. Manila rope eye splices consist of at least three full tucks, and short splices of at least six full tucks, three on each side of the splice center line.
ii. Synthetic fiber rope, eye splices consist of at least four full tucks, and short splices of at least eight full tucks, four on each side of the center line.

iii. For fiber ropes and for eye and short splices, the strand end tails may not be trimmed flush with the surface of the rope when the end tails are immediately adjacent to the full tucks. For fiber ropes under one inch in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope one inch in diameter and larger, the tail projects at least six inches beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail is 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).

iv. Fiber rope slings have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.

v. Knots shall not be used in lieu of splices.

vi. Clamps not designed specifically for fiber ropes may not be used for splicing.

vii. For all eye splices, the eye is of such size to provide an included angle of not greater than 60° at the splice when the eye is placed over the load or support.

- End attachments. Fiber rope slings cannot be used if end attachments in contact with the rope have sharp edges or projections.

- Removal from service. Natural and synthetic fiber rope slings are immediately removed from service if any of the following conditions are present:
  i. Abnormal wear.
  ii. Powdered fiber between strands.
  iii. Broken or cut fibers.
  iv. Variations in the size or roundness of strands.
  v. Discoloration or rotting.
  vi. Distortion of hardware in the sling.

- Repairs. Only fiber rope slings made from new rope may be used. Use of repaired or reconditioned fiber rope slings is prohibited.

5. Synthetic Web Slings

- Sling identification. Each sling is marked or coded to show the rated capacities for each type of hitch and type of synthetic web material.

- Webbing. Synthetic webbing is of uniform thickness and width and selvage edges may not be split from the webbing width.

- Fittings. Fittings are of a minimum breaking strength equal to that of the sling and free of all sharp edges that could in any way damage the webbing.

- Attachment of end fittings to webbing and formation of eyes. Stitching is the only method used to attach end fittings to webbing and to form eyes. The thread must
be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

- Sling use. Synthetic web slings may not be used with loads in excess of the rated capacities or are used only in accordance with the manufacturer's recommendations.

- Environmental conditions. When synthetic web slings are used, the following precautions shall be taken:
  1. Nylon web slings cannot be used where fumes, vapors, sprays, mists, or liquids of acids or phenolics are present.
  2. Polyester and polypropylene web slings cannot be used where fumes, vapors, sprays, mist, or liquids of caustics are present.
  3. Web slings with aluminum fittings cannot be used where fumes, vapors, sprays, mist, or liquids of caustics are present.

- Safe operating temperatures. Synthetic web slings of polyester and nylon may not be used at temperatures in excess of 180°F. Polypropylene web slings may not be used at temperatures in excess of 200°F.

- Repairs. Synthetic web slings which are repaired must not be used unless repaired by a sling manufacturer. Each repaired sling is proof tested by the manufacturer to twice the rated capacity prior to its return to service. The employer must retain a certificate of the proof test and make it available. Slings, including webbing and fittings, which have been repaired in a temporary manner may not be used.

- Removal from service. Synthetic web slings must be immediately removed from service if any of the following conditions are present:
  1. Acid or caustic burns.
  2. Melting or charring of any part of the sling surface.
  3. Snags, punctures, tears, or cuts.
  4. Broken or worn stitches.
  5. Distortion of fittings.
Crane Policy and Workbook

Introduction

Significant risk to individuals and property associated with crane and hoisting operations justify special efforts to improve crane and hoisting safety as an integral part of our jobs at Cirks Construction Inc.

Cranes are essential tools for many construction projects. Cranes have multiple uses and configurations on projects that range from residential and commercial through heavy industrial, infrastructure and marine construction.

Cranes accidents cost time and money for a number of reasons:
1. Cranes are expensive
2. Loads are often of high-value
3. Cost of substitute crane service
4. Project progress disruption, short term
5. Project schedule disruption, long term
6. Insurance and compensation costs
7. Litigation costs

Roles and Responsibilities

Key Concepts: Safety Planning
- Safety must be planned
- Safety Program is the corporate philosophy
- Safety Plan is the implementation of the corporate philosophy
- Site Specific Safety Plan – Start early – Specific to site and job to be effective
- Lift Plans: General, Production, Critical

Key Concepts: Roles & Responsibilities of Management
- Safety is ALWAYS from the Top Down
- All management & supervisors play specific roles
- Contract documents spell out roles & responsibilities

Many organizations are involved with crane safety on the construction site. While the key organization is the contractor, many others, ranging from Crane Manufacturers to Industrial Associations are significantly involved. Many of these organizations are not actually present on the construction site. All of these organizations are collectively referred to as "Responsible Organizations.” The "Work Performed" is the collective group of diverse tasks that these organizations perform.
Work Performed

1. Project

- **Contract Document.** The contract between the owner and the entity constructing the project.

2. Crane

- **Design.** The complete design of the crane and attachments, including supplying necessary operating and maintenance manuals.
- **Fabrication.** The fabrication of the crane and attachments.
- **Manuals.** All manuals for operation, maintenance, erection, dismantling and transport, including load rating charts for all configurations and ground loadings for various outrigger configurations.
- **Certification (Crane).** Required by governmental agencies to assure that the crane is mechanically and structurally able to perform within the criteria established by the manufacturer.

3. Operation

- **Crane Safety Plan.** The Crane Safety Plan is a compilation of on-site crane operations planned in detail. It is part of the Site Safety Plan and utilizes appropriate elements of the Crane Safety Program and conforms to instructions in the contract documents.
- **Transport (On Site).** Moving the crane within the site.
- **Transport (Off Site).** Moving the crane to and from the site.
- **Erection.** Original assembling and any subsequent reassembling of the crane at the job site.
- **Use.** The operation of the crane.
- **Dismantling.** On-site crane's final tear down and load out or any interim tear down for movement on site.

4. Training of Employees of the Entities Constructing the Project.

- **Managers.** Corporate and site management including project managers, superintendents, engineers, and safety personnel.
- **Supervisors.** Supervisory personnel directly or indirectly involved with crane operations.
- **Riggers.** All rigging personnel or personnel doing rigging operations.
- **Operators.** All crane operators.

The Responsibility Matrix (Table 1 below) indicates that there are "Responsible Organizations" that may perform any number of the "Work Performed" categories at specific "Responsibility Levels." These combine to make an extremely complex situation. A clear definition or understanding of each of these matrix elements is essential for the owner, the PC/GC/CM, the
crane provider, the crane user, and all others involved in crane and hosting operations utilizing methodology to enhance crane safety on construction sites, thereby reducing or eliminating crane accidents.

Construction site crane operations involve many entities. These entities may never have worked together as a group nor worked together on a specific project. Therefore, establishing coordination and communication is of prime importance.

All on-site entities must have safety programs with cranes being a part of most of these programs. One of the PC/GC/CM's responsibilities is to coordinate these programs and to develop a site-specific safety plan for the project. The PC/GC/CM, the crane service provider and crane user must all know what specific duties and responsibilities are assigned to each. These duties and responsibilities must reflect project conditions so site specific requirements must be addressed in a plan called the Site-Specific Crane Safety Plan. The plan shall include elements of the various safety programs and address site-specific conditions.

**Table 1. Roles and Responsibilities Matrix**

<table>
<thead>
<tr>
<th>Responsible Organization</th>
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<th>Construction</th>
<th>Project</th>
<th>Crane</th>
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<td>Industry Associations</td>
<td>Professional Societies</td>
<td>Certification (Personnel)</td>
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<td>Operators</td>
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</tbody>
</table>

1 If the Owner and A & E are one entity then the owner has the responsibilities of both.
2 The SP may be employed by the PC/CM or other User. If the SP is the PC/CM or other User then SP responsibilities always flow upward to either the PC/CM or other user.
3 Employees of either the PC/CM or User.

RESPONSIBILITY LEVELS

A = Action Agent Primary. The organization that initiates the performance of and may perform the work.

a = Action Agent Secondary. An organization that performs the work and passes the work product to the Action Agent Primary

G = Guidance. An organization that provides guidelines, manuals, and/or suggestions relating to the "Work Performed."

p = Primary Responsibility. An organization that is responsible for assuring that certain work is performed.

P = Primary Responsibility plus Primary Action Agent. An organization that is responsible for assuring that work is performed as well as being the Action Agent for performing work

S = Secondary Responsibility. An organization that does not have Primary Responsibility but has a compelling interest in seeing that the work is performed

C = Sets crane capability. An organization that sets the crane's capability

R = Makes rules. An organization that makes rules for various crane operations Blank - No designated responsibility

Owner's Involvement in Crane Safety

Owners should recognize that active, aggressively applied principles of safety management definitely impact schedule, quality, productivity, and costs. Owners should also recognize that these aggressively applied principals will impact safety. This is supported by research conducted for The Business Roundtable, a group of buyers of major construction services, which asserts that active owner participation in the pre-construction and construction operations results in a three-to-five-fold accident reduction. This reduction of accidents and their corresponding accident severity lowers accident costs by as much as 8 percent of direct construction labor payroll; a compelling economic incentive for owners to demand construction safety.

The owner initiates a construction project and owner involvement and influence must remain throughout the project. The owner's involvement in construction site safety, and in particular crane safety, begins during the concept or project design phase at which point the owner must instruct the Architect/Engineer (A&E) to aggressively address safety from the beginning.

Prudent owners establish safety criteria as a part of contractor prequalification. The contractor's prior safety experience, or Experience Modification Ratio (EMR), the availability and experience of its safety personnel, the overall safety policy of company management and the corporate safety program shall be a part of the construction prequalification process. Many of these criteria will have as significant an effect on the overall project as financial and other criteria which are commonly included in the prequalification process.

The owner must define at this phase of the project what the owner's involvement in the project will be. Is the owner going to participate directly in project activities, such as on-site meetings, safety presentations, employee orientations, safety inspections, etc., or does the owner intend to rely on monitoring of these necessary processes as they are performed by the PC/GC/CM? Alternatively, the owner can elect to provide third party participants for these activities.

Whatever choices the owner makes, the owner must clarify its position to the construction team during the design/development phase so that a complete, informative set of contract documents
is prepared. The owner should keep in mind that experience indicates that the more direct involvement on the part of the owner, the better the financial and accident results tend to be.

The owner must also consider the impact of the construction operations, particularly large cranes, on the facility and on adjacent properties.

Owners shall instruct their A&Es to include the requirement for a Site Safety Plan into the contract documents and require the submittal and approval of such plans prior to the commencement of construction.

A&E’s Involvement in Crane Safety

Even though we have said that the owner must instruct the A&E to be aggressive in safety matters, the A&E, on the other hand, has an obligation to inform the owner that involvement in safety matters is essential. The A&E must assist in the prequalification selection process to guide the owner. This is particularly true when an owner may not be construction-oriented.

The A&E must also prepare the construction documents to reflect the owners’ choices for jobsite organization and management, particularly with respect to the owner’s choices for safety operations, and crane safety in particular.

As the design of the project progresses and constructability reviews reveal crane safety issues, the A&E must address these issues or include a specific requirement in the contract documents for the contractor to address these issues. The design of the structure and its components can have a major impact on crane safety during construction.

Impediments to Involvement

Even though aggressive involvement in safety on the part of the Owner and the A&E have proven to be of great benefit, both in humanitarian and financial terms, Owners and A&E’s have built-in biases that may prevent these improvements from happening easily. Listed below are some of these biases along with suggestions for overcoming them.

Expensive. Involvement does not come free. Owners must pay for the A&E’s additional effort in creating the plans and specifications as well as any monitoring efforts during construction.

If the final benefit was not far greater than these costs, we would not recommend such involvement.

Hard to Quantify. Benefits are hard to quantify and may appear to be non-existent.

The results of accidents from the owner’s point of view can be very damaging because bad publicity is always a problem. It is the owner, as well as the PC/GC/CM, that are in the public eye. To direct the public concern back to the PC/GC/CM requires a costly public relations effort. While property damage is usually the responsibility of the PC/GC/CM, personal liability can be directed to the owner for not providing a safe place to work. The owner is not protected by workers compensation laws as is the PC/GC/CM. The owner's indemnity may be inadequate.

A&E’s Competition. A&Es may be reluctant to suggest safety involvement to an owner because of the additional costs involved. This is particularly true if the A&E’s competition recommends otherwise.
As a remedy, contractors should recite the benefits of safety involvement to the owner and make an effort to quantify it. By not becoming involved in safety, the owner must assume greater liability and cost risk.

**Not an Expert.** A&Es are usually not experts in safety matters and therefore feel less than qualified in suggesting safety programs.

The A&E can take the position that it is the PC/GC/CM’s responsibility that safety plans be effective. The A&E is merely using a check list to see that certain subjects have been addressed in the plan and that such plans be monitored for compliance. The contractor, in most cases, is the expert and identifies the hazards.

The issue of oversight for compliance does not require expertise, only verification that the contractor is doing what the plan said it would do.

Perceived Liability. A&Es may be unwilling to assume the perceived liability associated with their involvement with safety, particularly when the A&E is less than expert in the subject. Follow the "Not Expert" strategy shown above.

**Safety Plans and Programs**

The construction operations are controlled by a Prime Contractor, General Contractor, a Construction Manager, or a combination of these entities (PC/GC/CM). The PC/GC/CM is responsible for planning, organizing, monitoring, and controlling all construction operations. The contract documents assign safety-oriented duties to the PC/GC/CM which shall be incorporated into the Site Safety Plan. It is the PC/GC/CM's responsibility to assure that applicable topics from the Crane Safety Program and the entire site-specific Crane Safety Plan are included as a part of the overall Site Safety Plan, encompassing all project participants. All portions of the Site Safety Plan, which includes the Crane Safety Plan, remain the responsibility of the PC/GC/CM, regardless of the crane Service Provider or User.

**Crane Safety Program and Crane Safety Plan – There is a difference**

1. The **Crane Safety Plan** is a part of the **Site-Specific Safety Plan**. It is site specific and addresses crane issues on a jobsite. Within the Crane Site Specific Safety Plan are items which detail “who”, “when” and “how” certain processes are performed, as well as lift plans that describe the procedures to be utilized for each lift.

2. The **Crane Safety Program** is a generalized crane safety document that represents long-term corporate policy. It shall reflect company policy for maintenance and use. Every entity that owns, utilizes, or has a crane on the site shall have a crane safety program.

3. The **Site-Specific Safety Plan** is prepared by the Prime Contractor/General Contractor/Construction Manager (PC/GC/CM) in cooperation with the subcontractors. It shall cover all phases of safety on a construction site including crane safety. The Site-Specific Safety Plan must address requirements and concerns expressed by the owner’s design team and requirements in the contract documents.

The PC/GC/CM’s Safety Program shall define the requirements for any crane brought onto the construction site. This Crane Safety Program shall establish the criteria for inspection of the crane, definition of critical lifts, lease or ownership requirements and operator qualification.
Multiple contractors, each with their own Safety Program, working on the construction site, need to implement their Safety Programs in a consistent and harmonious manner to avoid overlap, omissions and conflicts. The process by which this is accomplished is the Site-Specific Plan, which reflects the overall safety on the site and defines responsibilities for each activity.

The owner and owner’s design team shall require the preparation of Site-Specific Safety Plan as part of the contract documents.

The Site-Specific Safety Plan reflects not only the needs of the contractors on the site, but also the concerns of the owner and design team. The owner and the design team shall require the preparation of the Site-Specific Safety Plan as part of the contract documents. The project owner and the design team shall include in the contract documents specific requirements addressing the hazards and concerns identified for the contractor to document in the Site-Specific Safety Plan.

**Crane Safety Plan**

This section describes management's role in execution of the plan. It is the PC/GC/CM's responsibility to:

- Analyze the locations where the contract prohibits or limits crane operations as well as locations that the PC/GC/CM has determined to be hazardous. Devise a method for assuring that these locations are not used for crane operations.

- Establish procedures and priorities for the use of the crane by the various Users. Users who do not have an approved Crane Safety Plan with individual approved Lift Plans shall not be allowed to utilize the crane or lifting service on the site.

- Assure that crane Service Providers have satisfactory procedures for the inspection and/or load testing of cranes, both when cranes first arrive on the site and on a periodic basis during the course of construction. ANSI B30.5, Mobile & Locomotive Cranes, Section 5-2, Inspection, Testing, and Maintenance, and also section, 5.2.4, Rope Inspection, Replacement and Maintenance, as well as other applicable local, state, and federal standards apply.

- Assure that the employees of the PC/GC/CM, Subcontractors and other Users performing rigging and lifting operations as well as crane Service Providers are familiar with proper rigging procedures and that rigging is supervised by knowledgeable, competent persons and that these workers have an adequate employee orientation prior to their commencing work. This should be accomplished at on-site meetings prior to start of construction, and as deemed necessary.

- Establish well-defined operational criteria and a means of determining compliance. These criteria should include: the effect of weather, configuration of the crane which may be permitted, movement and transportation of loads and other direct operational uses.

- Require each User to submit to the PC/GC/CM, for approval, a lift plan for production lifts and the criteria under which these are going to be performed and a separate lift plan for each critical lift.

- Establish a procedure for disseminating the plan to all parties involved.
• Monitor Users to assure that they are following the terms of the Site Safety Plan.
• Review the Crane Safety Program of Crane Service Providers.
• Prepare the Crane Safety Plan.
• Establish a procedure prohibiting on-rubber lifts and/or travel without a permit and a specific crane movement plan.
• Confirm that a Lift Director is assigned and identified for each lift.

What is in a Site-Specific Safety Plan?

The preparation of a Site-Specific Safety Plan starts with the project concept. A listing of hazards and concerns developed by the owner and the design team during the concept and design phase shall be compiled and addressed in the project documents.

• Requirements for access to the facilities, protection of owner’s existing operations, if any, utilization of areas of the property, protection of adjacent property and public must be addressed in the contract documents.

• Hazards and concerns of the owner and the design team shall be addressed as part of the contract documents. A specific solution to the hazards and concerns need not be presented, but the contract documents shall clearly require the PC/GC/CM to address each topic. Each contract document topic included in the documents shall include the contractor’s Safety Program topic and generate a Site-Specific Safety Plan topic as a response.

Lift Plans

General Lift Plan

Lifts that are neither Critical nor Production fall in this category. For example, the unloading of miscellaneous supplies or the delivery of lumber to a carpenter crew are general lifts.

The general lift plan should:

• list any restrictions that are necessary because of weather limitations, time of day and/or temperature restrictions;
• require that the weight of the load be known;
• give a description of the general arrangement and use of rigging equipment such as "no chains allowed" or "no slings made with cable clamps" or any other general admonition that the Service Provider feels is appropriate to site conditions;
• outline the procedures used to assure that rigging equipment has been inspected properly;
• require that there be a Lift Director in charge of each lift. This person may be the crane operator, a rigger or carpenter, but must be someone who is experienced and understands the task to be performed. There must be no misunderstanding as to the person in charge;
• have a requirement that a signal person be assigned and clearly identified as such to the operator. If multiple signal persons are required, a thorough briefing on the
sequential communication with the crane operator is required.

Production Lift Plan

Production lifts are repetitive and do not fall into the classification of a critical lift. Production lifts may all be covered by one lift plan that outlines the parameters and the equipment to be utilized as well as the procedures.

The production lift plan is an extension of the general lift plan and should:

• contain a physical description of the class or group of items to be repetitively lifted including size, shape, weight, and center of gravity. The description for a class or group must include the most adverse properties for crane operation such as the heaviest or largest that will occur in the class;

• list operational factors such as lifting and swing speeds, and the travel path;

• address hazards from failure of the rigging and/or collision. A hazard evaluation should be performed in order to identify and eliminate these potential hazards. Hazards associated with lifting over personnel and congested areas should be eliminated by either controlling access to the area or by changing the path of the lifting operation;

• list specific restrictions over and above those for the general lift plan that are necessary because of weather limitations, time of day and/or temperature restrictions;

• identify the specific type and minimum capacity of the lifting equipment required;

• identify the specific arrangement of rigging equipment;

• identify any special rigging fixtures which might be required. The fixtures should be designed in accordance with applicable regulations and standards;

• require that rigging and lifting equipment be subject to specified inspection intervals and that a documented trail of the history of inspections and/or certifications be maintained;

• require that a designated leader of the rigging crew be appointed. This leader may be a foreman of the Service Provider or other party specifically designated to perform the leadership functions needed by the rigging crew.

Critical Lift Plan

Any lift utilizing multiple cranes is a critical lift. Other critical lift criteria would be the weight of the equipment to be lifted as compared to the allowable lift, the swing area of the lift, the overall risk, difficulty or complexity of the lift, toxicity of the product being lifted and other considerations at the discretion of the producer of the lift plan. The Crane Safety Plan sets appropriate limits on these parameters and contains a list of Critical Lifts. Critical Lifts require individual lift plans.
Safety Plans: Zones of Responsibility

Key Concepts: Safety Plans: Zones of Responsibility

- Zones of Responsibility
- Safety Coordinator – In charge of all crane activity on job site

Lift Director – In charge of all aspects and personnel on one lift or series of lifts

Figure 1. Zones of Responsibility
**Lift Director**

The Person in Charge, the Crane Operator or Lift Director is responsible for the entire lift and must assure full compliance with the Crane Safety Plan and the appropriate lift plan.

**Responsibilities**

The Lift Director is responsible for:

1. assuring that a copy of the lift plan is current, present in the work area, and signed off in accordance with the Crane Safety Plan;
2. assuring that each of the other parties, e.g., riggers, operators, and signal persons, understand their functions;
3. assigning/identifying a designated leader of the rigging crew and clearly identifying this leader to all other parties concerned with the lift. This leader may be a foreman of the Service Provider or other party specifically designated to perform the leadership functions needed by the rigging crew. The leader's responsibility is to:
   - ensure that the rigging personnel are properly trained and thoroughly briefed in the procedure to be implemented;
   - ensure that the equipment and/or lifting devices specified in the lift plan are available and are current in their documentation and inspection;
   - survey the lift site and the path of the load as well as the landing area for hazardous or unusual conditions which may not have been anticipated in the lift plan;
   - be present during the entire time that a critical lift is in progress. Prior to any lift, the director should communicate with the all participants to assure that they are fully aware of the requirements of the lift plan.
4. assuring that a signal person is assigned. If multiple signal persons are required, a thorough briefing on the transition between signalers with the crane Operator is required. If electronic communication between the signal person(s) and the crane is utilized, a redundant system should be implemented and/or a fail-safe procedure instituted whereby a lack of communication would stop the lift;
5. identifying the signal person to the Operator and others concerned with the lift and, in the case of multiple signal persons, the director must assure that all concerned understand the areas of responsibility for each signal person;
6. addressing the outrigger area of dual responsibility by assigning the responsibility for the work in setting up the outrigger supports as well as the suitability of the outrigger setup. Riggers usually set the outrigger supports and, if required, do the manual work in positioning the outriggers themselves. This outrigger work is done with the cooperation of the Operator who determines the outrigger configuration from the load chart. The Lift Director must assure that the outrigger work is done in accordance with any special instructions in the lift plans. If a crawler requires cribbing or mats then such cribbing or mats, are also in this area of dual responsibility.

The Lift Director must make a definite and clear assignment of the outrigger duties and responsibilities to avoid misunderstandings concerning the status of the outrigger operation. Considering all of the individuals that could be involved with the outrigging operation there is substantial chance for such misunderstanding.
**Safety Coordinator**

The Safety Coordinator is responsible for all crane activity on a construction site.

**Responsibilities**

The Safety Coordinator is responsible for:

1. assuring that certifications for all cranes on site are current;
2. assuring that required inspections are current and that noted remedial action is completed;
3. assuring that permitted work locations for the various cranes have been identified;
4. maintaining a site plan which reflects permitted work areas and travel paths for all cranes;
5. developing a procedure for site severe weather warnings and verifying that it is operational;
6. reviewing and maintaining lift plans for all lifts on site and assuring proper approvals have been maintained.

**Rigging Function**

Personnel who attach the load to the hook, signal the crane Operator, land the load, and perform other ground-based operations are performing the rigging function and must be trained in crane and rigging operations sufficiently to perform their assigned task as outlined below.

**Responsibilities**

Under the supervision of the Lift Director, rigging personnel are responsible for:

1. the rigging function from the bowl of the hook downward;
2. verifying the actual weight of the load and communicating this information to the Operator;
3. the stability of the load, requirement for tag lines, and load pick-up and set down procedures;
4. signaling or directing the movement of the load by communication with the Operator and the receiver of the load;
5. attaching (rigging) the load using suitable lifting gear;
6. positioning other rigging personnel as required;
7. where multiple signalmen are utilized, a means of communication must be provided between them and the crane Operator, to assure a smooth transition;
8. landing/placement of the load;
9. assisting in the placement of cribbing or blocking under the crane or its outriggers and generally assist in the crane set-up;
10. assisting and informing the Operator in maintaining clearance from obstructions and in confirming the stability of the crane.

**Operator**
The Operator controls the lift yet follows signals from the rigging personnel. If the Operator deems the lift unsafe, he or she may abort the lift at any point from initial pick up to final placement.

**Responsibilities**

Under the supervision of the Lift Director, the Operator is responsible for:

1. assuring that there is an approved lift plan in place and that he has a copy;
2. all crane movements from the hook upward as well as swing and travel motions;
3. confirming from which individual he will take directions;
4. being familiar with his equipment and the operating manual, including load charts and inspection requirements;
5. confirming that the configuration of the crane is appropriate for the load to be lifted and in conformance with the load chart;
6. being aware of the site conditions above, at, and below the ground;
7. confirming the weight of the load;
8. knowing the location and destination of the load;
9. reporting all problems to appropriate supervisors for correction or repair prior to the lift;
10. reporting all problems to the next Operator.

**Service Provider**

The crane Service Provider is the party responsible for bringing the crane onto the jobsite and controlling its operation.

**Responsibilities**

The Service Provider assures:

1. that the erection and/or dismantling procedures which were provided by the manufacturer of the crane are implemented and adhered to;
2. that the initial inspection prior to the initiation of the crane operation is performed along with whatever load tests and/or certification may be required;
3. that the Operator and/or oiler are adequately trained and competent to operate the class of machine to which they are assigned;
4. that the certifications (crane owner responsibility) of the crane are in accordance with the Crane Safety Plan and regulatory requirements, and that the on-going inspections are maintained;
5. that, for the lift in question, the crane Operator:
   - is fully aware of the requirements of the Crane Safety Plan as well as provisions of the Site Safety Plan that may impact crane operation for the lift in question;
   - understands Operator's responsibilities as defined in Figure 1, Zones of Responsibility on page 9;
• is aware of the lift plan for the lift in question, be it a Critical Lift Plan, a Production Lift Plan or a General Lift Plan and understands the swing and movement restrictions imposed by the plan;

• is fully aware of the identity and authority of the Lift Director and will report any concerns related to the safety of the lifting operation and/or the lift plan to the Lift Director;

• is aware that the lifting operation for the lift in question should not proceed if it does not conform to the lift plan and that deficiencies or deviations in these lift plans will be reported immediately to the Lift Director.

**User**

A User of the crane services may be any entity on the construction site that is engaged in rigging and/or hoisting operations and uses a crane Service Provider or is a crane Service Provider.

**Responsibilities**

Even though the PC/GC/CM is ultimately responsible for the Crane Safety Plan, the User must assure that the plan contains a Critical or Production Lift plan covering the operation in question and that the rigging equipment and procedures are within the scope of these lift plans.

The User shall assign a Lift Director as required by the lift plan and assure that the Lift Director is experienced and competent to perform the operation described in the lift plan. The User is directly responsible for the area in the Zones of Responsibility designation for Rigger's functions. The User shall assure that the rigging crew is qualified to perform the rigging function and that the rigging crew is thoroughly familiar with the requirements of the lift plan for the lift in question.

**Site Planning and Equipment Selection**

**Key Concepts: Working with the Equipment**

- Site Evaluation and Preparation
- Selecting the right equipment for the job
- Equipment Inspection

The construction crane is generic to all construction sites from the single-family home construction site to the international mega project. Proper equipment for the task, qualified operators and appropriate supervision are of equal importance for all projects, regardless of size.

**Site Planning and Preparation**

Review the site to determine the appropriate equipment for the application. If the job site supervisor is not familiar with the equipment to be used at the site, he or she should consult with qualified personnel to be certain that all safety and production aspects have been addressed and that operating personnel are qualified *and licensed when required*, to perform their assigned tasks.

Traffic patterns must also be considered for delivery of materials.
The site shall be properly checked and prepared for use prior to equipment set-up. Roads shall be clearly marked and identified to prevent confusion or potential accidents. The area should be cleared, made as level as possible and compacted to support outrigger, track, and tire loads.

**Equipment Selection**
The equipment selected for the job shall be of proper capability and size. Cost, at the expense of safety considerations, must never be the sole determining factor.

For example, use a 42-meter boom which has a longer reach, instead of a 36-meter boom if the 36-meter boom is 4 meters short of reaching the corner of the pour. The additional cost of using a 42-meter boom will offset the additional cost of labor to install and remove the pipe extension used with the 36-meter boom.

**Equipment Inspection**
Current inspection documentation shall be verified on all equipment. If documentation is unavailable, the equipment shall not be used until a qualified individual completes an inspection, and all necessary repairs have been made and documented. Inspections should be performed thereafter at the manufacturer’s recommended intervals or by the following schedule:

**Inspection, Testing, and Maintenance**

*Initial Inspection.* Prior to initial use, all new, repaired, or altered material placement systems shall be inspected by a qualified person.

*Regular Inspection.* The two general classifications of regular inspection are designated as “frequent” and “periodic” with respective intervals as follows:

**Frequent Inspections.** Daily to monthly interval inspections shall be performed by a designated qualified person and at a minimum shall include the following:

- Safety devices for proper operation;
- Boom controls for proper operation and engagement;
- Boom, jib, hooks, straps, latches, and outriggers, for proper operation and engagement;
- Hydraulic hoses for wear, rubbing, and cracking;
- Hydraulic and engine oil levels;
- Boom and outrigger structures for visible deformations, cracks, and damage;
- Tires for sufficient tread depth and adhesion if re-treaded, proper inflation, cuts, and loose wheel lug nuts;
- Remote Control boxes and cables for proper operation, exposed and broken wires, controls or plugs.

*Periodic Inspections.* One to twelve-month intervals, or as recommended by the manufacturer. Periodic inspections shall be performed by a qualified person.

Complete inspections of the material placing boom, and structural support system shall be performed by a qualified person at the intervals listed below:
• First five years—every 2,000 working hours, or at least once per year, whichever occurs first;
• Five to ten years—every 1,000 working hours, or at least once per year, whichever occurs first;
• Ten years and older—every 500 working hours, or at least once per year, whichever occurs first.

**Inspection Records.** Dated Inspection records shall be maintained under the supervision of a designated person.

**Maintenance**

• The manufacturer shall provide a preventative maintenance schedule to minimize the possibility of mechanical failures and excessive and unnecessary wear.
• A preventive maintenance program based on the machine manufacturers and truck manufacturer’s recommendations shall be established for working material placement systems. Dated records of maintenance performed shall be maintained.
• Under severe conditions or if excessive wear is noted, scheduled intervals must be adjusted to prevent breakdowns and excessive wear.
• Maintenance shall be performed by a designated person.
• Maintenance shall be performed in accordance with the manufacturer’s recommended procedures.
• All guards shall be reinstalled, all safety devices reactivated and maintenance equipment removed after maintenance is performed.
• Welding on the boom, outrigger, or structural member shall be performed in accordance with the recommendations of the manufacturer.
• Replacement parts shall meet or exceed the manufacturer’s specifications.
• Missing or unreadable operational labels and safety signs shall be replaced.
• Lubrication shall be performed according to the manufacturer’s recommendations and procedures.
• Machinery shall not be in operation while lubricants are being applied, unless the lubrication point specifically requires movement for the lubricating procedure. Automatic or remote lubrication systems shall be verified for proper functioning.

**Post-maintenance Test.** The equipment shall be tested for proper operation before being returned to service after maintenance is performed.

**Regulatory Agencies.** Review Federal, State and Local requirements for the use of these devices and any restrictions that may be applicable to the jobsite prior to placing them in service.

**Provide Operating Manuals.** Operating manuals shall be provided specific to each piece of equipment. Booms should include the following: Installation, hazards, lock-out/tag-out procedures, operation, inspection, testing, lubrication, maintenance, safety sign information and location guide.
Operator Training and Operation. Operators shall be trained and written certification of training shall be available before an Operator is allowed to use any of these devices. In cases where other craft personnel will be using these devices, Operators shall be similarly trained and certified.

Non-English speaking Operators shall be trained and be able to understand the operating manuals supplied in their native language.

Working with Mobile Cranes

Key Concepts: Working with Mobile Cranes

- Working with Subcontractors
- Crane Set Up Considerations: Outriggers, Tailswing, Confined Spaces
- Site Conditions: Ground Bearing
- Understanding load charts
- Safety Devices
- Assembly/Disassembly

Whatever the size or nature of the site, crane operations are complex and can present hazards. The well-prepared Crane Safety Plan reduces the complexity to manageable and understandable elements. Procedures for assuring compliance with the plan are essential, for even the best Crane Safety Plan does nothing toward safe operations if it lies in the office, unread and unused. The procedures will vary from site to site, but what will not vary are the operational criteria for the crane and rigging equipment.

OSHA requires that cranes be operated in accordance with the manufacturer’s instructions. Load charts and the operator’s manual supplied by the manufacturer have become the primary resource for safe operation of the crane. In addition, the ANSI standards provide guidance in developing a crane safety plan.

Load charts are complex, reflecting different boom types, boom lengths, rigging configurations, jib configurations, as well as other information in a document which consists of many pages of illustrations.

Manufacturers have typically provided their load charts data in different formats and in many cases, the same manufacturer utilizes different formats for different models. The change from manufacturer to manufacturer makes planning lifts complex and difficult.

Load Charts

Although cranes vary significantly in their design and in their use, there are common rules which must be observed in their operation. The most important of these is the adherence to and understanding of the information in the crane load chart. The crane rating chart is the most important operational document. A durable rating chart(s) with legible letters and figures shall be provided with each crane and attached in a location accessible to the Operator while at the controls. This document defines not only the allowable load that a crane can lift in a specific configuration at a given radius but also the physical conditions that must exist for this allowable load to be applicable. This document may be in electronic format.
Uniformity. A quote from ASCE Policy Statement No. 424 states: ASCE supports efforts in the construction industry to promote and specify safety improvements which: Encourage manufacturers to standardize load chart formats and equipment control configurations, with all manuals written in the language and vernacular of the end user in addition to SI units and containing detailed explanatory graphics.

Rated Capacity. "Rated Capacity" is probably the most misunderstood term in the crane industry. Not only is this true with those that don't work with cranes as their primary occupation, but even with professionals in the crane industry there is confusion. Many professionals consider "Rated Capacity" as the allowable lift at any given configuration. In this chapter we have applied the much narrower definition that "Rated Capacity" is the maximum allowable lift for the crane. Even though most manufacturers no longer use "Rated Capacity" as a model designation, people in the industry still commonly refer to the size of the crane as its "Rated Capacity."

A crane is referred to as a “40-ton” or “200-ton” machine, when in fact it can lift that weight only under manufacturer’s specified conditions. At longer radii or with a longer boom it may not lift a considerably lesser load.

A crane can safely operate at its "Rated Capacity" only when operating:

- at the minimum lifting radius which is the horizontal distance from the center of the rotation of the crane to the center of gravity of the load;
- with minimum boom length.

A "40-ton" crane can only lift 40 tons with the shortest possible boom section and as close to the crane as possible. As the radius increases, the allowable lift decreases. Increased boom length at the same radius also reduces the allowable lift of the crane.

Allowable Lift Rating. The allowable lift rating for a crane is based either on:

- structural capacity of the boom, pendant lines or other structural or mechanical devices in the crane to which appropriate safety factors have been applied;
- tipping or overturning which usually occurs at a large radius with long booms. These Load ratings do not exceed 75 percent for crawler mounted and 85 percent for carrier mounted cranes, of the load which would cause tipping with crane standing level on a firm uniformly supporting surface.

Most load rating charts indicate either structural competence or tipping as the basis for the allowable lift. It should be noted that the tipping capacity numbers in the chart are 85% of overturning. This leaves little latitude in estimating the load and/or determining the radius. A weight scale and a tape measure are the most reliable method for determining the capacity.

Criteria. All load charts for cranes assume several basic criteria are being met in order to achieve the allowable lift.

- The crane is completely and correctly assembled.
- The load is static. Load charts do not account for dynamic forces imposed by the acceleration of hoisting, lowering, stopping, or swinging the load nor do they allow for wind, temperature, or other environmental effects.
• Load charts assume that the crane is level and remains level throughout its swing.

The Construction Safety Association of Ontario suggests that as much as 50 percent of the allowable lift capacity of a crane is lost due to a 3 degree out of level condition when utilizing a long boom at a short radius. At 1 degree out of level this loss is 30 percent of the allowable lift capacity of the crane. One degree is approximately 2 inches for outriggers spaced 10 feet apart. A firm base and constantly level conditions are critical for safe crane operation.

A study performed by the Society of Automotive Engineers (SAE) indicates that not only is the stability impaired by an out-of-level condition, but the stressed and consequent deflection in the boom is equally as severe.

It should be noted that as a crane picks up a load, the radius will increase due to stretch in the pendant cables and deflection in the boom.

Load Chart Details

Accessories. Load charts can be complex documents listing numerous booms, jibs and other components which may be employed to configure the crane for various tasks. It is critical that the chart used is for the actual configuration of the crane. Load charts show allowable lift capacity at a specified boom length and radius. **Interpolation between the published values is not permitted**, use the next lower lift capacity value instead, unless otherwise specifically instructed by the manufacturer. Operation in chart areas which have no published value are not permitted.

Attachments. This also applies to devices which may be attached to the boom. Most commonly a jib, whether erected or not, when attached to the boom must be considered as part of the load when using the main load line and conversely main load rigging is considered as load when using the jib.

All load attaching devices, including the lines, hook/s and block/s must be included as part of the load being lifted. All load charts have extensive notes and warnings. The crane Operator as well as all supervisory personnel associated with rigging and lifting operations must be familiar with these notes.

Safety Devices

The most important single element in the reduction of crane accidents is the Operator. Crane safety devices are also important elements. Unfortunately, unlimited use of safety devices will not result in a perfectly safe operation. Safety devices may instill a false sense of security. *Devices used in place of competence and good judgment on the part of the crane operator contribute to accidents*. However, judicious use of effective devices will result in operations that have acceptable risk.

Many cranes are equipped with various safety devices as described in detail in the Appendix.

There are two common types of safety devices:

Load Indicating Device. A load indicating device (LID), indicates the load on the main lifting line. This indicated load, when appropriately modified for parts of line and friction effects, indicates the weight of the lift. If this value exceeds the allowable lift, the device will provide a warning and may also inhibit operation.
Load Moment Indicator. A load moment indicator (LMI) is a device which senses both the load and the boom angle, and by correlating the boom angle with the allowable lift at that angle provides a warning and may inhibit operation.

Device Effectiveness

- These devices can be very effective when the crane is level, on solid ground and has its outriggers firmly placed. Absence of any one of these conditions renders either device completely inadequate.
- These devices are specific for the configuration of the crane. Such devices cannot detect a change from single to multiple part rigging or the presence of a jib on the crane boom.
- Even the most sophisticated devices that are installed on cranes today depend upon the competence of the Operator and supervisors to ensure the configuration of the crane matches the assumed condition of the device to assure the crane is operated safely.

Transportation, Erection and Dismantling

Engineering Requirements

Some cranes have high axle loads that create high ground pressures when they travel. Ground pressures can be even higher during erection and dismantling. Tower cranes and mobile cranes positioned on structures induce significant loads. The contract documents should require the PC/GC/CM to advise the owner or the owner’s representative of these crane-imposed loads. These loads and their effects are not always obvious. For this reason, a Professional Engineer shall determine imposed loads, evaluate the effects of those loads and design such supports as may be required.

Transportation

Mobile cranes and tower cranes require detailed movement planning, including appropriate travel routes with considerations for width, height, and gross vehicle weight limitations. The responsible party should resolve potential problems with the appropriate transportation authorities. This may include securing special permits.

Transportation precautions include proper tie-downs that must prevent:

- load shifting during transit;
- damage to sensitive components from travel vibrations; and
- tie-down damage. Cable or chain tie-downs can easily damage lattice boom chords and diagonals.

Erection

Only qualified personnel shall supervise the erection of the crane. As defined by OSHA, 29 CFR 1926.32(l) states: “Qualified” 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.
Before crane erection begins, a qualified person shall carefully inspect the crane for any damage that could affect the safe operation of the crane. **Personnel who are to be erecting or jumping the crane shall be specifically trained and have a copy of the manufacturer's procedures.** Boom damage caused by tie downs may not be obvious but can have serious consequences. Such damage is likely to be unobserved during a normal inspection. Once the crane is erected, the damage may not be visible from the ground, so special care must be taken in this regard before erection. **Casual inspection is not adequate.**

All bolted and pinned connections shall be checked to assure that fasteners and keepers meet manufacturer's requirements and have been correctly installed.

For tower cranes, specialty cranes and mobile cranes, an erection plan shall be required. This plan shall be a component of the Crane Safety Plan. It must include any specific procedures needed to carry out the instructions supplied by the crane manufacturer and to adapt them to the particular site conditions. The plan shall include drawings showing clearances to all potential obstructions.

The locations for unloading shipped components shall be shown on a site drawing.

Local regulations may require third party inspection and/or certification before the crane may be operated.

**Dismantling**

Dismantling is not the reverse of crane erection. New permanent structures that are now close to the crane location may create conditions that make dismantling more difficult than assembly.

Therefore, it is necessary that a dismantling plan be prepared along with the assembly plan for all tower cranes and for larger mobile and specialty cranes. The plan must follow the manufacturer's recommendations. Clearances shall be carefully determined. This plan will be a component of the Crane Safety Plan.

**Hazard Analysis**

**Key Concepts: Hazard Analysis**

- The most effective plan for accident prevention is the identification and elimination of hazards during design and preconstruction phases.
- Location and Access
- Power Lines

Good management of crane and rigging operations requires that a hazard analysis not only be performed by the A&E during the design and preconstruction phases but that it be part of the PC/GC/CM's Site Safety Plan. Indeed, a primary goal of a site safety plan and a crane safety plan is to identify and eliminate hazards.

**Location and Access.** Cranes positioned near or attached to a structure can have a major impact on the structure. The allowable loads and their points of application should be clearly defined and approved by a licensed engineer. A&Es must require an analysis of cranes/derricks attached to or supported by the structure. Having large cranes adjacent to a structure may also have a detrimental effect on the structure foundation.
The determination of allowable crane locations should reflect concerns for public exposure, adjacent structures, employee and public travel paths, underground structures, previously excavated areas, overhead obstructions, and all other factors which impact on safe crane and rigging operations. In addition, load travel paths may have to be defined. Areas that present a severe hazard to personnel should be declared prohibited operating areas or as restricted employee and public access areas.

**The Public.** The A&E must consider the impact of crane operations on the public. Noise, dust, traffic, and other typical nuisances inherent with crane operations may require restricted working hours. These considerations or requirements should be specifically part of the contract documents. ANSI A10.34, Public Protection, as well as other applicable local, state, and federal standards apply.
# Lift Evaluation Form

1. **Activity**
   - Location of Lift
   - Date
   - Load Weight
   - Block Weight
   - Spreader Weight
   - Rigging Weight
   - Jib Weight
   - Jib Ball Weight
   - Hoist Line Weight
   - Total Load

2. **Crane Manufacturer**
   - Max Boom
   - Boom at lift
   - Model No. & Annual Crane Cert
   - Serial No
   - Maximum Load Radius
   - On Outriggers
   - On Tires
   - Corresponding Boom Angle

<table>
<thead>
<tr>
<th>Lift Will Be</th>
<th>On Boom</th>
<th>On Jib</th>
<th>Over Side</th>
<th>Over Rear</th>
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</thead>
<tbody>
<tr>
<td>Rated Crane Capacity</td>
<td></td>
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</table>

Capacity Margin = (Total Load ÷ Rated Capacity) x 100 –
Please attach load chart for this lift/pic ___% 

3. **Are There Underground Hazards?**
   - Yes
   - No

<table>
<thead>
<tr>
<th>Soil Conditions</th>
<th>PLEASE ADD DIAGRAM OF CRANE LIFT AND STAGING AREA</th>
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</thead>
<tbody>
<tr>
<td>Will Blocking or Crane Mats be Used?</td>
<td></td>
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<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Are there Fire or Explosive Hazards within reach?</td>
<td></td>
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<tr>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Has Permit Been Obtained?</td>
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<tr>
<td>Yes</td>
<td>No</td>
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</table>

Prepared by |
Operator |
NCCCO License # |
Date |
### Synthetic Sling Inspection Form

<table>
<thead>
<tr>
<th>SLUG</th>
<th>SLUG ID</th>
<th>LOCATION</th>
<th>SIZE</th>
<th>LENGTH</th>
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#### Condition Code

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<th>CONDITION</th>
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<tr>
<td>Weak</td>
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<td>UN</td>
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<tr>
<td>Broken Stitch</td>
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<td>UN</td>
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<tr>
<td>Heat Damage</td>
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<td>UN</td>
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<tr>
<td>Chemical Damage</td>
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<td>UN</td>
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<tr>
<td>Holes / Tears</td>
<td></td>
<td>UN</td>
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<tr>
<td>Cut or Slashed</td>
<td></td>
<td>UN</td>
</tr>
<tr>
<td>Condition of End Fitting</td>
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<td>UN</td>
</tr>
</tbody>
</table>

Take any piece of rigging with excessive wear or damage out of service immediately. Destroy any piece of rigging taken out of service by cutting the eyes. Do not rigging to employees for their personal use.

### Wire Rope Sling Inspection Form

<table>
<thead>
<tr>
<th>SLUG</th>
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#### Condition Code

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</table>

Take any piece of rigging with excessive wear or damage out of service immediately. Destroy any piece of rigging taken out of service by cutting the eyes. Do not give rigging to employees for personal use.
<table>
<thead>
<tr>
<th>Pre-Lift Assessment</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1. Load to be Lifted</td>
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<tr>
<td>2. Lift Crane</td>
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<tr>
<td>3. Certified Operator:</td>
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<tr>
<td>4. Qualified Rigger:</td>
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<tr>
<td>5. Make &amp; Model</td>
<td></td>
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<tr>
<td>6. Counterweight:</td>
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<tr>
<td>7. Crane on Outriggers, Tires or Crawlers:</td>
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<tr>
<td>8. Hoisting from Boom, Manual Sec., or Jib</td>
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<tr>
<td>9. NET LOAD WT. lbs.</td>
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<tr>
<td>10. Boom Ext. weight lbs.</td>
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<tr>
<td>12. Load Block weight lbs.</td>
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<tr>
<td>13. Auxiliary Ball weight lbs.</td>
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<tr>
<td>14. Rigging weight lbs.</td>
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<tr>
<td>15. Misc. (Spreader Bar, etc.) lbs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. GROSS LOAD WT. lbs. A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Max Load Radius feet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Boom Length feet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Min Parts of Line Req. parts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Rated Cap. at Max Radius lbs. B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Percent of Rated Cap. #DIV/0! %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. A divided by B = ? X 100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Rigging Capacities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. (Sizes &amp; Capacities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Shackles:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. (Sizes &amp; Capacities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Spreader Bar(s):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. (Length &amp; Capacities)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Is size, weight &amp; center of gravity of load known?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Has rigging been inspected and in compliance?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Has crane area been barricaded?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Is load path clear of obstructions?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Nearest power lines present? (Distance in Feet)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
34. Is crane set to manufacturers specifications?
35. Has crane been inspected and in compliance?
36. Has site been prepared for crane(s) to make lift?
37. Have underground hazards been identified?
38. Is proper matting available?
39. Is operator qualified? CCO Expiration Date
40. Weather conditions within manufacturer minimums?
41. Other Rigging:
   42. roll blocks, eye bolts, etc.
43. Name of the operator
44. Operators crane card
45. Annual Crane Cert
46. Max capacity of crane
47. What are we lifting?
48. Weight of item we are lifting
49. Total boom length
50. Boom length at time of lift
51. Swing Radius
52. Angle of Boom
53. Staging Area
54. Final Load Chart Calculation
55. Copy of load chart or pic
56. % of lift compared to max capacity based on load chart
57. Who are the Riggers?
58. Rigging Certs are needed
59. Pics of Rigging Equipment with tags
APPENDIX – Hazard Awareness

Figure A-1. Power line clearances

GENERAL NOTE: For minimum radial distance of danger zone, see Table A-1

Table A-1. Minimum Required Clearances

<table>
<thead>
<tr>
<th>Normal Voltage, kV</th>
<th>Minimum Required Clearance, ft (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Phase to Phase)</td>
<td>[Note (1)]</td>
</tr>
<tr>
<td>Operation Near High Voltage Power Lines</td>
<td></td>
</tr>
<tr>
<td>to 200</td>
<td>17 (5)</td>
</tr>
<tr>
<td>Over 200 to 350</td>
<td>20 (6.10)</td>
</tr>
<tr>
<td>Over 350 to 500</td>
<td>25 (7.62)</td>
</tr>
<tr>
<td>Over 500 to 750</td>
<td>35 (10.67)</td>
</tr>
<tr>
<td>Over 750 to 1000</td>
<td>45 (13.72)</td>
</tr>
<tr>
<td>Operation in Transit with Boom or Conveyor Lowered</td>
<td></td>
</tr>
<tr>
<td>to 0.75</td>
<td>4 (1.22)</td>
</tr>
<tr>
<td>Over 0.75 to 50</td>
<td>6 (1.83)</td>
</tr>
<tr>
<td>Over 50 to 345</td>
<td>10 (3.05)</td>
</tr>
<tr>
<td>Over 345 to 750</td>
<td>16 (4.87)</td>
</tr>
<tr>
<td>Over 750 to 1000</td>
<td>20 (6.10)</td>
</tr>
</tbody>
</table>

NOTE:
(1) Environmental conditions such as fog, smoke, or precipitation may require increased clearances.
Glossary:

- **ANSI**: American National Standards Institute. Provides the accrediting methodology for development of ASME standards among others.
- **ASME**: American Society of Mechanical Engineers. Produce a collection of 28 volumes on the safe use of equipment in the workplace.
- **Boom**: A pivoting structure attached to the upper that supports the ball and/or block.
- **Boom Angle**: The angle above or below horizontal of the longitudinal axis on the boom base section.
- **Boom Length**: The distance along the centerline of the boom from the center of the boom foot pin to the center of the boom point sheave pin.
- **Crane**: A Crane is a lever and the simple principles of movement apply. The weight of the load, times the distance from the fulcrum, is the overturning moment.
- **Critical Lift**: Any lift: utilizing multiple cranes; exceeding 85% of total capacity of the crane at lift radius; over an occupied structure or public street; of lifting an item of high value or long replacement time.
- **Jib**: An extension attached to the boom point to provide additional boom length for lifting specified loads.
- **Load Moment**: The force applied to the crane by the load. The leverage the load exerts on the crane. (Calculation: gross load times the horizontal distance from the tipping axis to the center of gravity of the suspended load).
- **Outrigger**: Extendable or fixed members attached to the mounting base that rest on supports at the outer ends used to support the crane.
- **Qualified Person**: One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience has successfully demonstrated ability to solve or resolve problem relating to the subject matter, the work, or the project. (OSHA definition)
- **Radius**: The horizontal distance between the centerline of rotation and the center of gravity of a suspended load.
- **Rated Capacity**: The maximum allowable lift for the crane. A crane can safety operate at rated capacity only when operating at the minimum lifting radius which is the horizontal distance from the center of the rotation of the crane to the center of gravity of the load; with minimum boom length. In the industry the size of the crane is commonly referred to as the rated capacity.
- **Tipping Axis**: The point or line about which a crane tips – commonly called the fulcrum.
- **Lift Director**: Responsible for each lift or series of lifts on a jobsite. Ensures compliance with crane safety plan and appropriate lift plan.
- **Safety Coordinator**: Coordinates all crane activities and control operations on the site. Only one safety coordinator on a job site. Safety Coordinator may be responsible for multiple Lift Directors.
Electrical Safety, Lock-out / Tag-out and Grounding Program

Cirks Construction Inc. has developed the following procedures to protect our employees and reduce the risk of incidents. We will also conduct a periodic review of electrical safety, energy control procedures, and lock-out / tag-out, at least annually, to ensure that the procedure and the requirements of this section are being followed.

This procedure is binding upon all employees. All employees will be instructed in the significance of electrical safety, energy control procedures, and lock-out / tag-out. Each new employee shall be instructed by their supervisor in the purpose and use of these procedures.

All Equipment and Installations

1. Only trained, qualified, and authorized employees will be allowed to make electrical repairs or work on electrical equipment or installations.
2. All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized.
3. All energized equipment and installations will be de-energized prior to the commencement of any work. If the equipment or installation must be energized for test or other purposes, special precautions will be taken to protect against the hazards of electric shock.
4. All equipment shall be locked out to protect against incidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device bearing a lock.
5. Safety grounds shall always be used where there is a danger of shock from back feeding or other hazards.
6. Polyester clothing or other flammable types of clothing shall not be worn near electrical circuits. Cotton clothing is much less likely to ignite from arc blast. Employees working on live circuits shall be provided Nomex or equivalent fire-resistant clothing.
7. Suitable eye protection must be worn at all times while working on electrical equipment.
8. Always exercise caution when energizing electrical equipment or installations. Take steps to protect employees from arc blast and exploding equipment in the event of a fault.
9. All power tools will be grounded or double insulated. Tools with defective cords or wiring shall not be used.
10. Suitable temporary barriers or barricades shall be installed when access to open enclosures containing exposed energized equipment is not under the control of an authorized person.

Energized Equipment or Systems

Work shall not be performed on exposed energized parts of equipment or systems until the following conditions are met:

1. Responsible supervision has determined that the work is to be performed while the equipment or systems are energized.
2. All work is conducted in accordance with the requirements of NFPA Standard 70E for Electrical Safety.
3. Involved personnel have received instructions on the work techniques and hazards involved in working on energized equipment and appropriate equipment to perform the job has been provided.

4. Suitable personal protective equipment has been provided and is used. Suitable insulated gloves shall be worn for voltages in excess of 300 volts, nominal.

5. Suitable eye protection, including face shield and safety glasses or goggles, has been provided and is used.

6. Suitable arc flash and arc blast protection is provided for high voltage work.

7. Fire resistant clothing such as Nomex suits shall be worn.

8. Where required, suitable barriers, barricades, tags, or signs are in place for personnel protection.

After the required work on an energized system or equipment has been completed, an authorized person shall be responsible for:

1. Removing from the work area any personnel and protective equipment.

2. Reinstalling all permanent barriers or covers.

De-energized Equipment or Systems

A qualified person shall be responsible for completing the following before working on de-energized electrical equipment or systems, unless the equipment is physically removed from the wiring system:

1. Notifying all involved personnel.

2. Locking the disconnecting means in the "open" position with the use of lockable devices, such as padlocks, combination locks, or disconnecting of the conductor(s) or other positive methods or procedures which will effectively prevent unexpected or inadvertent energizing of a designated circuit, equipment, or appliance.

3. Tagging the disconnecting means with suitable incident prevention tags.

4. Effectively blocking the operation or dissipating the energy of all stored energy devices which present a hazard, such as capacitors or pneumatic, spring-loaded and like mechanisms. This may require the installation of safety grounds.

5. Testing the equipment to ensure it is de-energized.

Energizing (or Re-energizing) Equipment or Systems

A qualified and authorized person shall be responsible for completing the following before energizing equipment or systems that have been de-energized:

1. Determining that all persons are clear from hazards which might result from the equipment or systems being energized including arc blast or explosions caused by unexpected faults.

2. Removing locking devices and tags. Only the employee who placed them may remove locking devices and tags. Locking devices and tags shall be removed upon completion of the work and after the installation of the protective guards or safety interlock systems.
Incident Prevention Tags

Suitable incident prevention tags shall be used to control a specific hazard. Such tags shall provide the following minimum information:

1. Reason for placing tag.
2. Name of person placing the tag and how that person may be contacted.
3. Date tag was placed.

Lock-out / Tag-out

Machinery or equipment capable of movement shall be stopped and the power source de-energized or disengaged, and locked out. If necessary, the moveable parts shall be mechanically blocked or secured to prevent inadvertent movement during cleaning, servicing, or adjusting operations unless the machinery or equipment must be capable of movement during this period in order to perform the specific task. If so, the hazard of movement shall be minimized.

Equipment or power-driven machines equipped with lockable controls, or readily adaptable to lockable controls, shall be locked out or positively sealed in the "off" position during repair work and setting-up operations. In all cases, incident prevention signs or tags shall be placed on the controls of the equipment or machines during repair work.

Cirks Construction Inc. will ensure a competent person provides a sufficient number of incident prevention signs or tags and padlocks, seals, or other similarly effective means that may be required by any reasonably foreseeable repair.

Sequence of Lockout Procedure

1. Notify all affected employees that a lockout is required and the reason therefore.
2. If the equipment is operating, shut it down by the normal stopping procedure (such as: depress stop button, open toggle switch).
3. Operate the switch, valve, or other energy isolating devices so that the energy source(s) (electrical, mechanical, hydraulic, other) is disconnected or isolated from the equipment.
4. Stored energy, such as that in capacitors, springs, elevated machine members, rotating fly wheels, hydraulic systems, and air, gas, steam, or water pressure, must also be dissipated or restrained by methods such as grounding, repositioning, blocking, or bleeding down.
5. Lockout energy isolating devices with an assigned individual lock.
6. After ensuring that no personnel are exposed and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. CAUTION: Return operating controls to neutral position after the test.

Procedure Involving More Than One Person

If more than one individual is required to lock out equipment, each shall place his or her own personal lock on the energy isolating device(s). One designated individual of a work crew or a supervisor, with the knowledge of the crew, may lock out equipment for the whole crew. In such cases, it may be the responsibility of the individual to carry out all steps of the lockout procedure.
and inform the crew when it is safe to work on the equipment. Additionally, the designated individual shall not remove a crew lock until it has been verified that all individuals are clear.

**Testing Equipment During Lockout**

In many maintenance and repair operations, machinery may need to be tested, and for that purpose energized, before additional maintenance work can be performed. This procedure must be followed:

1. Clear all personnel to safety.
2. Clear away tools and materials from equipment.
3. Remove lockout devices and re-energize systems, following the established safe procedure.
4. Proceed with tryout or test.
5. Neutralize all energy sources once again, purge all systems, and lockout prior to continuing work.

Equipment design and performance limitations may dictate that effective alternative worker protection be provided when the established lock-out procedure is not feasible.

**Restoring Equipment to Service**

After the work is completed and the equipment is ready to be returned to normal operation, this procedure must be followed:

1. Remove all non-essential items.
2. See that all equipment components are operationally intact, including guards and safety devices. Repair or replace defective guards before removing lockouts.
3. Remove each lockout device using the correct removal sequence.
4. Make a visual check before restoring energy to ensure that everyone is physically clear of the equipment.
# EQUIPMENT GROUNDING CHECKLIST

<table>
<thead>
<tr>
<th>Checklist Item</th>
<th>Compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROUNDING ASSURANCE</strong></td>
<td></td>
</tr>
<tr>
<td>Are grounding methods sufficient when working in wet conditions?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Is the grounding terminal present on the plug?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Is the polarity of connections correct? [No grounded conductor can be attached to any terminal or lead which results in a reversed designated polarity.]</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are grounding terminals or grounding-type devices on receptacles, cord connectors, or attachment plugs used for the intended purpose?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are grounding terminals or grounding-type devices on receptacles, cord connectors, or attachment plugs defeated in any way?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are all receptacles and attachment caps or plugs tested for correct attachment of the equipment-grounding conductor? [The equipment-grounding conductor must be connected to its proper terminal.]</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are grounding terminals or grounding type devices on receptacles, cord connectors, or attachment plugs defeated in any way?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are all 12-volt single-phase 15 and 20 ampere receptacle outlets on construction sites which are not a part of the permanent wiring of the building or structure equipped with approved ground-fault circuit interrupters for personnel protection?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are conductors used as a grounded conductor identifiable and distinguishable from all other conductors?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Are employees training in the grounding requirements for tools and associated site electrical equipment.</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td><strong>TESTING</strong></td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>All required tests are performed:</td>
<td></td>
</tr>
<tr>
<td>• Before first use</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>• Before equipment is returned to service following repairs</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>• Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>• At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage must be tested at intervals not to exceed 6 months</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>All required tests are documented, maintained, and include the following:</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>• Identity of all equipment having passed the test?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>• The last date tested or the testing interval?</td>
<td>✔ Yes ✔ No</td>
</tr>
<tr>
<td>Is the test documentation maintained until replaced by a more current record?</td>
<td>✔ Yes ✔ No</td>
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</tbody>
</table>
**EQUIPMENT GROUNDING TEST RECORD**

**SITE LOCATION INFORMATION**

Location or Project Name:

Person Responsible for Grounding Program:

Department: Phone: Title:

**EQUIPMENT TESTING RECORD**

<table>
<thead>
<tr>
<th>Nomenclature</th>
<th>Serial/ID #</th>
<th>Date Tested Interval</th>
<th>Passed Test</th>
<th>Removed from Service</th>
<th>Inspector</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Yes □ No □</td>
<td>Yes - Date:</td>
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<tr>
<td></td>
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<td></td>
<td>Yes □ No □</td>
<td>Yes - Date:</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Yes □ No □</td>
<td>Yes - Date:</td>
<td></td>
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<td>Yes - Date:</td>
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<td></td>
<td></td>
<td></td>
<td>Yes □ No □</td>
<td>Yes - Date:</td>
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</tbody>
</table>

**TEST RECORD FORM RETENTION INFORMATION**

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<th>Filed By:</th>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

**ATTACHMENTS**

‘Yes □ No □
Driving Safety Policy

Cirks Construction Inc. has established the following guidelines and procedures for our drivers and vehicles to protect the safety of individuals operating any motor vehicle on company business. Protecting our employee drivers, their passengers, and the public is of the highest priority. The commitment of management and employees is critical to the success of this program. Clear communication of, and strict adherence to, the program's guidelines and procedures are essential.

Our primary goal is to maintain a high level of safety awareness and foster responsible driving behavior. Driver safety awareness and responsible driving behavior will significantly decrease the frequency of motor vehicle incidents and reduce the severity of personal injuries and property damage.

Drivers must follow the requirements outlined in this program. Violations of this program may result in disciplinary action up to, and including, suspension of driving privileges or dismissal.

Our program consists of the following elements:

- Driver selection
- Driver training
- Vehicle use policy
- Vehicle inspection and preventive maintenance
- Incident investigation

Driver Selection

Only company authorized and assigned employees are allowed to drive company vehicles. Prior to being authorized and assigned, Cirks Construction Inc. will check for the following items:

- A valid un-restricted driver license.
- A current motor vehicle driving record with no more than 2 points and no serious or major violations.

Cirks Construction Inc. will also check driving records of all employees authorized to drive on company business on an annual basis.

Employees that do not meet these requirements are not authorized or allowed to drive company vehicles or drive their own vehicle on company business.

Driver Training

All employees driving company vehicles and personal vehicles on company business will be given a copy of the Driving Safety Rules and Company Vehicle Use Policy and required to read and sign for them. Safe driving will also be periodically covered at company safety meetings.
Company Vehicle Use Policy

Cirks Construction Inc. has established the following policies pertaining to company vehicles:

1. Only authorized employees may drive Cirks Construction Inc. vehicles.
2. Seat belts must be worn at all times per the law.
3. No employee is permitted to drive Cirks Construction Inc. vehicles while impaired by alcohol, illegal or prescription drugs, or over the counter medications.
4. Employees shall not engage in any activities that distract them from driving while operating vehicles. This includes eating, reading maps, texting, looking for reports or files, and talking on a cell phone without a hands-free device.
5. All incidents involving Cirks Construction Inc. vehicles must be reported to the office immediately.
6. Employees with two or more preventable incidents in a three-year period or that obtain three points on their driving record, will be subject to a loss of their driving privileges or have their driving privileges restricted.

Vehicle Inspection and Preventive Maintenance

All Cirks Construction Inc. vehicles must be inspected by the driver prior to each use. Mechanical defects will be repaired immediately. The safety director and fleet manager will periodically spot check company vehicles to determine their condition.

Vehicle inspections will include:

- Lights
- Turn signals
- Emergency flashers
- Tires
- Horn
- Brakes
- Fluids
- Windshield condition and wiper condition
- Mirrors

All vehicles will also be maintained in accordance with the manufacturers’ recommendations. It is the responsibility of the individual assigned the vehicle to ensure proper maintenance and repairs are performed. If your vehicle is not safe, do not drive.

Incident Investigation

All incidents in Cirks Construction Inc. vehicles will be investigated by the supervisor, manager, or safety director. Where possible, witness statements will be obtained and photos used to document the scene of the incident and the damage. Police reports will also be obtained whenever possible. The following guidelines will be used to help determine preventability.
Auto Incident Preventability Guide

This guide will assist in determining whether our driver could have prevented the incident. An incident is preventable if the driver could have done something to avoid it. Drivers are expected to drive defensively. Which driver was primarily at fault, which received a traffic citation, or whether a claim was paid has no bearing on preventability? If there was anything our driver could have done to avoid the collision, then the incident was preventable.

An incident was non-preventable when the vehicle was legally and properly parked or when properly stopped because of a highway patrol officer, a signal, stop sign, or traffic condition. When judging incident preventability, here are some general questions to consider:

1. Does the investigation indicate that the driver considers the rights of others, or is there evidence of poor driving habits that need to be changed?
2. Does the investigation indicate driver awareness? Such phrases as "I did not see," "I didn't think," "I didn't expect," or "I thought" are signals indicating there probably was a lack of awareness and the incident was preventable. An aware driver should think, expect, and see hazardous situations in time to avoid collisions.
3. Was the driver under any physical stresses that could have been contributory? Did the incident happen near the end of a long day or long drive? Did overeating contribute to fatigue? Did the driver get prior sufficient sleep? Is the driver's vision faulty? Was the driver feeling ill?
4. Was the vehicle defective without the driver's knowledge? Was a pre-trip inspection done, and would they have discovered the defect? A car that pulls to the left or right when the driver applies the brakes, faulty windshield wipers, and similar items are excuses, and a driver using them is trying to evade responsibility. Sudden brake failure, loss of steering, or a blowout might be defects beyond the driver's ability to predict. However, pre-trip inspections and regularly scheduled maintenance should prevent most of these problems. If either of these are the cause of the incident, then the incident was probably preventable by the driver.
5. Could the driver have exercised better judgment by taking an alternate route through less congested areas to reduce the hazardous situations encountered?
6. Could the driver have done anything to avoid the incident?
7. Was the driver's speed safe for conditions?
8. Did the driver obey all traffic signals?
9. Was the driver's vehicle under control?

Intersection Collisions

Failure of our driver to yield the right-of-way, regardless of who has the right of way, as indicated by stop signs or lights, is preventable. The only exception to this is when the driver is properly proceeding through an intersection protected by lights or stop signs and the driver's vehicle is struck in the extreme rear side of the vehicle. Regardless of stop signs, stoplights, or right-of-way, a defensive driver recognizes that the right-of-way belongs to anyone who assumes it and should yield accordingly.
Questions to consider:

1. Did the driver approach the intersection at a speed safe for conditions?
2. Was the driver prepared to stop before entering the intersection?
3. At a blind corner, did the driver pull out slowly, ready to apply the brakes?
4. Did the driver look both ways before proceeding through the intersection?

Sideswipes

Sideswipes are often preventable. Defensive drivers do not get into a position where they can be forced into another vehicle or another vehicle can be forced into them. Defensive drivers continuously check for escape routes to avoid sideswipes. For two lane roads, this means a driver should pass another vehicle only when absolutely certain that he or she can safely complete the pass. A driver should also be ready to slow down and let a passing vehicle that has failed to judge safe passing distance back into the lane. A driver should make no sudden moves that may force another vehicle to swerve. If a driver sideswipes a stationary object while taking evasive action to avoid striking another car or a pedestrian, such an incident may not be preventable. However, you should consider what the driver could have done or failed to do immediately preceding the evasive action to be in the position of no other options.

A driver is also expected to anticipate the actions of an oncoming vehicle. Sideswiping an oncoming vehicle is often preventable. Again, evasive action, including leaving the roadway, may be necessary if an oncoming vehicle crosses into the driver's lane. Drivers are expected to allow merging vehicles to merge smoothly with them, and to merge smoothly on controlled access highways. Drivers are expected to be able to gauge distances properly when leaving a parking place and enter traffic smoothly.

Questions to consider:

1. Did the driver look to front and rear for approaching and overtaking traffic immediately before starting to pull away from the curb?
2. Did the driver signal before pulling away from the curb?
3. Did the driver look back rather than depend only upon rear-view mirrors?
4. Did the driver start into traffic only when this action would not require traffic to change its speed or direction in order to avoid his or her vehicle?

Head-on Collisions

A head-on collision with a vehicle traveling in the wrong lane may be preventable if the driver could have pulled off the road or taken other evasive action to prevent a collision. However, the driver should never drive into the other lane to avoid the oncoming vehicle. If the driver swerved off the road to avoid a head-on collision, the incident is non-preventable. The driver in this case made a good defensive driving decision, taking the lesser of two evils.

Many skidding conditions are caused by rain, freezing rain, fog, and snow, which all increase the hazard of travel. Oily road film, which builds up during a period of good weather, causes an especially treacherous condition during the first minutes of a rainfall. Loss of traction can be anticipated, and these incidents usually are preventable. Driving too fast for conditions is the most common reason why these types of incidents are preventable.
Questions to consider:

1. Was the driver operating at a safe speed considering weather and road conditions?
2. During inclement weather, was the driver keeping at least twice the safe following distance used for dry pavement?
3. Were all actions gradual?
4. Was the driver anticipating ice on bridges, in gutters, ruts, and near the curb?
5. Was the driver alert for water, ice, or snow in shaded areas, loose gravel, sand, ruts, etc.?

If a driver goes off the road or strikes another vehicle because of skidding, the incident is preventable.

Pedestrian Incidents

All types of pedestrian incidents, including collisions with pedestrians coming from between parked cars, are usually considered preventable. There are few instances where the action of pedestrians is so unreasonable that the operator could not be expected to anticipate such an occurrence.

Questions to consider:

1. Did the driver go through congested areas expecting that pedestrians would step in front of the vehicle?
2. Was the driver prepared to stop?
3. Did the driver keep as much clearance between his or her vehicle and parked vehicles, as safety permitted?
4. Did the driver stop when other vehicles had stopped to allow pedestrians to cross?
5. Did the driver wait for the green light or stop for the caution light?
6. Was the driver aware of children and prepared to stop if one ran into the street?
7. Did the driver give all pedestrians the right-of-way?
8. Did the driver stop for a school bus that was stopped and properly signaling that passengers were loading or unloading?

Backing Incidents

Backing a vehicle into another vehicle, an overhead obstruction, or a stationary object is normally preventable. The fact that someone was directing the driver in backing does not relieve the driver of the responsibility to back safely.

Questions to consider:

1. Did the driver plan ahead so that he or she could have pulled forward out of the parking space instead of backing?
2. Was it necessary to drive into the narrow street, dead-end alley, or driveway from which he or she backed up?

3. If the driver could not see where he or she was backing: Did the driver try to get someone to guide him or her?

4. Did the driver look all around the vehicle before backing up? Did the driver back up immediately after looking?

5. Did the driver use the horn while backing up? Were the back-up lights working?

6. Did the driver look to the rear without relying totally on the rear-view mirror?

7. If the distance was long, did the driver stop, get out, and look around occasionally?

8. Did the driver back up slowly?

9. Did the driver judge clearances accurately?

Parking Incidents

Doors on our driver's parked vehicle that are damaged when opened on the traffic side are considered preventable incidents. The driver is responsible to see that the traffic side is clear of traffic before any doors on that side are opened.

In most cases, if our driver strikes a parked vehicle's opening door while driving, it is considered preventable. Usually, our driver can see from a sufficient distance that the parked vehicle is occupied, and should therefore be prepared to stop, move closer to the center line, or change lanes.

It is a driver's responsibility to park the vehicle so that it will remain stationary. A runaway type incident is preventable and blaming such a collision on defective parking brakes or other holding devices are inadequate excuses. A good pre-trip inspection and maintenance program will eliminate most opportunities for this type of incident being the result of mechanical failure.

Incidents occurring when vehicles are properly and legally parked are considered non-preventable. Incidents occurring while a vehicle is double-parked or in a "No Parking" zone is preventable.

Questions to consider:

1. Was the vehicle parked on the proper side of the road?

2. Was it necessary to park there, or was there a safer only slightly less convenient place nearby?

3. Did the driver have to park on the traveled part of the highway, on the curve, or on the hill?

4. When required, did the driver warn traffic by emergency warning devices?

5. Did the driver park parallel to the curb?

6. Was it necessary to park so close to an alley or directly across from a driveway?

Collision with Obstructions

Obstructions can be avoided if the driver knows the height and width of the vehicle, pays attention to posted clearances, and takes the time to properly judge clearances.
Cargo Incidents

The incident should be considered preventable if the investigation shows a mechanical defect of which the driver was aware, a defect the driver should have found by inspecting the vehicle, or the driver caused the incident by rough and abusive handling. It is a driver’s responsibility to secure cargo properly to prevent shifting, loss, or damage. Cargo should be safely stowed to prevent flying objects that can strike or distract the driver.
Driving Safety Rules

Motor vehicle incidents continue to be the leading cause of workplace death in the nation. In 1995 alone, 1,329 workers were killed on the job in auto incidents. That’s one employee death every 7 hours of every day.

Motor vehicle incidents are: *

- The leading cause of death at work.
- The leading cause of death for people age 15 to 24.
- The second most common cause of death for people age 25 to 44.
- The third most common cause of death for people age 45 to 64.
- The fifth most common cause of death for all ages behind heart disease, cancer, stroke, and lung disease.

*Source: 1995 statistics from the National Institute of Occupational Safety and Health (NIOSH) and the Bureau of Labor Statistics (BLS).

Fortunately, auto incidents are often preventable. By driving defensively and using good judgment, you can significantly reduce your chances of being hurt or killed in a motor vehicle. The following defensive driving tips are designed to help you avoid incidents and injuries from your fleet operations.

These rules are mandatory for all employees driving Cirks Construction Inc. vehicles:

1. Personal and off duty use of Cirks Construction Inc. vehicles is prohibited.
2. Only authorized employees may drive Cirks Construction Inc. vehicles. No other family members may drive company vehicles.
3. Seat belts must be worn at all times per the law. Hundreds of studies over the years have proven, without a doubt, that seat belts save lives. This is true even in crashes involving fire and water submersion. Properly worn seat belts actually absorb crash forces that; otherwise, would be transferred to your body. If the seat belts in your vehicle are inoperative or defective, have them repaired or replaced immediately. You should wear the lap belt low across your hips and have the shoulder strap directly across your chest. You also need to keep the belt tight. There should not be more than an inch between your body and the belt at any point.
4. No employee is permitted to drive Cirks Construction Inc. vehicles while impaired by alcohol, illegal or prescription drugs, or over the counter medications. The use of drugs or alcohol while driving, or prior to driving, significantly increases your chances of having an incident. It should be at least eight hours from the time you take a drink until operating a vehicle. You should also avoid the use of prescription or over the counter medicines that make you drowsy.
5. All incidents involving Cirks Construction Inc. vehicles must be reported to the office immediately.
6. Employees with two or more preventable incidents in a three-year period, or that obtain three points on their driving record, will be subject to a loss of their driving privileges or have their driving privileges restricted.
7. Get the big picture while driving. Keep your eyes aimed high and try to anticipate hazards and other drivers' mistakes. You should be looking well ahead of where you are. You should also always leave yourself an out in case the other driver does the unexpected.

8. Maintain a safe following distance at all times. Approximately 1/3 of all auto incidents are rear end collisions. You should be at least two seconds behind the vehicle in front of you to allow yourself sufficient time to stop. Do not tailgate. Following distances should be increased for larger vehicles or if in slippery or rainy conditions.

9. Avoid passing on two lane roads. Head on collisions are the most common cause of fatalities. You should also turn on your headlights while driving on two lane roads. This helps oncoming traffic see and avoid you. Never pass another vehicle on blind turns or hills.

10. Inspect the vehicle for mechanical defects prior to each trip. Test your brakes as soon as you start out to ensure they are properly operating. Worn tires can make your vehicle difficult to control or stop.

11. Avoid dialing the phone, reading maps, or other distracting activities while driving. These actions take your eyes off the road and often cause you to swerve. Pull over into a safe parking area before making that call.

12. Never drive faster than road conditions warrant. Slow down when road conditions are poor (rain, fog, night) and never exceed posted speed limits.

13. Always signal when changing lanes or turning. Always signal well in advance when changing lanes or turning and make sure to check your blind spot for other vehicles. Also, avoid driving in someone else's blind spot. If they can't see you; they don't know you are there.

14. Use caution when passing any stopped vehicle, especially near intersections or cross walks.

15. Aggressive driving has become a significant problem in the past few years. Don't do it. Avoid tailgating, rapid lane changes, speeding, and hand gestures to bad drivers. You never know; they may be armed. If you are being tailgated, change lanes, and let them pass. It's really not worth getting killed over.

16. Intersection collisions are also a significant problem. These are often caused by someone running the red light. You should always be under control when approaching an intersection and be prepared to stop if the light changes.

17. Slow down and look for trains at all railroad crossings. Even with modern signals and gates, hundreds of cars are hit by trains each year at grade crossings.

18. Use your low beams while driving in fog and slow down. If you can't see, pull over into a safe parking area and wait for better visibility. Do not stop in the traffic lanes. You will almost certainly be hit by another vehicle if you do.

19. Always walk behind the vehicle before backing. This will ensure that there are no people or objects behind you that you cannot see from the driver's seat. You should also make sure that all loads are properly secured to prevent them from moving. Numerous incidents are caused by objects that have fallen off company vehicles.

20. Yield the right of way until you are sure the other driver is going to stop. Just because you have the legal right of way doesn't mean you should always take it. Always yield the right of way to emergency vehicles.
Defensive Drivers

- Expect the unexpected.
- Anticipate bad driving by others.
- Look ahead for hazards.
- Always leave themselves an out.
- Always drive under control.
- Obey the rules of the road.
Confined Space Operations

Occasionally in our work, we may encounter confined spaces. Confined space work requires special safety precautions to ensure that employees are not overcome by dangerous air contaminants or oxygen deficiency. In some cases, there may be fire or explosion hazards in confined spaces that do not exist in open areas. Many workers have been killed or seriously injured in confined spaces. To avoid this, Cirks Construction Inc. employees must adhere to the following rules. This section prescribes minimum standards for preventing employee exposure to dangerous air contamination or oxygen deficiency in confined spaces. In some cases, extra precautions may be necessary. As always, if you are unsure ask for assistance.

Definitions

A confined space has the following properties:

1. Existing ventilation is insufficient to remove dangerous air contamination or oxygen deficiency that may exist or develop.
2. Ready access or egress for the removal of a suddenly disabled employee is difficult due to the location or size of the opening(s).
3. The area is not designed for continuous human occupancy.
4. One means of access and egress.

Dangerous air contamination means an atmosphere presenting a threat of causing death, injury, acute illness, or disablement due to the presence of flammable or explosive, toxic, or otherwise injurious or incapacitating substances.

Dangerous air contamination due to the flammability of a gas or vapor is defined as an atmosphere containing the gas or vapor at a concentration greater than 20 percent of its lower explosive (lower flammable) limit (LEL).

Dangerous air contamination due to a combustible particulate is defined as a concentration greater than 20 percent of the minimum explosive concentration of the particulate.

Dangerous air contamination due to the toxicity of a substance is defined as the atmospheric concentration immediately hazardous to life or health. This definition of dangerous air contamination due to the toxicity of a substance does not preclude the requirement to control harmful exposures to toxic substances at concentrations less than those immediately hazardous to health or life.

Oxygen deficiency is an atmosphere containing oxygen at a concentration of less than 19.5 percent by volume.

Oxygen rich is an atmosphere containing oxygen at a concentration of more than 22 percent by volume. This creates additional fire hazards.

Typical Confined Spaces

- Vaults
- Pits
Prior to Confined Space Entry

1. Written understandable operating and rescue procedures shall be developed and shall be provided to affected employees via a detailed job hazard analysis. The operating procedures shall include provision for the surveillance of the surrounding area to avoid hazards such as drifting vapors from tanks, piping, and sewers.

2. All employees, including standby persons if needed, will be trained in the operating and rescue procedures, including instructions as to the hazards they may encounter.

3. Any lines, pipes, or hoses which may convey flammable, injurious, or incapacitating substances into the space shall be disconnected, blinded, or blocked off by other positive means to prevent the development of dangerous air contamination or oxygen deficiency within the space. The disconnection or blind shall be located or done in such a manner that inadvertent reconnection of the line or removal of the blind is effectively prevented.

4. The space shall be emptied, flushed, or otherwise purged of flammable, injurious, or incapacitating substances to the extent feasible.

5. The air shall be tested with an appropriate device or method to determine whether dangerous air contamination or an oxygen deficiency exists and a written record of such testing results shall be made and kept at the work site for the duration of the work. Affected employees or their representative shall be afforded an opportunity to review and record the testing results.

6. Where interconnected spaces are blinded off as a unit, each space shall be tested and the results recorded. The most hazardous condition found shall govern the entry procedures to be followed.

Confined Space Entry if Tests Show No Hazard

If dangerous air contamination or oxygen deficiency does not exist within the space, as demonstrated by tests performed in accordance with the pre-entry procedures, entry into and work within the space may proceed subject to the following provisions:

1. Air testing, in accordance with the pre-entry procedures, shall be conducted with sufficient frequency to ensure that the development of dangerous air contamination or oxygen deficiency does not occur during the performance of any operation.

2. Work stops, employees exit, and additional precautions are taken if dangerous air contamination or oxygen deficiency does develop.

Confined Space Entry if Tests Show Hazards are Present or are Likely to Develop
Where the existence of dangerous air contamination or oxygen deficiency is demonstrated by tests performed in accordance with the pre-entry procedures or if the development of dangerous air contamination or an oxygen deficiency is imminent, the following requirements shall also apply:

1. Existing ventilation shall be augmented by appropriate means.
2. When additional ventilation has removed dangerous air contamination or oxygen deficiency as demonstrated by additional testing conducted (and recorded), entry into and work within the space may proceed.
3. No source of ignition shall be introduced until the implementation of appropriate provisions of this section have ensured that dangerous air contamination due to flammable or explosive substances does not exist.
4. Whenever oxygen-consuming equipment such as welding torches, furnaces, and the like are to be used, measures shall be taken to ensure adequate combustion air and exhaust gas venting.
5. To the extent feasible, provision shall be made to permit ready entry and exit.
6. Where it is not feasible to provide for ready exit from spaces equipped with automatic fire suppression systems employing harmful design concentrations of toxic or oxygen-displacing gases, or total foam flooding, such systems shall be deactivated. Where it is not practical or safe to deactivate such systems, the use of respiratory protective equipment, such as a Self-Contained Breathing Apparatus (SCBA), shall apply during entry into and work within such spaces.

Confined Spaces Where Dangerous Air Contamination Cannot be Removed by Ventilation

It is the policy of Cirks Construction Inc. to only work in a confined space if it can be made safe by the means listed above. We will not work in confined spaces where there is an ongoing hazard of air contamination or oxygen deficiency. These operations require extra measures and precautions beyond our immediate ability to perform.
Company Policy for Permit-Required Confined Spaces

The superintendent and the safety director will identify permit-required confined spaces in our company’s workplaces. Employees will be required to obtain a permit to enter or work in those spaces. Prior to entry, the superintendent and the safety director will assess the conditions and hazards, and decide if workers will enter a permit space. The superintendent and the safety director will be responsible for testing and monitoring atmospheric conditions as required. Procedures will be initiated to eliminate or control the hazards in the space including, but not limited to, the following:

- Specifying acceptable entry conditions.
- Providing each authorized entrant or that employee’s authorized representative with the opportunity to observe any monitoring or testing of permit spaces.
- Isolating the permit space.
- Purging, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
- Providing pedestrian, vehicle, or other barriers as necessary to eliminate or control atmospheric hazards.
- Re-evaluating or verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry. Employees and their representatives are entitled to request additional monitoring at any time.
- Canceling entry permits once the work is completed, or conditions change, so that occupation of the confined space is no longer safe.

Cirks Construction Inc. will provide and maintain the following equipment at no cost to employees, and ensure that employees use the equipment properly:

- Testing and monitoring equipment required for atmospheric conditions
- Ventilating equipment
- Communications equipment
- Personal protective equipment where engineering controls do not eliminate hazards, or threat of hazards
- Lighting equipment
- Barriers and shields as required
- Equipment, such as ladders, needed for safe ingress and egress by authorized entrants
- Rescue and emergency equipment, except to the extent that the equipment is provided by rescue services
- Any other equipment necessary for safe entry into and rescue from permit spaces

An attendant will be designated for each area for the purpose of testing and monitoring conditions and personnel anytime employees are assigned to confined spaces. Personnel involved in a confined space activity will be designated as attendant, entry supervisor, or authorized entrant, and assigned specific duties relating to confined entry procedures as follows. Authorized
Attendants are those who monitor entrants’ activities from outside the space. Attendants have the following duties and responsibilities:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Knowing how many entrants are in permit space.
- Staying out of the space during entry operations.
- Keeping in contact with entrants.
- Ordering an evacuation for hazardous condition.
- Keeping unauthorized persons away from the space.
- Activating rescue procedures.

Authorized entrants are those permitted by an employer to enter a permit space. Entrants have the following duties and responsibilities:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Using equipment properly.
- Communicating regularly with the attendant.
- Notifying the attendant immediately of hazardous conditions.
- Leaving the space immediately during a hazardous condition or when the attendant orders an evacuation.

The entry supervisor makes sure attendants and entrants follow entry-permit procedures. The entry supervisor is responsible for the following:

- Knowing the permit-space hazards, including the symptoms and consequences of exposure.
- Verifying that the entry permit is accurate and current.
- Stopping entry operations and canceling the entry permit when permit-space work is done or during a hazardous condition.
- Ensuring that responders will be available in an emergency.
- Removing any unauthorized person who enters the space.
- Ensuring that entry operations are consistent if another authorized person must replace an attendant or an entrant.

Prior to beginning any work at a new job-site, the superintendent and the safety director will verify the closest emergency medical and rescue service’s ability to respond to a confined space emergency. The number for the verified emergency service will be prominently posted on the permit at the permit entry portal. In the event of an emergency requiring emergency service response, the assigned attendant will notify the entry supervisor who is responsible for contacting emergency services.
This service will be determined by the superintendent and the safety director to be qualified to provide emergency requiring emergency rescue and medical services in the event of a confined space emergency. The attendant will remain on station to assist in evacuating the space and prevent the entry of unauthorized rescue personnel.

Cirks Construction Inc. will evaluate a prospective rescue and emergency service’s ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified. What will be considered timely will vary according to specific hazard(s) identified and will vary accordingly to the specific hazards involved in each entry. For example, §1910.134, Respiratory Protection, requires that standby person(s) be provided that are capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH at atmospheres.

The superintendent and the safety director will 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 particulate permit space or types of permit spaces identified. The superintendent and the safety director will select a rescue team or service from those evaluated that:

- Has the capability to reach the victim(s) with in a time frame that is appropriate for the permit space hazard(s) identified.
- Is equipped for and trained in performing the needed rescue services.

The superintendent and the safety director will inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site. The superintendent and the safety director will provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and proactive rescue operations.

Cirks Construction Inc. employees who have been designated to provide permit space rescue and emergency services will be instructed in and adhere to the following measures:

- The superintendent and the safety director will provide affected employees with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train affected employees so they are proficient in the use of that PPE, at no cost to those employees.
- The superintendent and the safety director will train affected employees to perform assigned rescue duties and ensure that such employees successfully complete the training required to establish proficiency as an authorized entrant.
- The superintendent and the safety director will train affected employees in basic first-aid and cardiopulmonary resuscitation (CPR) and will ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available.

To facilitate non-entry rescue, retrieval systems or methods will be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems will meet the following requirements:

- Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant’s back, above the entrant’s head, or at another
point which presents a profile small enough for the successful removal of the entrant.

- The other end of the retrieval line will 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 will be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.

If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the work site, that MSDS or written information will be made available to the medical facility treating the exposed entrant.

In the event that an IDLH (Immediately Dangerous to Life and Health) entry is deemed necessary, the superintendent and the safety director will first contact the designated emergency response service, and ensure that emergency service is available on site before allowing entry into the confined space.

The assigned entry supervisor will be responsible for providing first aid where necessary after contacting emergency services. No employee will enter a permit-required confined space without first completing an entry permit and having the entry supervisor sign the permit. The steps of the entry-permit procedure include the following:

- Obtain an entry permit prior to entering the space.
- Accomplish all pre-permit activities required for entering the space, including atmospheric testing, controlling hazards, having required equipment on hand, and providing for emergency services.
- Complete all items on the entry permit.
- Have the entry supervisor authorize and sign the permit. If any item on the permit is checked “NO” (meaning not yet completed or available), the permit will not be signed.
- Attach a copy of the entry permit outside the entry portal of the confined space. Keep it there until the entry operations are completed and the supervisor cancels the permit.
- Proceed with entry operations.

Atmospheric monitoring will be performed regularly during confined space operations to ensure that conditions do not exist, or change, to threaten employee safety. Ventilation of confined spaces is required before entry, during monitoring and throughout the operation. Monitoring or re-evaluation of conditions may be requested at any time during the operation by any employee, or employee representative, who suspects that changes have occurred which might present a hazard to personnel.

All proposed entrants, attendants, and entry supervisors will participate in the review of the initial atmospheric monitoring, and the completion and review of the entry permit. Procedures for coordination entry operations for multiple employers working simultaneously as authorized entrants in a permit space, so that employees of one employer do not endanger the employees of any other employer include the following:
• When Cirks Construction Inc. makes arrangements to have another contractor perform work that involves permit space entry, Cirks Construction Inc. will:
  • Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with Cirks Construction Inc. permit space program.
  • Apprise the contractor of the elements, including the hazards identified and Cirks Construction Inc. experience with the space, which make the space in question a permit space.
  • Apprise the contractor of any precautions or procedures that Cirks Construction Inc. has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
  • Coordinate entry operations with the contractor, when our Cirks Construction Inc. personnel and the contractor’s personnel will be working in or near permit spaces.
  • Debrief the contractor at the conclusion of the entry operations regarding any hazards confronted or created in permit spaces during entry operations.

In addition to complying with the permit space requirements that apply to Cirks Construction Inc., each contractor who is retained to perform permit space entry operations will:
  • Obtain any available information regarding permit space hazards and entry operations from Cirks Construction Inc. entry supervisor.
  • Coordinate entry operations with the entry supervisor, when both Cirks Construction Inc. personnel and the contractor’s personnel will be working in or near permit spaces. Inform Cirks Construction Inc. entry supervisor of any hazards confronted or created in permit spaces.
  • Inform Cirks Construction Inc. entry supervisor of any hazards confronted or created in permit spaces, either during the entry operation or through a debriefing.

If more than one confined space is to be monitored by a single attendant, the means and procedures that will be used in order to enable the attendant to respond to emergencies in one or more permit spaces that he/she is monitoring work include:
  • Continuously maintains an accurate count of authorization entrants in the permit spaces and ensures that the means used to identify authorized entrants accurately identifies who is in the permit space.
  • Remains outside the permit spaces during entry operations until relieved by another attendant.
  • Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
  • Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space. Orders the authorized entrants to evacuate the permit spaces immediately under any of the following conditions if the attendant:
    o Detects a prohibited condition.
    o Detects the behavioral effects of hazard exposure in an authorized entrant.
o Detects a situation outside the spaces that could endanger the authorized entrants.

o Cannot effectively and safely perform all the duties required.

o Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

o Performs no duties that might interfere with the attendant’s primary duty to monitor and protect the authorized entrants.

Multiple confined space entry operations will be under the direct control of the entry supervisor, who will be available on site. The entry supervisor:

- Verifies that rescue services are available and that the means for summoning them are operable.

- 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.

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

- 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 permit and that acceptable entry conditions are maintained.

- Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations.

- Terminates the entry and cancels the permit as required.

The superintendent and the safety director will have the authority to cancel an entry permit upon completion of the assigned task, upon finding unsuitable conditions or preparation, or if unsuitable conditions develop. The entry supervisor will ensure that all personnel have exited the space, that equipment, tools, and materials have been removed, and that no condition which might create a hazard has been left unresolved. The entry supervisor will then mark the permit cancelled, sign the space provided for cancellation, and present the cancelled permit to the superintendent and the safety director for filing in records.

The Permit Required Confined Space Program will be reviewed in the event of an incident/injury, near miss, if employee complains, or at least annually using the cancelled entry permits as reference. Revisions will be made to the program as necessary to ensure the safety of our employees.
Respiratory Protection

The Occupational Safety and Health Administration (OSHA) construction industry regulations relating to respiratory protection (29 CFR 1926.103) are actually found under the general industry regulations applicable to respiratory protection in 29 CFR 1910.134. Those provisions mandate respiratory protection if engineering controls are not feasible or are ineffective. OSHA requires methods such as substituting fewer toxic materials or ventilating the work area to prevent atmospheric contamination. When engineering controls fail to reduce employee exposures to harmful contaminants below the permissible exposure limit (PEL) of a contaminant, respiratory protection and accompanying program elements must be put in place.

Occasionally our work may necessitate the use of respirators to protect against air contaminants. Due to the limitations of respirators and their uncomfortable nature, Cirks Construction Inc. will make every effort to provide other means of protection, such as local exhaust ventilation, or substitution of less hazardous material, prior to requiring employees to wear them.

When it is clearly impractical to remove harmful dusts, fumes, mists, vapors, or gases at their source, or where emergency protection against occasional or relatively brief exposure is needed, Cirks Construction Inc. will provide, and the employee exposed to such hazard shall use, approved respiratory equipment.

Whenever respirators are required to be used to control harmful exposures, only respiratory equipment approved for that purpose shall be used and such equipment shall be approved by the National Institute for Occupational Safety and Health (NIOSH). Only parts approved for the specific respirator system shall be used for replacement.

Written Respiratory Protection Program

The OSHA respiratory standard requires contractors to develop and implement a written respiratory protection program for situations in which PELs of airborne contaminants could be exceeded or when the employer requires use of respirators by workers. See also the section on Confined Spaces.

The written program also must address voluntary respirator use; respirator selection; medical evaluations; fit-testing; use of respirators; user seal checks; maintenance and care of respirators; identification of filters, cartridges, and canisters; employee training; and program evaluation. The standard requires the respiratory program to be administered by a program administrator and updated to reflect the changing workplace conditions that affect respirator use. The standard sets out several mandatory components within the aforementioned program categories including fit testing, seal-check, and cleaning procedures in addition to a medical evaluation questionnaire and voluntary-use procedures that are compiled in appendices to 29 CFR 1910.134.

Many of the elements listed may not need to change for each project. For example, medical evaluations, fit-test procedures, schedules, and procedures for maintaining respirators, air-quality requirements for supplied-air respirators, employee training and program evaluations often can remain consistent. The only change that may be needed in a work-site specific written program is the procedure for respirator selection. (The procedures for respirator selection are addressed later in this section.)
When employees voluntarily wear respiratory protection, the employer still must establish and implement written respiratory program components related to the medical evaluation of a worker's ability to wear the respirator safely. Elements relating to cleaning, storing, and maintaining respirators must be addressed, as well. Employees must be provided with copies of the information contained in Appendix D of the standard titled “Information for Employees Using Respirators When Not Required Under the Standard.” When filtering face pieces (dust masks) are worn voluntarily, employees only must be given the Appendix D information; however, when filtering face pieces are required by a contractor, the entire respiratory protection standard applies—that is, medical evaluation, fit testing and other components of a written respiratory program must be in place.

Although OSHA does not require specific training or qualifications for the program administrator, this person must know the standard and have enough experience or training to be able to enforce the written program and conduct evaluations of the program’s effectiveness.

General Respiratory Protection Guidelines

1. Atmospheric contamination will be prevented wherever feasible through engineering controls such as enclosure or confinement of the operation, general and local exhaust ventilation, or substitution of less toxic materials. When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

2. Cirks Construction Inc. shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where we cannot identify or reasonably estimate the employee exposure, the atmosphere shall be considered to be Immediately Dangerous to Life or Health (IDLH).

3. Respirators shall be provided when such equipment is necessary to protect the health of the employee.

4. Only NIOSH-certified respirators shall be used. The respirator shall be used in compliance with the conditions of its certification.

5. Cirks Construction Inc. will provide respirators that are applicable and suitable for the purpose intended. The Company shall select and provide an appropriate respirator based on the respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.

6. Respirators shall be selected from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

7. The Safety Director shall act as the Program Administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

8. Cirks Construction Inc. will provide respirators, training, and medical evaluations at no cost to the employee.

9. Cirks Construction Inc. will provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. We may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.
10. Cirks Construction Inc. will ensure that employees using tight-fitting face-piece respirators pass an appropriate Qualitative Fit Test (QLFT) or Quantitative Fit Test (QNFT).

11. Cirks Construction Inc. will establish and implement procedures for the proper use of respirators. These requirements include prohibiting conditions that may result in face-piece seal leakage, preventing employees from removing respirators in hazardous environments, taking actions to ensure continued effective respirator operation throughout the work shift, and establishing procedures for the use of respirators in IDLH atmospheres.

12. We shall provide each respirator user with a respirator that is clean, sanitary, and in good working order. The supervisor or manager shall ensure that respirators are cleaned and disinfected.

13. All filters, cartridges, and canisters used in the workplace must be legibly labeled and color-coded with the National Institute for Occupational Safety and Health (NIOSH) approval label that must not be removed.

14. Training and information will be provided to employees who are required to use respirators. The training will be comprehensive, understandable, and recur annually or more often if necessary.

15. The Safety Director shall conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult with employees to ensure that they are using the respirators properly.

16. Written information regarding medical evaluations, fit testing, and the respirator program shall be retained indefinitely. This information will facilitate employee involvement in the respirator program, assist us in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

17. Where respirator use is not required by a particular standard or hazard, Cirks Construction Inc. may provide respirators at the request of employees or permit employees to use their own respirators if we determine that such respirator use will not in itself create a hazard. If voluntary respirator use is permissible, we shall provide the respirator users with the information contained in Appendix D of section 5144 8CCR; (Information for Employees Using Respirators When Not Required Under the Standard). If employees choose to wear a dust mask, no medical evaluation or further training will be required. If they request to wear a respirator, even though it is not required, they will be included in the standard medical screening, fit testing, and training program.

**Respirator Selection**

The standard requires that the correct respiratory protection be selected to provide adequate protection against airborne hazards and that only respirators certified by the National Institute for Occupational Safety and Health (NIOSH) be used. Contractors are required to evaluate the respiratory hazards in their workplaces to determine the identity of contaminants, chemical states, and physical forms. If an employer cannot identify or reasonably estimate employee exposures to respiratory hazards, the employer must consider the atmosphere “Immediately Dangerous to Life or Health” (IDLH).

IDLH atmospheres require a full-face piece, pressure demand self-contained breathing apparatus (SCBA) or supplied-air respirator (SAR) with self-contained auxiliary air supply. Under most circumstances in roofing where respiratory hazards have been evaluated, SCBA and SAR are not needed—other respirators described here will be adequate. An exception may be when
employees need to enter a confined space, such as a tanker, because an oxygen-deficient atmosphere and other respiratory hazards may exist. See the NRCA Safety Manual chapter on confined space.

**Respirator Selection—Hazard Assessment**

Hazard assessments must be conducted to select the appropriate respirators for particular environmental conditions. A contractor should begin the hazard assessment by obtaining information from the material safety data sheets (MSDS) supplied by product manufacturers. The MSDS provide health hazard information, the nature of the chemicals in the product, the PEL and other valuable information.

To quantify the airborne concentration of a contaminant, air samples must be collected, and subsequent testing of samples will aid in selecting the type of respirator that is needed, if any.

Two methods of determining whether gas or organic vapor contaminants are present are through passive monitoring badges and colorimetric tubes.

Colorimetric tubes, which are available through most safety supply companies, provide the user with an instantaneous reading. These readings, however, can be inaccurate.

The passive monitor badges are a good alternative for organic vapor detection and are more accurate, but they do not provide an instant reading and must be sent to a lab for analysis.

Air-sampling pumps are capable of detecting airborne contaminants such as asbestos fibers or silica particles along with toxic gases or harmful vapors. Industrial hygiene firms or environmental test labs often are best-suited for analyzing results from air sampling and providing solutions for particular exposures.

After a hazard assessment has been completed, OSHA requires employers to implement one of the following methods, ranked by order of preference, to reduce employee exposures:

1. Engineering controls
2. Administrative/work practice controls
3. Personal protective equipment (PPE), such as respirators

An example of an engineering control is installation of a ventilation system which may work well in shops or manufacturing plants but are impractical in the construction industry. However, sometimes fans on rooftops may provide adequate ventilation. Another example of engineering control in the roofing industry that may eliminate a ventilation hazard is the use of fume-recovery units on kettles during built-up roofing applications.

If an engineering control can't be found, an administrative work practice control must be tried. An example of a work practice solution is keeping the lid closed on a kettle to keep fume exposure to a minimum. An example of an administrative control is rotating workers out of a hazardous atmosphere, when feasible, to keep the exposure levels below the PEL.

When no other solution can be found, PPE must be used. This is the least preferred method to use because the exposure hazard is not removed completely and exists in the area surrounding the worker protected by PPE.
Respirator Types

Respiratory selection is critical. To select the proper respirator, it must be understood that respirators only reduce exposures to airborne contaminants. They do not eliminate them. Based on how they operate, respirators are air-purifying (APR), supplied-air (SAR) or a combination of the two.

Most respirators have an inlet covering that acts as a barrier against respiratory hazards and connects the respirator to an air purifier or source of breathable air. Examples of inlet coverings include face pieces, helmets, or hoods. Most inlet coverings fall under one of two categories:

Tight-fitting: A tight-fitting covering, called a face piece, forms a complete seal on the wearer’s face. The face piece usually is made of a molded flexible elastomer (an elastic substance that resembles rubber) and available in three basic types typically used in roofing: quarter-mask, half-mask, and full-mask.

Loose-fitting: A loose-fitting covering doesn’t form a complete seal and may cover a wearer’s head or extend over the shoulders. A flexible tube usually supplies breathable air to a loose-fitting inlet covering, which can be used only with powered air-purifying respirators (PAPRs) or SARs.

Air-Purifying Respirators

APRs use purifying elements to clean the air a wearer is breathing. These purifying elements are:

- Filters that remove particulate matter
- Cartridges that remove gas or vapors
- Filter and cartridge combinations that remove particulates, gas, and vapors
- Canisters that remove gas or vapors (impractical for construction because of bulkiness)

As air passes through a purifying element, contaminants are removed from the air. Wearers operate a respirator by inhaling, which creates a negative pressure in the face piece that allows air to pass through the purifying element.

PAPRs operate similarly, but a pump is used to draw air in through the purifying element and then into the face piece.

A restriction to these types of respirators and their purifying elements is that they cannot be used in, nor do they eliminate the hazards of, oxygen-deficient or IDLH atmospheres. An oxygen-deficient atmosphere is an atmosphere that contains less than 19.5% oxygen, which can cause death.

Filters

In 29 CFR 1910.134, OSHA defines a filter as a component used in respirators to remove solids or liquid aerosols (e.g., particulates) from inhaled air.
NIOSH, as the certifying agency for all industrial respirators, updated the testing and certification standard for respirators on July 10, 1995. The revised standard, 42 CFR Part 84, changed the manufacturing and certification requirements for respirator filters. When protection against airborne particulates is needed, OSHA requires either a high-efficiency particulate air (HEPA) filter, certified under 30 CFR Part 11, or a filter that has been certified under 42 CFR Part 84. NIOSH publishes the 2004 Respirator Selection Logic that is helpful in determining the proper respirator for the applicable hazard. It can be downloaded at www.cdc.gov.

Under 42 CFR Part 84, particulate filters will have N, P or R designations, each with three efficiency levels. Respirators with N100 (99.97 percent efficient), N99 (99 percent efficient) and N95 (95 percent efficient) filters may be used for any solid or non-oil-containing particulate contaminant. Respirators with R and P series filters may be used for any particulate contaminant, including oil aerosols.

It is important to note that N and R series filters might have usage limitations because contaminants may degrade the filter media. Filters with P designations have longer usage limitations. Usage limitations are designated by respirator manufacturers. Filters must be replaced whenever particulate buildup causes breathing difficulties or filters become damaged or defective.

**Cartridges**

OSHA defines a cartridge as a container with a filter, sorbent, catalyst, or combination of these items that removes specific contaminants from air passed through the container. These cartridges must be equipped with end-of-service life indicators (ESLIs). An ESLI is a component of the cartridge that indicates, typically by changing colors, when the cartridge needs to be replaced.

Because most cartridges used by roofing contractors do not have ESLIs, OSHA requires “change-out,” or replacement, schedules to be developed. The purpose of change-out schedules is to replace cartridges before they reach the end of their service lives. To develop a change-out schedule, contractors can use objective data obtained from trade associations or respirator manufacturers, if available.

Some manufacturers have downloadable programs for estimating times for change-outs on their Web sites. Information such as humidity, contaminant concentration, an employee’s estimated workload and atmospheric pressure must be ascertained and entered into the program by the contractor. It is recommended that all hazard warnings associated with the program be read and followed when these programs are used.

As an alternative, OSHA published a guide for estimating times for organic vapor cartridge change-outs. It states the following:

- If a chemical’s boiling point is greater than 158 F and the concentration is less than 200 parts per million (ppm), an eight-hour service life at a normal working rate can be expected.

- Service life is inversely proportional to work rate. (This means that as the work rate increases or if it is already high, the length of time the cartridge will remain effective will be less than when work rates and, consequently, breathing rates are lower.)
• Reducing concentrations by a factor of 10 will increase service life by a factor of five.
• Humidity above 85 percent will reduce service life by 50 percent.

Cartridge respirators have significant limitations, which can prohibit their use. NIOSH prohibits the use of cartridge respirators when working with some specific chemicals because not all gases and vapors are removed by a cartridge’s medium. The manufacturer should be consulted for final determination of applicability of cartridge use. Contractors must ensure all filters and cartridges used in the workplace are labeled and color-coded with the NIOSH-approval label, which must remain legible and intact.

Filtering Face Pieces (Dust Masks)

NIOSH’s certification standard for respirators addresses dust masks and refers to them as filtering face pieces. OSHA defines a filtering face piece as a negative-pressure particulate respirator with a filter as an integral part of the face piece or the entire face piece composed of the filtering medium. These ordinarily are disposable, low-cost respirators for protection against particulates when exposures are below the PEL. Some come with integrated exhalation valves and are rated under the N, P or R standards at 95, 99, or 100 efficiency levels.

If a contractor elects to make use of filtering face pieces mandatory, then all the requirements of the OSHA respiratory protection standard apply. If employees voluntarily choose to wear the respirators, the contractor must make Appendix D of the standard available to them. A copy of the appendix is with the sample written program at the end of this chapter.

Supplied-Air Respirators

There are three basic types of atmosphere-supplying respirators:

1. Supplied-air respirators
2. Self-contained breathing apparatus
3. Combination of the two

These respirators are more sophisticated and generally never used in the roofing industry. They also require extensive training before use. The only application for these respirators may be when cleaning out a tanker or similar confined spaces. The units are supplied with breathable air from a stationary source, such as a compressor. The compressor must be able to provide breathable air that meets the American National Standards Institute (ANSI) grade-D breathing air requirements.

As an example, some roofing contractors who own asphalt or coal-tar tankers may depend on their crews to clean interior surfaces of the tanker. This task must be performed with extreme caution. A typical air-purifying respirator will not provide adequate protection against a hazard inside a tanker, such as oxygen deficiency. Air-purifying respirators only clean the air as it is inhaled; they cannot supply oxygen. More sophisticated types of respiratory protection, such as SCBAs, may be required to ensure adequate oxygen supply to a worker. The best way to determine the type of respiratory protection needed is to determine the type of atmosphere inside the tanker through the use of air-monitoring equipment, such as gas detectors. In addition to the respiratory requirement, there are requirements for permit-required confined space entry. That standard is codified at 29 CFR 1910.146 and discussed fully in another chapter of this manual.
Supplied-air respirators are included in the sample written program. If a contractor never uses supplied-air respirators, this portion should not be included in the company’s written program.

**Assigned Protection Factors**

When selecting air-purifying respirators, it is important to select those that are NIOSH-certified. It is also important to consider assigned protection factors (APFs) when selecting respirators. APF is the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements an effective respiratory protection program. APFs are listed in Table 1 of 1910.134(d). Because different types of respiratory equipment provide different degrees of protection, NIOSH and ANSI have designated APFs to the classes of respirators. OSHA enforces the NIOSH APFs in Table 1 of 1910.134(d) of the respiratory protection standard.

OSHA will promulgate its own APFs in the near future. In the interim, OSHA expects contractors to use the best available information when selecting respirators, which can be obtained from either ANSI Z 88.2-1992 APFs or NIOSH APFs; however, in the preamble of the standard, OSHA states that it will enforce the NIOSH APFs. Whenever there is an OSHA-specific standard, such as for asbestos, the APFs listed in the respirator-selection tables of the asbestos standard must be followed if the contractor’s activities fall within the scope of that particular standard.

The two basic types of respirators used in the roofing industry are full-face and half-mask. Both NIOSH’s and ANSI’s APFs for half-mask respirators are 10 times the PEL. NIOSH and OSHA APFs for a full-face respirator are 50 times the PEL. The full-face respirator covers the eyes, nose, and mouth, while the half-mask respirator only covers the nose and mouth. Both respirator types must be equipped with cartridges and/or filters that remove gases, vapors, and particulate contaminants.

**Medical Evaluations**

Respirator use puts a physical burden on the human body; prior to use of a respirator, a worker must be declared medically fit to wear one through a medical evaluation. The medical evaluation procedure requires:

- The employer identifies a physician or other professional licensed health care professional (PLHCP) to evaluate the employee using a medical questionnaire or initial medical examination
- The information obtained by questionnaire or examination must answer the questions laid out in the OSHA questionnaire in Appendix C of 1910.134.

Regardless of how a contractor chooses to have employees evaluated, he or she is required to provide supplemental information to the PLHCP before final determinations are made. This supplemental information includes:

- Type and weight of respirator to be used
- Duration and frequency of use
- Expected physical work effort
- Whether additional personal protective equipment (PPE) is to be worn
• Temperature and humidity extremes
• A copy of the written program and the medical evaluation portion of the standard

A follow-up medical examination is required if certain questions are answered “yes” on the questionnaire or the initial examination warrants it. Further evaluations are needed when any of the following occurs:

• An employee reports medical symptoms that are related to ability to use a respirator.
• A PLHCP, supervisor or program administrator informs the contractor that the employee needs reevaluation.
• Information from the respiratory protection program, including observations made during fit-testing and program evaluation, indicates a need for reevaluation.
• There is an increase in the physiological burden placed on the employee from temperature changes, changes in PPE, etc.

Fit Testing

Fit testing is required before any employee wears a respirator. A fit test allows an employee to select a respirator based on comfort, making sure the respirator fits correctly on his or her face.

Either a quantitative fit test (QNFT) or qualitative fit test (QLFT) must be conducted to ensure the proper make, model, size, and style of respirator is selected by an employee. Appendix A of standard 29 CFR 1910.134 provides protocol that must be followed when conducting the fit testing. A QLFT involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of a person wearing the respirator. If the person can detect the presence of the test agent through smell, taste or irritation, the face piece is inadequate. If the test agent is not detected, the respirator is the correct size, make, model and style for that person.

A QNFT is a type of fit test that actually detects the amount of air leakage into a respirator. This type of fit testing procedure requires appropriate instrumentation.

Additional fit tests are required:

• When a different face piece, size, make, or model is used
• When the employee reports or the contractor, PLHCP, supervisor or program administrator observes changes in the employee’s physical condition that could affect the fit of the respirator
• At least annually

Respirator Use

Contractors are required to develop and implement procedures for the proper use of respirators. The procedures must address situations, such as facial hair, where face piece-seal leakage can occur. Facial hair, such as beards, will not allow a respirator to seal tightly, rendering the respirator useless. Other issues may include weight loss or gain of 10 or more pounds, scars that might interfere with the seal and new use of dentures.
The procedures must prohibit employees from removing their respirators in hazardous atmospheres, as well as address the methods for performing user seal checks each time a respirator is put on. The user seal check is performed to ensure the respirator is sealed tightly to the face. This is accomplished by covering the exhalation valve of the respirator and gently exhaling. A slight positive pressure in the face piece will build, and if it is sealed correctly to the face, air will not escape. Next, the user must cover the inhalation valves by covering the cartridges or inhalation valves with the palms of his or her hands, inhaling to create slight negative pressure and holding his or her breath for 10 seconds. If no air enters the face piece after 10 seconds, the respirator’s seal is adequate. Mandatory Appendix B-1 explains the user seal-check procedure.

Contractors also are required to ensure continued respirator effectiveness by reevaluating whenever there is a change in work-area conditions. Employees must be allowed to leave the respirator-use area at any time they feel it is necessary to wash their hands and face because of increased irritation. Also, they must be allowed to leave the area when they detect vapor or gas breakthrough, changes in breathing resistance or face-piece leakage.

Respirator Maintenance and Care

Contractors must provide for the cleaning and disinfecting, storage, inspection, and repair of all respirators. When a respirator is assigned to an employee, the respirator must be cleaned as often as necessary to keep it sanitary. If the same respirator is used by multiple employees, it must be cleaned and disinfected after each individual’s use. Also, the respirator must be cleaned and disinfected each time it is used for fit testing.

Respirators must be stored in a clean area away from contaminants, dust, sunlight, and other potentially damaging conditions. Usually, an inexpensive airtight plastic container will achieve this, provided it is kept out of sunlight and extreme temperatures.

Inspections must be conducted on each respirator before each use and during cleaning. These inspections must include a check of respirator function on areas such as the face piece, head straps, valves, and cartridges. The respirator must also be inspected for the material's pliability, determining the degree of deterioration exhibited on the face piece and other components.

If during the inspection a defect is detected, the respirator must be removed immediately from service and either repaired or discarded. If it is repaired, only manufacturer’s parts for the specific type of respirator must be used.

Training

Each employee required to wear a respirator must be trained before its first use. The training must be comprehensive and repeated annually or more often, if necessary. This training must include:

- Limitations and capabilities of the respirator
- Respirator use during emergencies or when a respirator malfunction
- Reasons why respirators are required
- How improper fit, usage and maintenance can adversely affect the respirator
- How to inspect, put on and remove, use, and check the seals of the respirator
- Maintenance and storage procedures
How to recognize medical symptoms that limit or prevent the use of respirators

The requirements of standard 29 CFR 1910.134

Program Evaluation

The written respiratory program must be evaluated by the program administrator to determine if it is being properly implemented. Employees should be consulted in an effort to determine its effectiveness and identify problems with the program. If any problems are noted, they must be corrected and the changes reflected in the program.

Record Keeping

Medical evaluations must be kept by a contractor for 30 years, in accordance with the requirements in 29 CFR 1910.1020, “Access to Employee Exposure and Medical Records.” Fit-test records should be kept for the current year. When a new fit test is performed, the old fit test can be discarded.

Substance-Specific Standards

The new standard affects the 29 substance-specific standards of Subpart Z, Toxic and Hazardous Substances. OSHA’s goal is to make each substance-specific standard consistent with the new respiratory standard. Previously, most of the standards had different fit-testing protocols. To make compliance easier, OSHA withdrew each of those requirements and replaced them with new ones in the new standard.

In addition to Subpart Z, the following construction standards have been affected by the new changes:

29 CFR 1926.57 Ventilation
29 CFR 1926.60 Methyleneedianiline
29 CFR 1926.62 Lead
29 CFR 1926.103 Respiratory Protection
29 CFR 1926.800 Underground Construction
29 CFR 1926.1101 Asbestos
29 CFR 1926.1127 Cadmium

The remainder of this chapter includes a sample respiratory protection program. If a contractor performs a hazard analysis and determines respirators are not required, the respiratory protection program should not be included with the overall safety program.

If respirators are used, even on occasion, it is important to include them in the safety program. The information pertaining to SARs and SCBAs is included for those contractors who use them. If they are not used, do not include that information in the written program.
Sample Program

Respiratory Protection Program

Purpose
Cirks Construction Inc. is committed to providing a safe and healthy work environment for its employees. On occasion, employees may be exposed to airborne contaminants. In an effort to limit their exposure, Cirks Construction Inc. will do the following:

- Evaluate respiratory hazards in order to select appropriate respiratory protection.
- Ensure employees are medically able to wear respirators.
- Fit test employees with appropriate respirators.
- Establish procedures to ensure employees properly care for and maintain their respirators.
- Ensure high-quality breathing air is supplied for the air-supplying respirators.
- Conduct continuing respirator training.
- Evaluate the program periodically to ensure its effectiveness.

Scope and Application

This program applies to any employee who is required to wear a respirator during normal work activities and emergencies. Any employee who requests a respirator when its use is not required must comply with the medical evaluation and cleaning, maintenance, and storage elements of this program. Any employee who asks to wear a filtering face piece, or dust mask, is not subject to the medical evaluation or cleaning, maintenance, and storage requirements of this program.

This program will be updated to reflect changes in workplace conditions and processes that affect employees’ respirator use.

Employer and Employee Responsibilities Program Administrator

The respiratory program administrator for Cirks Construction Inc. is the Safety Director. This person’s responsibilities include:

- Establishing procedures for selecting respirators
- Arranging employee medical evaluations
- Developing procedures for fit testing all respirators
- Developing procedures and schedules for inspecting, cleaning, maintaining, repairing, and storing respirators
- Developing procedures for self-contained breathing apparatus, if used
- Ensuring employees are trained
- Evaluating the program
Employer

Cirks Construction Inc. will provide appropriate respirators when needed to protect the health of its employees. As a part of the written respiratory protection program, work-site procedures will be provided for all employees required to wear respirators.

Employees

Employees who wear respirators must use them in accordance with the instructions and training provided.

Employees must maintain their respirators properly and not alter them in any way.

Any employee wearing a respirator in a hazardous area must take periodic breaks in a safe area to rest and wash the face piece if it needs cleaning. If the respirator does not work properly on the job, the employee must go to a safe area immediately and report the problem to the program administrator.

Program Elements

Hazard Identification and Evaluation

Cirks Construction Inc. will identify and evaluate all workplaces for respiratory hazards. The evaluation will include an estimate of employee potential exposure to the hazards and the identity of each hazard's chemical state and physical form.

The program administrator will arrange these evaluations, and the information will be used to select and assign the proper respirators to employees.

Respirator Selection

The program administrator will select respirators by determining whether there is a potential for employees to be exposed to contaminants above their permissible exposure limits (PEL) or there is a specific reason an employee needs such protection. Only filters and/or chemical cartridges matched to expected atmospheric contaminants known to be present will be used. A variety of respirator sizes will be kept in stock to ensure proper fits for all employees.

The program administrator is also responsible for selecting appropriate respirator filters and/or cartridges based on a review of material safety data sheet (MSDS) or other relevant air-contaminant data. Cirks Construction Inc. will use only National Institute for Occupational Safety and Health- (NIOSH-) certified respirators. The program administrator will select respirators based on the criteria in Table I.

Respirator Selection Criteria

Particulate Exposure - Respirators will be selected on the basis of potential oil mist exposure (N, P or R), severity of the inhalation hazard (95 percent, 99 percent, or 100 percent efficient), air-particulate concentration and the availability of at least 20.9 percent oxygen.

Vapor and Gas Exposure - Respirators will be selected on the basis of chemical composition, physical state (vapor or gas), air-contaminant concentration and availability of at least 20.9 percent oxygen. Atmospheric oxygen at or below 19.5 percent or Supplied-air respirators will be
selected. Only Grade D contaminants that are immediately dangerous to life and breathing air will be used. Respirators will be selected based upon the task being performed and the unique risk associated with completing that work reviewing all relevant engineering controls, and the time required for workers to escape to a safe place.

When determining assigned protection factors (APFs), the program administrator will rely on the NIOSH Pocket Guide to Chemical Hazards until the Occupational Safety and Health Administration (OSHA) issues its final ruling covering APFs.

Medical Evaluations

Each employee required to wear a respirator or who requests an air-purifying respirator must be medically evaluated before being fit tested. The program administrator will make arrangements for each employee to have a medical evaluation by a professionally licensed health care provider (PLHCP).

The program administrator will provide a copy of the OSHA Respirator Medical Evaluation Questionnaire (1910.134, Appendix C) to each employee who must wear respirators. The program administrator will collect completed questionnaires and give them to the PLHCP.

The program administrator also will provide the PLHCP with the following information:

- Type and weight of respirator each employee will use
- Duration and frequency of use
- Expected physical work effort
- Any other protective equipment and clothing needed
- Temperature and humidity extremes at the job site
- Air contaminants and concentration levels that each employee may encounter

The PLHCP will discuss results of the evaluation with the employee and provide a written determination to the program administrator. The determination will not contain confidential medical information but will include:

- The PLHCP’s opinion of the employee’s ability to tolerate a respirator
- Any limitations of respirator use
- Any need for follow-up evaluations
- A statement that the employee has been informed of the determination

If the PLHCP recommends alternative respiratory protection, such as a powered-air purifying respirator, the program administrator will comply with the recommendation.

The program administrator will maintain a file of the PLHCP’s written determination for each employee.

Employees will receive follow-up medical evaluations under the following conditions:

- The employee reports medical signs or symptoms related to the use of the respirator.
• The PLHCP, a supervisor or the program administrator recommends a re-evaluation.
• Fit-test or other program information indicates a need for re-evaluation
• Changes in the workplace increase respiratory stress

Fit Testing

All employees using a tight-fitting face-piece respirator must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT). The program administrator will determine which test is appropriate for each type of respirator. Qualitative and quantitative fit tests will be administered with appropriate protocol from 29 CFR 1910.134, Appendix A. A QLFT will be used only to fit test negative pressure air-purifying respirators that achieve a fit factor of 100 or less.

Employees must be fit tested before they use a respirator for the first time; whenever they use a different respirator face piece; and after any changes in the physical condition that could affect respirator fit.

Fit tests will be administered using employees’ assigned respirators (from previous fit-testing results) or from a selection of respirators set up for fit-testing purposes (for an initial fit test).

All employees must be fit tested annually.

Respirator Use
Using Tight-fitting Respirators
Employees who have beards or other conditions that interfere with the face-to-face seal or valve function cannot wear tight-fitting respirator face pieces. Clean-shaven skin must be in contact with all respirator sealing surfaces. PPE or clothing that interferes with the face-to-face seal or valve function is not permitted.

Corrective lenses with temple bars or straps that interfere with face-to-face sealing area cannot be used with any respirator.

Each employee must perform a user seal check before putting on a tight-fitting respirator. The procedures can be found in 29 CFR 1910.134, Appendix B-1.

Monitoring Respirator Effectiveness

The program administrator will monitor and re-evaluate the effectiveness of employees’ respirators after any significant changes in workplace conditions or exposure levels. Employees are to leave the areas in which they wear respirators when they need to wash faces and their respirator face pieces; detect face piece leaks or change in breathing resistance; or must change respirators, filters, cartridges, or canister elements.

Using respirators in immediately dangerous to life and health (IDLH) atmospheres

IDLH atmospheres are rarely encountered in the roofing industry; however, should any employee need to enter an IDLH atmosphere, the following procedures will be implemented:

• At least one employee must stay immediately outside the IDLH atmosphere to respond to emergencies.
• The person entering the IDLH atmosphere and the person outside the IDLH atmosphere must maintain visual and voice or signal contact.
• The person outside the IDLH atmosphere must be trained and equipped to provide effective emergency response.
• The person outside the IDLH atmosphere must be equipped with a positive-pressure SCBA or positive-pressure supplied-air respirator with auxiliary SCBA and appropriate rescue retrieval equipment.
• The program administrator or other designated person must be notified before an emergency responder enters the IDLH environment.

Respirator Maintenance and Care

Before any new respirator is used, it must be washed, disinfected, and inspected according to the manufacturer’s instructions or the instructions in 29 CFR 1910.134, Appendix B-2. Employees must clean and disinfect their own respirators after each use and store them in a sanitary location so the face pieces and valves are protected.

Respirators used for fit testing must be cleaned and disinfected after each use by the person conducting the fit test.

Employees must inspect their respirators before they use them and after they clean them. Inspection includes a check of respirator function; tightness of connections; and the condition of the elastomeric face piece, head straps, valves, connecting tubes, cartridges, canisters, and filters.

Only trained employees can replace worn or deteriorated respirator parts. All repair work, adjustments and replaced parts must comply with the respirator manufacturer’s instructions.

Identity of Filters, Cartridges and Canisters

All filters, cartridges and canisters must be maintained as received by the manufacturers, distributors or suppliers and labeled and color-coded with the NIOSH-approval label. The label cannot be removed and must remain legible. Defective filters, canisters and cartridges cannot be used and must be removed from service.

Air Quality in Atmosphere-supplying Respirators

Compressed breathing air used in atmosphere-supplying respirators must meet the criteria established by the American National Standards Institute (ANSI) for grade D breathing air.

Training

Before any employee wears a respirator for the first time, he must receive training on and demonstrate comprehension of:

• Why a respirator is necessary
• How improper fit, use or maintenance can compromise the protective effect of a respirator
• A respirator’s capabilities and limitations
- How to use a respirator in emergency situations, including ones in which the respirator malfunctions
- How to inspect, put on and remove a respirator and check the seals
- Proper maintenance and storage procedures
- How to recognize medical signs and symptoms that may limit or prevent effective respirator use

Training will be provided by our program administrator or other qualified person. The training will be fully documented, certifying that employees understand the concepts presented and have demonstrated how to use and wear the respirator.

The training must give each user an opportunity to handle the respirator; have it fitted properly; test its face-to-face seal; wear it in normal air for a trial period; and wear it in a test atmosphere.

Retraining must be performed annually or as deemed necessary by the program administrator.

Employees who are responsible for inspecting the emergency and supplied-air respirators will receive supplied-air respirator-specific training.

Employees who are permitted to wear respirators must first read the information in 29 CFR 1910.134, Appendix D.

Program Evaluation

The program administrator will evaluate this program annually or more often, if necessary, to ensure it remains effective. The administrator will consult employees about proper respirator fit, selection, use and maintenance and make periodic workplace observations to confirm that respirators are being used and maintained properly.

Record Keeping

The program administrator will maintain records of nonconfidential medical evaluation determinations, fit testing, training documentation and annual inspection audits and make them available to employees.
OSHA Respiratory Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1 and to question 9 in Section 2 of Part A do not require a medical examination.

To the employee:

Can you read: Yes No

Your employer must allow you to answer this questionnaire during normal working hours or at a time and place that is convenient for you. To maintain your confidentiality, your employer or supervisor will not look at or review your answers and your employer must tell you how to deliver or send this questionnaire to a health care professional, who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:
2. Your name:
3. Your age (to nearest year):
4. Sex: Male Female
5. Your height: feet inches
6. Your weight: pounds
7. Your job title:
8. A phone number where you can be reached by the health-care professional who reviews this questionnaire (include the area code):
9. The best time to phone you at this number:
10. Has your employer told you how to contact the health care professional who will review this questionnaire? Yes No
11. Circle (a. or b.) the type of respirator you will use:
   a. N, R, or P disposable respirator (filter-mask, non-cartridge type only)
   b. Other type (for example, half- or full-face piece type, powered-air purifying, supplied-air, self-contained breathing apparatus)
12. Have you worn a respirator? Yes No
   a. If “Yes,” what type(s)?

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator. (Please circle Yes or No.)

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month? Yes No
2. Have you ever had any of the following conditions?
   a. Seizures (fits) Yes No
   b. Diabetes (sugar disease) Yes No
3. Have you ever had any of the following pulmonary or lung problems?
   a. Asbestosis    Yes   No
   b. Asthma        Yes   No
   c. Chronic bronchitis Yes   No
   d. Emphysema     Yes   No
   e. Pneumonia     Yes   No
   f. Tuberculosis  Yes   No
   g. Silicosis     Yes   No
   h. Pneumothorax (collapsed lung) Yes   No
   i. Lung cancer   Yes   No
   j. Broken ribs   Yes   No
   k. Any chest injuries or surgeries Yes   No
   l. Any other lung problem that you’ve been told about Yes   No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?
   a. Shortness of breath Yes   No
   b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline Yes   No
   c. Shortness of breath when walking with other people at an ordinary pace on level ground Yes   No
   d. Have to stop for breath when walking at your own pace on level ground Yes   No
   e. Shortness of breath when washing or dressing yourself Yes   No
   f. Shortness of breath that interferes with your job Yes   No
   g. Coughing that produces phlegm (thick sputum) Yes   No
   h. Coughing that wakes you early in the morning Yes   No
   i. Coughing that occurs mostly when you are lying down Yes   No
   j. Coughing up blood in the last month Yes   No
   k. Wheezing Yes   No
   l. Wheezing that interferes with your job Yes   No
   m. Chest pain when you breathe deeply Yes   No
   n. Any other symptoms that you think may be related to lung problems Yes   No

5. Have you ever had any of the following cardiovascular or heart problems?
6. Have you ever had any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest Yes No
   b. Pain or tightness in your chest during physical activity Yes No
   c. Pain or tightness in your chest that interferes with your job Yes No
   d. In the past two years, have you noticed your heart skipping or missing a beat? Yes No
   e. Heartburn or indigestion that is not related to eating Yes No
   f. Any other symptoms that you think may be related to heart or circulation problems Yes No

7. Do you currently take medication for any of the following problems?
   a. Breathing or lung problems Yes No
   b. Heart trouble Yes No
   c. Blood pressure Yes No
   d. Seizures (fits) Yes No

8. If you’ve used a respirator, have you ever had any of the following problems? (If you’ve never used a respirator, check the following space, and go to question 9.)
   a. Eye irritation Yes No
   b. Skin allergies or rashes Yes No
   c. Anxiety Yes No
   d. General weakness or fatigue Yes No
   e. Any other problem that interferes with your use of a respirator Yes No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? Yes No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently)? Yes No
11. Do you currently have any of the following vision problems?
   a. Wear contact lenses  Yes  No
   b. Wear glasses  Yes  No
   c. Color blind  Yes  No
   d. Any other eye or vision problem  Yes  No

12. Have you ever had an injury to your ears, including a broken ear drum?  Yes  No

13. Do you currently have any of the following hearing problems?
   a. Difficulty hearing  Yes  No
   b. Wear a hearing aid  Yes  No
   c. Any other hearing or ear problem  Yes  No

14. Have you ever had a back injury?  Yes  No

15. Do you currently have any of the following musculoskeletal problems?
   a. Weakness in any of your arms, hands, legs, or feet  Yes  No
   b. Back pain  Yes  No
   c. Difficulty fully moving your arms and legs  Yes  No
   d. Pain or stiffness when you lean forward or backward at the waist  Yes  No
   e. Difficulty fully moving your head up or down  Yes  No
   f. Difficulty fully moving your head side to side  Yes  No
   g. Difficulty bending at your knees  Yes  No
   h. Difficulty squatting to the ground  Yes  No
   i. Difficulty climbing stairs or a ladder carrying more than 25 pounds  Yes  No
   j. Any other muscle or skeletal problem that interferes with using a respirator  Yes  No

Employee Name:  

Signature:  

Date:  

Part B. Any of the following questions and other questions may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower-than-normal amounts of oxygen? Yes No
   If “when you’re working under these conditions?” Yes No

2. At work or home, have you ever been exposed to hazardous solvents or hazardous airborne chemicals (e.g., gases, fumes, or dust) or come into skin contact with hazardous chemicals? Yes No
   If “Yes,” name the chemicals if you know them:

3. Have you ever worked with any of the materials or under any of the conditions listed below?
   a. Asbestos Yes No
   b. Silica (e.g., in sandblasting) Yes No
   c. Tungsten/cobalt (e.g., grinding or welding this material): Yes No
   d. Beryllium Yes No
   e. Aluminum Yes No
   f. Coal (e.g., mining) Yes No
   g. Iron Yes No
   h. Tin Yes No
   i. Dusty environments Yes No
   j. Any other hazardous exposures Yes No
      If “Yes,” describe these incidents of exposures:

4. List any second jobs or side businesses you have:

5. List your previous occupations:

6. List your current and previous hobbies:

7. Have you been in the military services?
   If “Yes,” were you exposed to biological or chemical agents (either in training or combat)? Yes No

8. Have you ever worked on a hazardous material team? Yes No
9. Other than medications for breathing and lung problems, heart trouble, blood pressure and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes No
If “Yes,” name the medications if you know them:

10. Will you be using any of the following items with your respirator(s)?
   a. High-efficiency purifying air filters Yes No
   b. Canisters (e.g., gas masks) Yes No
   c. Cartridges Yes No

11. How often are you expected to use the respirator(s)? Circle “Yes” or “No” for all answers that apply to you.
   a. Escape only (no rescue) Yes No
   b. Emergency rescue only Yes No
   c. Less than five hours per week Yes No
   d. Less than two hours per day Yes No
   e. Two to four hours per day Yes No
   f. More than four hours per day Yes No

12. During the period you are using the respirator(s), is your work effort:
   a. Light (less than 200 kcal per hour)? Yes No
      If “Yes,” how long does this period last during the average shift? hours minutes
      Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work and standing while operating a drill press (1 to 3 pounds) or controlling machines.
   b. Moderate (200 to 350 kcal per hour): Yes No
      If “Yes,” how long does this period last during the average shift? hours minutes
      Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 pounds) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; and pushing a wheelbarrow with a heavy load (about 100 pounds) on a level surface.
   c. Heavy (above 350 kcal per hour): Yes No
      If “Yes,” how long does this period last during the average shift? hours minutes
      Examples of heavy work are lifting a heavy load (about 50 pounds) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; and climbing stairs with a heavy load (about 50 pounds).
13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you’re using your respirator?  Yes  No
   If “Yes,” describe this protective clothing and/or equipment:

14. Will you be working under hot conditions (temperature exceeding 77 F)?  Yes  No
15. Will you be working under humid conditions?  Yes  No
16. Describe the work you’ll be doing while you’re using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you’re using your respirator(s) (e.g., confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance you’ll be exposed to when you’re using your respirator(s):
   1) Name of the first toxic substance:
      Estimated maximum exposure level per shift:
      Duration of exposure per shift:
   2) Name of the second toxic substance:
      Estimated maximum exposure level per shift:
      Duration of exposure per shift:
   3) Name of the third toxic substance:
      Estimated maximum exposure level per shift:
      Duration of exposure per shift:
   
   The name of any other toxic substances you will be exposed to while using your respirator:

19. Describe any special responsibilities you’ll have while using your respirator(s) that may affect the safety and well-being of others (e.g., rescue, security):

Employee Name:  ________________________________

Signature:  ________________________________

Date:  _________________
Supplemental Information to the PLHCP

Before a recommendation can be made by the professionally licensed health care provider (PLHCP), OSHA requires the following information be included so it, too, can be taken under consideration:

1. The type and weight of the respirator
2. The duration and frequency of respirator use
3. The expected physical work effort
4. Any additional PPE or clothing to be worn
5. Temperature and humidity extremes that may be encountered
6. A copy of the Cirks Construction Inc. written program and a copy of OSHA’s standard, 29 CFR 1910.134

Employee Name:  
Job Title:  

Type of respirator:  
- Half mask
- Full-face piece
- Dust mask
- Powered air-purifying respirator

Duration/Frequency of use:  
<table>
<thead>
<tr>
<th>Duration</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Daily</td>
</tr>
</tbody>
</table>

Number of times per week:  
Number of times per month:  

Expected workload:  
- Light
- Medium
- Heavy

Indicate any other PPE required at same time of respirator use:

Temperature and humidity extremes:  
Low temperature:  
High temperature:  
High humidity:

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 the respirator itself does not present a hazard.

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. The National Institute for Occupational Safety and Health (NIOSH) 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.
Ergonomics

Studies have shown over the years that poorly designed and arranged work areas, awkward work postures, and repetitive motions can lead to a variety of injuries including carpal tunnel syndrome and tendonitis, which are often referred to as Repetitive Motion Injuries (RMIs). As with cancer, heart disease, and many other ailments, there are risk factors that increase an individual's likelihood of developing RMIs. If the risk factors are reduced, so are the chances of being injured. While some of these risk factors, such as family history, cannot be controlled in the employment setting, many can. Including:

- The force used to perform a task.
- Posture while performing tasks.
- The number of repetitions performed in a given time period.
- Mechanical stresses such as hard surfaces.

Cirks Construction Inc. has developed the following program designed to minimize RMIs. The program includes worksite evaluations, control of exposures that have caused RMIs, and training of employees.

Worksite Evaluation and Exposure Reduction

Each job, process, or operation of identical work activity that has resulted in at least two RMIs or a representative number of such jobs, processes, or operations shall be evaluated for exposures that have caused RMIs. Cirks Construction Inc. may request assistance from outside consultants for this purpose.

Any exposures that have caused RMIs shall, in a timely manner, be corrected or if not capable of being corrected have the exposures minimized to the extent feasible. We shall consider engineering controls, such as work station redesign, adjustable fixtures or tool redesign, and administrative controls, such as job rotation, work pacing, or work breaks.

Training

Affected employees shall be provided training that includes an explanation of:

- Cirks Construction Inc. program.
- The exposures which have been associated with RMIs.
- The symptoms and consequences of injuries caused by repetitive motion.
- The importance of reporting symptoms and injuries to their supervisor.
- Methods used to minimize RMIs.

This training may be conducted as part of the regular safety meetings.
Forklifts

Each year about 100 workers are killed and almost 95,000 injured in industrial truck incidents across the country. To properly protect our employees from such incidents, Cirks Construction Inc. has adopted the following Forklift Safety Program.

General

Cirks Construction Inc. will ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the training and evaluation specified below.

Prior to permitting an employee to operate a powered industrial truck (except for training purposes), Cirks Construction Inc. shall ensure that the employee has successfully completed a training program.

Training Program Implementation

Trainees may operate a powered industrial truck only:

- Under the direct supervision of persons who have the knowledge, training, and experience to train operators and evaluate their competence.
- Where such operation does not endanger the trainee or other employees.

Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video, and written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

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.

Note: This section does not require that the training be given by any particular individual or organization. The trainer must only be able to demonstrate that they have appropriate knowledge, training, and experience to train others and evaluate their competence.

Training Program Content

Powered industrial truck operators shall receive initial training in the following topics:

- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.
- Differences between the truck and the 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 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 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 section.

Refresher Training and Evaluation

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.

Refresher training in relevant topics shall be provided to the operator when:
- The operator has been observed to operate the vehicle in an unsafe manner.
- The operator has been involved in an incident or near-miss incident.
- The operator has received an evaluation that reveals that the operator is not operating the truck safely.
- The operator is assigned to drive a different type of truck.
- A condition in the workplace changes in a manner that could affect safe operation of the truck.
An evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years.

**Avoidance of Duplicative Training**

If an operator has previously received training in a topic specified above, and such training is appropriate to the truck and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the truck safely.

*Note: This section reduces the training requirement for previously trained operators provided we can demonstrate that the operator knows the material. Since some of the required training is unique to the area where the lift will be operated, we must still cover these areas even if the employee was previously trained.*

**Certification**

Cirks Construction Inc. shall certify that each operator has been trained and evaluated as required by this paragraph. The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.
Fire Prevention and Emergency Action Plan

Cirks Construction Inc. has developed the following emergency plan to cover those designated actions that must be taken to ensure employee safety from fire and during other emergencies.

Office, Shop, and Warehouse Emergency Evacuation and Fire Prevention

The Safety Director is responsible for ensuring the following:

1. That all required emergency exits are clearly identified in the office, shop, and warehouse and that all required firefighting and emergency equipment is available and in good condition.

The following items will be maintained:

- First aid kit
- Drinking water
- Flashlight
- Portable battery powered radio and batteries
- Fire extinguishers
- Wrench to shut off the main gas valve
- Pry bars, axes, saws, tools, or similar devices for employee rescue

2. Creating a facility map designating all emergency evacuation routes and the locations of all firefighting equipment and emergency supplies and equipment. These maps will be posted in at least two locations in the facility.

3. Training all exposed employees on the procedures to be followed in the event of fire, earthquake, or other emergency including how to properly notify other affected employees.

4. Identifying potential fire hazards in the office, shop, and warehouse and ensuring that adequate steps are taken to prevent fires.

5. Ensuring that combustible trash and materials are removed promptly from the facility, and that all flammable and combustible liquids are properly stored and handled.

During an Emergency

In the event of an emergency such as earthquake or fire, all employees are expected to evacuate the premises immediately.

Employees will be notified of emergencies through one of the following:

- Fire alarm
- Intercom
- Emergency horn
- Direct voice communication

After the emergency evacuation has been completed, a head count will be taken to ensure everyone is out of the building.
Fire Prevention in Shops and Warehouses

The following procedures will be used to prevent fires in shops and warehouses:

1. All accumulated combustible trash and debris will be removed as soon as practical.

2. Flammable liquids will only be stored and dispensed from UL approved safety containers designed for that purpose.

3. All rags soaked with flammable or combustible liquids will be properly stored in closed metal containers.

4. Appropriate precautions will be taken to prevent fires when torch cutting, welding, or soldering.

5. Compressed gas cylinders containing flammable or explosive gasses will be properly stored in the upright position with their caps on and protected from heat or puncture. Fuel gas and oxygen shall be separated at least 20 feet when stored.

6. Smoking or open lights are prohibited within 50 feet of flammable liquid or gas storage and dispensing areas.

7. Flammable solvents will not be used for cleaning purposes.

8. A fire extinguisher, rated not less than 2A, shall be provided for each 3,000 square feet of the floor area, or fraction thereof. Where the floor area is less than 3,000 square feet, at least one extinguisher shall be provided.

9. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 75 feet.

10. At least one fire extinguisher, rated not less than 2A, shall be provided on each floor. In multi-story buildings, at least one fire extinguisher shall be located adjacent to the stairway at each floor level.

11. A fire extinguisher, rated not less than 10B, shall be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the job site. This requirement does not apply to the integral fuel tanks of motor vehicles.

12. Portable fire extinguishers shall be inspected monthly, or at more frequent intervals by the employer, and serviced at least annually by a person licensed or registered by the State Fire Marshal.

**NOTE:** Inspection is a "quick check" that an extinguisher is available and will operate. It is intended to give reasonable assurance that the extinguisher is fully charged and operable. This is done by seeing that it is in its designated place, that it has not been actuated or tampered with, and that there is no obvious or physical damage or condition to prevent operation.

13. Suitable fire control devices, such as portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored.

14. At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located outside of, but not more than 10 feet from, the door opening into any room used for flammable liquid storage.
15. At least one portable fire extinguisher, having a rating of not less than 20-B units, shall be located not less than 25 feet, nor more than 75 feet, from any flammable liquid storage area located outside.

Fire Prevention and Emergency Evacuation at Field Project Sites

The following SSFPP / SSSP outlines the Health, Safety, and Environmental (HSE) requirements for Cirks Construction Inc. (CCI) projects. These requirements are written to help protect site personnel, visitors, and the general public from exposure to potential HSE hazards on this job site. There are several plans and actions that are included to ensure that we act to protect the environment, the general public, as well as our workforce during the construction phase of this project. This fire prevention plan is provided only as a guide to help employers and employees comply with the requirements of the Occupational Safety and Health Administration’s (OSHA) Fire Prevention Plan Standard.

I. Objective

II. Background

III. Assignment of Responsibility

IV. Plan Implementation
   A. Good Housekeeping
   B. Maintenance

V. Types of Hazards
   A. Electrical Hazards
   B. Portable Heaters
   C. Office Fire Hazards
   D. Cutting, Welding, and Open-Flame Work
   E. Flammable and Combustible Materials
   F. Smoking

VI. Training

VII. Program Review

VIII. Attachments
   A. Fire Risk Survey
   B. General Fire Prevention Checklist
   C. Exits Checklist
   D. Flammable and Combustible Material Checklist
I. **OBJECTIVE**

The purpose of this Fire Prevention Plan is to eliminate the causes of fire, prevent loss of life and property by fire, and comply with the Occupational Safety and Health Administration’s (OSHA) standard on fire prevention. The plan helps employees recognize, report, and control fire hazards.

II. **BACKGROUND**

Cirks Construction Inc. is committed to minimizing the threat of fire to employees, visitors, and property. Cirks Construction Inc. complies with all applicable laws, regulations, codes, and good practices pertaining to fire prevention. Cirks Construction Inc. separate Emergency Action Plan outlines procedures for responding to fires. This Fire Prevention Plan reduces the risk of fires in the following ways:

A. The CCI superintendent in charge of the project identifies materials that are potential fire hazards and their proper handling and storage procedures;

B. distinguishes potential ignition sources and the proper procedures for control of those materials;

C. describes fire protection equipment or systems;

D. identifies people responsible for maintaining the equipment and systems installed to prevent or control ignition of fires;

E. Identifies people responsible for the control and accumulation of flammable or combustible material;

F. Describes good housekeeping procedures for ensuring control of accumulated flammable and combustible waste material and residues; and

G. The Cirks Construction Inc. corporate Safety Director provides employee training addressing fire hazards they may encounter.

III. **ASSIGNMENT OF RESPONSIBILITY**

Fire safety is everyone’s responsibility. All employees should know how to prevent and respond to fires, and should understand that they are responsible for adhering to company policy regarding fire emergencies. The CCI Superintendent will conduct detailed, daily safety meetings and training for all workers on this site. Workers shall be instructed the recognition of jobsite-specific hazards and specific procedures for protecting themselves.

A. **Management**

Management determines the Cirks Construction Inc. fire prevention and protection policies. Management will provide adequate controls to provide a safe workplace, and will provide adequate resources and training to its employees to encourage fire prevention and the safest possible response in a fire emergency.

B. **Plan Administrator**

The corporate Safety Director will manage the Fire Prevention Plan for Cirks Construction Inc. and will maintain all records pertaining to the plan. The Plan Administrator will also:
1. Develop and administer the Cirks Construction Inc. fire prevention training program;
2. Ensure that fire control equipment and systems are properly maintained;
3. With the help of the onsite superintendent will control fuel source hazards; and
4. Conduct fire risk surveys with the local fire department and other emergency responders, and make recommendations.

C. Cirks Construction Inc. Superintendents

Cirks Construction Inc. superintendents are responsible for ensuring that all workers on this site receive appropriate fire safety training. Cirks Construction Inc. superintendents are also responsible for enforcing Cirks Construction Inc. fire prevention and protection policies.

D. Employees

All employees will:
1. Complete all required training before working without supervision;
2. Conduct operations safely to limit fire risk;
3. Report potential fire hazards to Cirks Construction Inc. superintendents; and
4. Follow fire emergency procedures.

IV. PLAN IMPLEMENTATION

A. Good Housekeeping

To limit the risk of fires, employees will take the following precautions:
1. Minimize storage of combustible materials.
2. Make sure doors, hallways, stairs, and other exit routes are free of obstructions.
3. Dispose of combustible waste in covered, airtight, metal containers.
4. Use and store flammable materials in well-ventilated areas away from ignition sources.
5. Use only nonflammable cleaning products.
6. Keep incompatible (chemically reactive) substances away from each other.
7. Perform “hot work” (welding or working with an open flame or other ignition source) in controlled and well-ventilated areas.
8. Keep equipment in good working order; inspect electrical wiring and appliances regularly and keep motors and machine tools free of dust and grease.
9. Ensure that heating units are safeguarded.
10. Report all gas leaks immediately and will ensure they are repaired immediately.
11. Repair and clean up flammable liquid leaks immediately.
12. Keep work areas free of dust, lint, sawdust, scraps, and similar material.
13. Do not rely on extension cords if wiring improvements are needed, and take care not to overload circuits with multiple pieces of equipment.

14. Ensure that required hot-work permits are obtained.

15. Turn off electrical equipment when not in use.

B. Maintenance

Cirks Construction Inc. onsite superintendent will ensure that equipment is maintained according to manufacturers' specifications. Cirks Construction Inc. must also comply with requirements of National Fire Protection Association (NFPA) codes for specific equipment. Only properly trained people may perform maintenance work.

The following equipment is subject to maintenance, inspection, and testing procedures:

1. equipment installed to detect fuel leaks, control heating, and control pressurized systems;
2. portable fire extinguishers, automatic sprinkler systems, and fixed extinguishing systems;
3. detection systems for smoke, heat, or flame;
4. fire alarm systems; and
5. emergency backup systems and the equipment they support.

V. TYPES OF HAZARDS

The following sections address the major workplace fire hazards at Cirks Construction Inc. the facilities and the procedures for controlling the hazards.

A. Hazards

Electrical system failures and the misuse of electrical equipment are leading causes of workplace fires. Fires can result from loose ground connections; wiring with frayed insulation; or overloaded fuses, circuits, motors, or outlets.

To prevent electrical fires, employees will:

1. Ensure worn wires are replaced;
2. Use only appropriately rated fuses;
3. Never use extension cords as substitutes for permanent wiring;
4. Use only approved extension cords [those with the Underwriters Laboratory (UL) or Factory Mutual (FM) label];
5. Check wiring in hazardous locations where the risk of fire is especially high;
6. Check electrical equipment to ensure it is properly grounded or double insulated; and
7. Ensure adequate spacing during maintenance.

B. Portable Heaters
All portable heaters must be approved by the corporate Safety Director and or the Project Manager. Portable electric heaters must have tip-over protection that automatically shuts off the unit when it is tipped over. A portable heater may only be plugged into a wall outlet and never into an extension cord or cubicle outlet. Allow adequate clearance between the heater and combustible furnishings or other materials at all times.

C. Office Fire Hazards

Fire risks are not limited to Cirks Construction Inc. ’s industrial facilities. Office fires have become more likely due to increased use of electrical equipment, such as computers and copiers. To prevent office fires, employees must:

1. Avoid overloading circuits with office equipment;
2. Turn off and unplug nonessential electrical equipment, such as coffee pots, at the end of each workday;
3. Keep storage areas clear of rubbish;
4. Ensure that extension cords are not placed under carpets; and
5. Ensure that trash and paper set aside for recycling is not allowed to accumulate.

D. Cutting, Welding, and Open-Flame Work

The onsite superintendent will ensure the Cirks Construction Inc. Hot Work operating procedures and proper permitting is executing on a daily basis for all trades. They will ensure the following:

1. All necessary hot work permits have been obtained before work begins.
2. Cutting and welding are done by authorized personnel in designated areas whenever possible.
3. Adequate ventilation is provided.
4. Torches, regulators, pressure-reducing valves, and manifolds are UL-listed or FM-approved.
5. Oxygen-fuel gas systems are equipped with listed or approved backflow valves and pressure-relief devices.
6. Cutters, welders, and helpers are wearing eye protection and protective clothing, as appropriate.
7. Cutting or welding is prohibited in sprinklered buildings while sprinkler protection is out of service.
8. Cutting or welding is prohibited in areas where explosive atmospheres of gases, vapors, or dusts could develop from residues or accumulations in confined spaces.
9. Cutting or welding is prohibited on metal walls, ceilings, or roofs built of combustible sandwich-type panel construction or combustible covering.
10. Confined spaces, such as tanks, are tested to ensure that the atmosphere is not more than 10 percent of the lower flammable limit before cutting or welding in or on the tank.
11. Small tanks, piping, or containers that cannot be entered are cleaned, purged, and tested before cutting or welding on them begins.

12. Fire watch has been established.

E. Flammable and Combustible Materials

The onsite superintendent will regularly evaluate the presence of combustible materials at Cirks Construction Inc.

Certain types of substances can ignite at relatively low temperatures or pose a risk of catastrophic explosion if ignited. Such substances obviously require special care and handling.

Class A combustibles

These include common combustible materials (wood, paper, cloth, rubber, and plastics) that can act as fuel and are found in non-specialized areas, such as offices.

To handle Class A combustibles safely the onsite superintendent will ensure the following happens:

1. Dispose of waste daily.
2. Keep trash in metal-lined receptacles with tight-fitting covers. Metal wastebaskets that are emptied every day do not need to be covered.
3. Keep work areas clean and free of fuel paths that could allow a fire to spread.
4. Keep combustibles away from accidental ignition sources, such as hot plates, soldering irons, or other heat- or spark-producing devices.
5. Store paper stock in metal cabinets.
7. Do not order excessive amounts of combustibles.
8. Frequently inspect areas where combustibles are kept.

Water, multi-purpose dry chemical (ABC), and halon 1211 are approved fire-extinguishing agents for Class A combustibles.

Class B combustibles

These include flammable and combustible liquids (oils, greases, tars, oil-based paints, and lacquers), flammable gases, and flammable aerosols.

To handle Class B combustibles safely:

1. Use only approved pumps, taking suction from the top, to dispense liquids from tanks, drums, barrels, or similar containers (or use approved self-closing valves or faucets).
2. Do not dispense Class B flammable liquids into containers unless the nozzle and container are electrically interconnected by contact or a bonding wire. Either the tank or container must be grounded.
3. Store, handle, and use Class B combustibles only in approved locations where vapors are prevented from reaching ignition sources, such as heating or electric equipment, open flames, or mechanical or electric sparks.

4. Do not use a flammable liquid as a cleaning agent inside a building. The only exception is in a closed machine approved for cleaning with flammable liquids.

5. Do not use, handle, or store Class B combustibles near exits, stairs, or other areas normally used as exits.

6. Do not weld, cut, grind, or use unsafe electrical appliances or equipment near Class B combustibles.

7. Do not generate heat, allow an open flame, or smoke near Class B combustibles.

8. Know the location of and how to use the nearest portable fire extinguisher rated for Class B fire.

Do not use water to extinguish Class B fires caused by flammable liquids. Water can cause burning liquid to spread, making the fire worse. To extinguish a fire caused by flammable liquids, exclude the air around the burning liquid. The following fire-extinguishing agents are approved for Class B combustibles: carbon dioxide, multi-purpose dry chemical (ABC), halon 1301, and halon 1211. (NOTE: Halon is an ozone-depleting substance and is no longer being manufactured. Existing systems using halon can be kept in place, but employers must post signs indicating where halon or other agents that pose a serious health hazard are used.)

F. Smoking

Smoking is prohibited in all Cirks Construction Inc. buildings. Certain outdoor areas may also be designated as no smoking areas. The areas where smoking is prohibited outdoors are identified by NO SMOKING signs.

VI. TRAINING

The corporate Safety Director will present basic fire prevention training to all employees upon employment and will maintain documentation of the training, which includes:

A. Review of 29 CFR 1926 and 1910.38, including how it can be accessed;

B. This Fire Prevention Plan, including how it can be accessed;

C. Good housekeeping practices;

D. Proper response and notification in the event of a fire;

E. Instruction in the use of portable fire extinguishers, as determined by company policy in the Emergency Action Plan; and

F. How to recognize potential fire hazards.

Cirks Construction Inc. corporate Safety Director and the onsite superintendents will train employees about fire hazards associated with the specific materials and processes to which they are exposed, and will maintain documentation of the training. Employees will receive this training:

A. At their initial assignment;

B. Annually; and
C. When changes in work processes necessitate additional training.

VII. PROGRAM REVIEW

The corporate Safety Director will review this Fire Prevention Plan at least annually for necessary changes.

VIII. ATTACHMENTS
Appendix A

Fire Risk Survey

Perform a walkthrough of the facility with the local fire department and other emergency responders to assess the layout of the structures, types and volume of hazardous chemical storage, and other hazards they may encounter when responding to an emergency. Provide a copy of this survey to local authorities for their records.

<table>
<thead>
<tr>
<th>Type of Fire Hazard</th>
<th>Location</th>
<th>Emergency Actions</th>
<th>Required PPE</th>
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Completed by: ____________________

Date: ____________________
Appendix B

Cirks Construction Inc.
General Fire Prevention Checklist

All Cirks Construction Inc. superintendents shall use this checklist to ensure that fire prevention measures conform with the general fire prevention requirements found in OSHA standards.

☐ Yes ☐ No Is the local fire department acquainted with your facility, its location, and its specific hazards?
☐ Yes ☐ No If you have a fire alarm system, is it tested at least annually?
☐ Yes ☐ No If you have interior stand pipes and valves, are they inspected regularly?
☐ Yes ☐ No If you have outside, private fire hydrants, are they on a routine preventive maintenance schedule and flushed at least once a year?
☐ Yes ☐ No Are fire doors and shutters in good operating condition?
☐ Yes ☐ No Are fire doors and shutters unobstructed and protected against obstructions, including their counterweights?
☐ Yes ☐ No Are automatic sprinkler system water-control valves, air pressure, and water pressure checked weekly or at other intervals?
☐ Yes ☐ No Has responsibility for the maintenance of automatic sprinkler systems been assigned to an employee or contractor?
☐ Yes ☐ No Are sprinkler heads protected by metal guards?
☐ Yes ☐ No Is proper clearance maintained below sprinkler heads?
☐ Yes ☐ No Are portable fire extinguishers provided in adequate number and type?*
☐ Yes ☐ No Are fire extinguishers mounted in readily accessible locations?*
☐ Yes ☐ No Are fire extinguishers recharged regularly with the recharge date noted on an inspection tag?*
☐ Yes ☐ No Are employees periodically instructed in the use of extinguishers and fire protection procedures?*

Completed by: ______________________

Date: ______________________
Appendix C

Cirks Construction Inc.
Exits Checklist

Use this checklist to evaluate the Cirks Construction Inc. compliance with OSHA's standard on emergency exit routes.

☐ Yes  ☐ No  Is each exit marked with an exit sign and illuminated by a reliable light source?
☐ Yes  ☐ No  Are the directions to exits, when not immediately apparent, marked with visible signs?
☐ Yes  ☐ No  Are doors, passageways, or stairways that are neither exits nor access to exits, and which could be mistaken for exits, marked “NOT AN EXIT” or with another appropriate marking?
☐ Yes  ☐ No  Are exit signs provided with the word “EXIT” in letters at least 5 inches high with lettering at least 1 inch wide?
☐ Yes  ☐ No  Are exit doors side-hinged?
☐ Yes  ☐ No  Are all exits kept free of obstructions?
☐ Yes  ☐ No  Are there at least two exit routes provided from elevated platforms, pits, or rooms where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances?
☐ Yes  ☐ No  Is the number of exits from each floor of a building and from the building itself appropriate for the building occupancy?  (NOTE: Do not count revolving, sliding, or overhead doors when evaluating whether there is a sufficient number of exits.)
☐ Yes  ☐ No  Are exit stairways that are required to be separated from other parts of a building enclosed by at least one-hour fire-resistant walls (or at least two-hour fire-resistant walls in buildings more than four stories high)?
☐ Yes  ☐ No  Are the slopes of ramps used as part of emergency building exits limited to dimensions of 1 foot vertical and 12 feet horizontal?
☐ Yes  ☐ No  Are glass doors or storm doors fully tempered, and do they meet the safety requirements for human impact?
☐ Yes  ☐ No  Can exit doors be opened from the direction of exit travel without a key or any special knowledge or effort?
☐ Yes  ☐ No  Are doors on cold storage rooms provided with an inside release mechanism that will release the latch and open the door even if it's padlocked or otherwise locked on the outside?
☐ Yes  ☐ No  Where exit doors open directly onto any street, alley, or other area where vehicles may be operated, are adequate barriers and warnings provided to prevent employees from stepping into the path of traffic?
☐ Yes  ☐ No  Are doors that swing in both directions and are located between rooms where there is frequent traffic equipped with glass viewing panels?

Completed by:  

Date:  

[Signature]  
[Date]
### Appendix D

**Cirks Construction Inc.**

**Flammable and Combustible Material Checklist**

Use this checklist to evaluate the Cirks Construction Inc. compliance with OSHA's standards on flammable and combustible materials:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are combustible scrap, debris, and waste materials, such as oily rags, stored in covered metal receptacles and removed from the worksite promptly?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are approved containers and tanks used to store and handle flammable and combustible liquids?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all connections tight on drums and combustible liquid piping, vapor, and liquid?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all flammable liquids kept in closed containers when not in use?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are metal drums of flammable liquids electrically grounded during dispensing?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Do storage rooms for flammable and combustible liquids have appropriate ventilation systems?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are NO SMOKING signs posted on liquefied petroleum gas tanks?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all solvent wastes and flammable liquids kept in fire-resistant, covered containers until they are removed from the worksite?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Is combustible dust vacuumed rather than blown or swept whenever possible?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are fuel gas cylinders and oxygen cylinders separated by distances or fire-resistant barriers while in storage?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are fire extinguishers appropriate for the materials in the areas they are mounted?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are appropriate fire extinguishers mounted within 75 feet of outside areas containing flammable liquids and within 10 feet of any inside storage area for such materials?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are extinguishers free from obstruction or blockage?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all extinguishers serviced, maintained, and tagged at least once a year?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all extinguishers fully charged and in their designated places?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Where sprinkler systems are permanently installed, are the nozzle heads directed or arranged so that water will not be sprayed into operating electrical switchboards and equipment?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are NO SMOKING signs posted in areas where flammable or combustible materials are used or stored?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are safety cans utilized for dispensing flammable or combustible liquids available at the point they would be used?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are all spills of flammable or combustible liquids cleaned up promptly?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are storage tanks adequately vented to prevent development of an excessive vacuum or pressure that could result from filling, emptying, or temperature changes?</td>
<td>☐</td>
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</tbody>
</table>

Completed by: __________________________

Date: __________________________
Compressed Gas Safety Program

Introduction
Some compressed gases are flammable, toxic, or both and all are under pressure. Cylinders must be used, handled, and stored with extreme care. An exploding cylinder can have the same destructive effect as a bomb. The hazards of compressed gases must be evaluated, safety procedures implemented, and proper hazard information must be communicated to all affected workers.

Training
- Required for employees who move, handle, or use compressed gas cylinders.

Activities
- Ensure storage areas are identified and inspected frequently.
- Cylinders must be secure and prevented from tipping.
- Cylinders must be labeled with the type of gas, hazard warnings, and indication if the cylinder is empty or full. All empty cylinders should be grouped together.
- Full oxygen cylinders must be located 20 feet from, or have a half hour rated fire wall separating them from, any flammable gases while in storage.

Forms
- Compressed Gas Handling and Storage of Acetylene in Tanks and Cylinders
- Compressed Gas Program Assessment
- Compressed Gas Storage Locations
- Training Attendance Roster

Table of Contents
1. Purpose
2. Scope
3. Responsibilities
4. Procedure
5. Safety Information
6. Training and Information
7. Definitions

Compressed Gas Safety Program

1. Purpose

Effective implementation for job safety and health of our employees requires a written safety program fully endorsed and advocated by the highest level of management within the company. This safety program is designed to establish clear company goals and
objectives for the use and handling of compressed gases, and will be communicated to all required personnel. The company will review and evaluate this safety program:

1.1 On an annual basis

1.2 When changes occur to the regulatory standard governing this safety program that prompt revision of this document

1.3 When facility operational changes occur that require a revision of this document

2. Scope

It encompasses the total workplace regardless of the number of workers employed or the number of work shifts. This program applies to any compressed gas cylinder larger than 1 liter in size.

3. Responsibilities

3.1 Management and Supervisor:

3.1.1 Assure safe handling procedures are in place and followed

3.1.2 Ensure containers are labeled, color coded, inspected and that all components are functioning normally. Leaking or defective containers must be immediately removed from service.

3.1.3 Ensure defective containers are returned to the supplier as soon as possible.

3.1.4 Provide the appropriate tools and equipment to handle, use, store, and transport cylinders safely.

3.2 Employees:

3.2.1 Inspect gas cylinders before use to assure that the proper gas is utilized and that the cylinders are not defective.

3.2.2 Notify management or supervisor immediately if a cylinder or a component is defective.

3.3 Safety Officer (as needed or required)

3.3.1 Assist in the implementation of this program

4. Procedure

4.1 Safe Handling Procedures for Compressed Gases.

4.1.1 Filling. Containers will not be filled except by the supplier of the cylinder or with the supplier’s consent. Where filling is authorized it will be accomplished in accordance with DOT, OSHA, and CGA Regulatory Standards.
4.1.2 Content identification

4.1.2.1 Warning labels. All employees, whose work operations are or may be in an area where compressed gas may be utilized, shall be instructed in the recognition, and use of warning labels. Warning labels are essentially warning devices and must be legible at all times. The following will be addressed as a minimum:

4.1.2.1.1 Removal. When a warning label is attached to a compressed gas cylinder, it is not to be removed without authorization of the person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

4.1.2.1.2 Legibility. In order to be effective, warning labels must be legible and understandable by all authorized employees, affected employees, and other employees whose work operations are or may be in the area. Non-legible or missing labels will be reported to the Safety Officer immediately.

4.1.2.1.3 Durability. Labels and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

4.1.2.1.4 Labels may evoke a false sense of security, and their meaning needs to be understood as part of the overall Compressed Gas Safety Program.

4.1.2.1.5 Labels must be securely attached to cylinders so that they cannot be inadvertently or accidentally detached during use.

4.1.2.2 Labeling. Each container will bear the proper label for the compressed gas contained.

4.1.2.3 Maintenance.

4.1.2.3.1 Authorization. Containers and their appurtenances used by the company will be maintained only by the container supplier or authorized representative. Any employee who is not sure of the type of maintenance allowed on containers should contact the Safety Officer for further information.

4.1.2.3.2 Changing prescribed markings. The prescribed markings, supplier/owner markings or symbols stamped into containers will not be removed or changed unless in accordance with pertinent regulatory standards.

4.1.2.3.3 Changing content markings. No employee will deface or remove any markings, labels, decals, tags, or stencil marks applied by our supplier and used for the identification of content. Like markings may be affixed if the original becomes illegible or detached.

4.1.2.3.4 Pressure relief devices. No employee will change, modify, tamper with, obstruct, or repair pressure relief devices in container valves or in containers.

4.1.2.4 Painting.
4.1.2.4.1 Containers will not be painted. If a container shows signs of corrosion it will be removed from service and returned to the supplier.

4.1.2.4.2 Cylinder color. All employees should be aware that containers may only be painted by the supplier for the purpose of recognition and segregation. Should the company change suppliers of compressed gas the color codes could also change, always double-check to ensure you have the correct cylinder for the intended use. Never rely solely on the cylinder color for identification.

4.1.2.5 Contamination or improper contents. Any container found suspected to be contaminated or having its contents suspect will be immediately removed from service and reported to the Safety Officer. The supplier will be immediately notified.

4.1.2.6 Leaking or defective containers.

4.1.2.6.1 Leaking Containers. Supervisors will ensure all employees understand the following. Any employee discovering a leaking container should attempt to take the following actions:

4.1.2.6.1.1 Notify workers in the immediate area of the leak.

4.1.2.6.1.2 If the container could contain hazardous material (or if you're not sure) evacuate personnel in the area to fresh air (preferably up-wind or side-wind relative to the source).

4.1.2.6.1.3 Report the following as soon as possible to the Safety Officer:

4.1.2.6.1.3.1 Contents.

4.1.2.6.1.3.2 Location.

4.1.2.6.1.3.3 Number of employees in immediate area.

4.1.2.6.1.3.4 Circumstances of the release.

4.1.2.6.1.3.5 Condition of container.

4.1.2.6.1.3.6 Other pertinent information as required.

4.1.2.6.2 Defective Containers. Supervisors will ensure all employees understand the following. Any employee discovering a defective or corroded container should attempt to take the following actions:

4.1.2.6.2.1 Notify the Supervisor of the department where the container was discovered.

4.1.2.6.2.2 If the container could contain hazardous material (if you're not sure), evacuate personnel in the area to fresh air (preferably up-wind or side-wind relative to the source).

4.1.2.6.2.3 Report the following as soon as possible to the Safety Officer:
4.1.2.6.2.3.1 Contents

4.1.2.6.2.3.2 Location

4.1.2.6.2.3.3 Number of employees in immediate area

4.1.2.6.2.3.4 Circumstances

4.1.2.6.2.3.5 Condition of container

4.1.2.6.2.3.6 Other pertinent information as required

4.1.2.7 Container usage requirements.

4.1.2.7.1 Content Identification. Where company employees are responsible to handle and connect the container for use, the operation will not proceed unless the contents can be verified by legible markings and labels.

4.1.2.7.2 Container caps, valve outlet caps, and plugs.

4.1.2.7.2.1 Container caps. Where removable caps are provided by the gas supplier for valve protection, company employees shall keep such caps on containers at all times except when containers are connected to dispensing equipment.

4.1.2.7.2.2 Valve outlet caps and plugs. Where valve outlet caps and plugs are provided by the supplier, employees will keep such devices on the containers and valve outlets at all times except when containers are connected to dispensing equipment.

4.1.2.7.3 Misuse. No container will be used for anything other than its intended purpose. Containers will not be used as rollers, supports or for any purpose other than to contain the content as received. No employee will allow an unsafe condition such as this to occur without notifying his or her Supervisor.

4.1.2.7.4 Containers not in use (configuration). When containers are not being used the valves will remain closed at all times except when operational constraints apply.

4.1.2.8 Movement of compressed gas containers.

4.1.2.8.1 Trucks. Containers will not be rolled, dragged, or slid. A suitable hand truck, fork truck, roll platform, or similar device will be used to move containers.

4.1.2.8.2 Rough handling. Containers will not be dropped or permitted to strike violently against each other or other surfaces.

4.1.2.8.3 Lifting requirements.

4.1.2.8.3.1 Container caps. Container caps will not be used for lifting containers except for the use of hand trucks which grip the container cap for lifting on to the hand truck. In any case the container will not be lifted higher than six inches above the operating surface.
4.1.2.8.3.2 Magnetic lifting devices. Magnetic lifting devices are prohibited from use with compressed gas containers.

4.1.2.8.3.3 Ropes, chains, or slings. Ropes, chains, or slings are prohibited from use with compressed gas containers unless lugs or lifting attachments are provided by the manufacturer.

4.1.2.8.3.4 Cradles or platforms. Where approved lifting attachments have been provided by the manufacturer, cradles or platforms are authorized for use.

4.1.2.9 Container storage requirements.

4.1.2.9.1 Posting requirements.

4.1.2.9.1.1 No Smoking. No Smoking signs will be posted in the storage area.

4.1.2.9.1.2 Type gas. Signs designating the type gas stored in the area will be posted.

4.1.2.9.2 Grouping requirements. Where different types of gases are stored in the same general area the following apply.

4.1.2.9.2.1 Like gases. Gases will be stored with like gases and segregated from dissimilar gases.

4.1.2.9.2.2 Full and empty containers. Full and empty containers will not be intermingled. Separate storage areas will be delineated for each.

4.1.2.9.3 Stock rotation. Stock will be rotated so that the oldest material will be the first to be used. The storage layout will be such that old stock can be removed first with a minimum handling of other containers.

4.1.2.9.4 Storage rooms. Storage rooms used by the company will be well ventilated and dry. Room temperature will not exceed 125 degrees F. Storage in subsurface location will be avoided.

4.1.2.9.5 Separation from combustibles. Containers will not be stored near readily ignitable substances such as gasoline or waste, or near combustibles in bulk, including oil.

4.1.2.9.6 External corrosion requirements. Containers will not be exposed to continuous dampness and should not be stored near salt or other corrosive chemicals or fumes. Corrosion may damage the containers and may cause the valve protection caps to stick.

4.1.2.9.7 Mechanical damage requirements. Containers shall be protected from any object that will produce a harmful cut or other abrasion in the surface of the metal. Containers will not be stored near elevators, gangways, and unprotected platform edges or in locations where heavy moving objects may strike or fall on them.

4.1.2.9.8 Storage and use requirements.
4.1.2.9.8.1 Store upright. All compressed gas containers in service or in storage will be stored standing upright where they are not likely to be knocked over.

4.1.2.9.8.2 Restrain. All compressed gas containers in use will be restrained above the midpoint to prevent accidental fall-over of the container.

4.1.2.9.8.2.1 Gas containers with a water volume up to 305 cu. in. (5.0 L) may be stored in a horizontal position.

4.1.2.9.8.3 Container valve end up. Liquefied gas containers except those designed for use in a horizontal position on tow motors, etc., will be stored and used valve end up. Acetylene containers will be stored and used valve end up. Storage of acetylene containers valve end up will minimize the possibility of solvent being discharged. Note: Valve end up includes conditions where the container axis is inclined as much as 45 degrees from the vertical.

4.1.2.9.9 Outdoor storage. Containers may be stored in the open, but will be stored on a clean dry surface to prevent corrosion to the bottom of the container.

4.1.2.9.9.1 Sunlight. Containers may be stored in direct sunlight, except in localities where extreme temperatures prevail (above 125 degrees F.). If our supplier recommends storage in the shade for a particular gas, this recommendation will be observed.

4.1.2.9.9.2 Public area. Containers used or stored in public areas will be protected to prevent tampering.

4.1.2.10 Connecting containers and withdrawing content.

4.1.2.10.1 Trained personnel. Compressed gases will be handled and used only by properly trained employees. Employees must have had initial training in order to handle and use compressed gases.

4.1.2.10.2 Content identification. Employees will verify that a label exists and review the label before beginning operations with a compressed gas. Unmarked containers will not be used. Such containers will be reported to the Safety Officer. The container color will never be relied on for identification of a container.

4.1.2.10.3 Container caps. Caps will be retained and not removed until the container is placed in service.

4.1.2.10.4 Secure containers. The company will ensure that compressed gases will be secured above the midpoint to prevent them from being knocked over.

4.1.2.10.5 Pressure regulator. A suitable pressure regulating device will be used where gas is admitted to a system of lower pressure rating than the supply pressure, and where, due to the gas capacity of the supply source, the system rating may be exceeded.
4.1.2.10.6 Pressure relief device. A suitable pressure relief device will be used to protect a system using a compressed gas where the system has a pressure rating less than the compressed gas supply source and where, due to the gas capacity of the supply source, the system pressure rating may be exceeded.

4.1.2.10.7 Connection requirements. Connections that do not fit will not be forced. Threads on regulator connections or other auxiliary equipment will match those on container valve outlets.

4.1.2.10.8 Manifold. Where compressed gas containers are connected to a manifold, the manifold, and its related equipment will be of proper design for the product(s) they are to contain at the appropriate temperatures, pressures, and flows.

4.1.2.10.9 Equipment compatibility. Regulators, gauges, hoses, and other appliances provided for use with a particular gas or group of gases, will not be used on containers containing gases having different chemical properties unless information obtained from the supplier indicates that this can be done safely.

4.1.2.10.10 Container valve requirements.

4.1.2.10.10.1 Container valves will be opened slowly and pointed away from personnel and sources of ignition.

4.1.2.10.10.2 For valves having no hand wheel the wrench provided by, or recommended by the supplier will be used.

4.1.2.10.10.3 On valve containing a hand wheel wrenches will not be used.

4.1.2.10.10.4 Valves will never be forced open or closed. If valves become frozen for whatever reason, the supplier will be contacted to provide instructions.

4.1.2.10.11 Dusting clothing, cleaning work areas. Compressed gas will not be used to dust off clothing or clean work areas of debris. This may cause serious injury to the eyes or body or create a fire hazard.

4.1.2.10.12 Residual empty container pressure. When withdrawing a non-liquefied compressed gas from a container, it should not be reduced to below 20 psig so as to preclude the back flow of atmospheric air or other contaminants into the container. The container valve should be closed tightly to retain this residual pressure.

4.1.2.10.13 Check valves. Compressed gases will not be used where the container may be contaminated by the feedback of process materials unless protected by suitable traps or check valves.

4.1.2.10.14 Gas tightness. Connections to piping, regulators and other appliances will be kept tight to prevent leakage. Where hose is used, it shall be kept in good condition.

4.1.2.10.15 Removing pressure regulator. Before a regulator is removed from a container, the container valve shall be closed and the regulator drained of gas pressure.

4.2 General Safety Rules for Specific Types of Gases.
4.2.2 Flammable gases.

4.2.2.1 Adjoining exposures. Provisions will be made to protect flammable gases from hazardous exposure to and against hazardous exposure from adjoining buildings, equipment, property, and concentrations of people.

4.2.2.2 Heating requirements. Where storage areas are heated, the source will be by steam, hot water, or other indirect means. Heating by flames or fire is prohibited.

4.2.2.3 Electrical equipment requirements. Will conform to the provisions of NFPA 70, National Electrical Code, article 501, for Class 1 Division 2 locations.

4.2.2.3.1 Sources of ignition will be forbidden.

4.2.2.3.2 Storage buildings will be well ventilated.

4.2.2.4 Combustibles and ignition sources. Flammable gas containers stored inside of buildings with other occupancies will be kept at least 20 feet from combustibles or ignition sources.

4.2.2.5 Capacity limitations. Flammable gas containers stored inside industrial buildings on company property. (Except those in use or those attached for use are limited to a total gas capacity of 2500 cubic feet of acetylene or non-liquefied flammable gas, or a total container content water capacity of 735 pounds for liquefied petroleum gas or stabilized methylacetylene-propadiene).

4.2.2.6 Fire protection requirements.

4.2.2.6.1 Fire extinguishers. Adequate portable fire extinguishers of carbon dioxide or dry chemical types will be made available for fire emergencies at company storage locations.

4.2.2.6.2 No smoking signs. Signs will be posted around the storage area of buildings or at the entrance to storage rooms.

4.2.2.6.3 Leak testing. A flame or other ignition source will not be used for detection of flammable gas leaks. Use either a flammable gas leak detector, soapy water, or other suitable solution.

4.2.3 Oxygen (Including oxidizing gases).

4.2.3.1 Cleanliness. Oxygen containers, valves, regulators, hose, and other oxygen apparatus will be kept free at all times from oil or grease and will not be handled with oily hands, oily gloves, or with greasy equipment.

4.2.3.2 Separation of oxygen from combustibles. Oxygen containers in storage will be separated from flammable has containers or combustible materials (especially oil and grease) a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire resistance rating of at least one-half hour.
4.2.3.3 Oxygen-rich atmospheres. The oxygen content in work areas (other than hyperbaric chambers) must not exceed 23 percent by volume.

4.2.3.4 Compatibility of materials. Any materials used by the company that come into contact with oxygen in valves, piping, fittings, regulators, and utilization equipment must be suitable for use with oxygen, and at the pressures and conditions involved at the specific use point of material. The handling and use of oxygen above 3000 psi may involve greater fire potential, adequate safety systems analysis needs to be made.

4.2.4 Acid and alkaline gases.

4.2.4.1 Personal protective equipment. Supervisors will ensure that precautions are taken to avoid contacting skin or eyes with acid or alkaline gases. Chemical goggles or face shields, rubber (or other suitable chemically protective material) gloves and aprons will be worn. Long sleeves and trousers will be worn. Open toed shoes or sneakers are prohibited.

4.2.4.2 Respiratory equipment. Employees handling and using acid and alkaline gases will have gas masks or self-contained breathing apparatus (SCBA) immediately available for use. SCBA must be used when the concentration of the gas could be higher than the mask canister rating, and or where the oxygen content of the atmosphere could be below 19 percent by volume.

4.2.4.3 Emergency showers and eyewash fountains. Supervisors will ensure that areas where acid or alkaline gases are used are equipped with an emergency shower and eyewash fountain.

4.2.4.4 Quantity on site. Because of their hazardous nature, Supervisors will limit the quantity of this type of gas to the minimum requirements for the foreseeable future.

4.2.4.5 Ventilation. Acid and alkaline gases will only be used in well ventilated areas.

4.2.5 Highly toxic gases.

4.2.5.1 Respiratory equipment. Employees handling and using highly toxic gases will have gas masks or self-contained breathing apparatus (SCBA) immediately available for use. SCBA must be used when the concentration of the gas could be higher than the mask canister rating, and or where the oxygen content of the atmosphere could be below 19 percent by volume.

4.2.5.2 Storage locations. Storage of highly toxic gases will be:

4.2.5.2.1 Outdoors, or in a separate noncombustible building without other occupancy, or in a separate room without other occupancy.

4.2.5.2.2 Of noncombustible construction with a fire-resistance rating of at least one hour.

4.2.5.2.3 Well ventilated to preclude development of hazardous concentrations.

4.2.5.2.4 Protected against tampering.
4.2.5.3 Ventilation. Highly toxic gases will be used only in forced ventilated areas or in hoods with forced ventilation, or outdoors. Hazard analysis will be conducted on equipment emitting high concentrations. The gas will be discharged into appropriate scrubbing equipment which will remove or neutralize the toxic effects before entering the effluent gas stream.

4.2.5.4 Toxicity. Supervisors will ensure the following. Before using a highly toxic gas, employees must read and understand all warning labels and material data sheet information. All employees working in the immediate area where these gases are handled will be instructed as to the toxicity of the gases and methods of protection against harmful exposure. Employees will not be exposed to concentrations greater than those determined to be safe levels by OSHA 29 CFR 1910.1000 and the threshold limit values guidance by the ACGIH.

4.2.5.5 Quantity on site. Because of their hazardous nature, Supervisors will limit the quantity of this type of gas to the minimum requirements for the foreseeable future.

4.2.6 Cryogenic liquefied gases.

4.2.6.1 Cryogenic liquids are gases which are handled in liquid form at relatively low pressure and extremely low temperatures, usually below -238 degrees F. Because of their low temperature, cryogenic liquids are handled in multi-wall, vacuum-insulated containers, tank trucks, tank cars, and storage tanks to minimize evaporation and venting of the gas. Some cryogenic liquids in small quantities are also handled in open, low pressure thermos type containers in laboratory work.

4.2.6.2 Personal protective equipment. Cryogenic liquids and cold gases can cause frostbite injury upon contact with the body. When handling cryogenic liquids Supervisors will ensure that employees use suitable eye protection, such as a face shield, safety glasses, or safety goggles, hand protection, such as insulated loose-fitting gloves, and proper clothing to prevent other bodily exposure.

4.2.6.3 Ventilation. Cryogenic liquid containers will only be stored and handled in well ventilated areas to prevent excessive concentrations of the gas. Containers are equipped with pressure relief devices which permit venting of gas intentionally.

4.2.6.4 Container handling. Cryogenic liquid containers will be handled and stored in an upright position. The containers must not be dropped, tipped over, or rolled on their sides. A four wheeled handling truck will be used to move cryogenic liquid containers over 20 gallons capacity.

4.2.6.5 Containers. Containers designed for specific gas storage will not be used for any other type of gas.

4.2.6.6 Pressure relief devices. Containers entering this facility will be provided with DOT approved devices to prevent excessive buildup of pressure from warming gas. Where cryogenic liquids or cold gas may be trapped between valves, piping will be equipped with appropriate pressure relief devices.
4.2.6.7 Transfer of cryogenic liquids. Only transfer lines designed for cryogenic liquids will be used. Transfer of cryogenic liquids will be performed slowly enough to minimize excess evaporation and stress due to rapid cooling and contraction of warm containers and equipment.

4.2.6.8 Liquid oxygen. Liquid oxygen containers, piping and equipment will be kept clean and free of grease, oil, and organic materials. Ignitions sources are not permitted in areas where liquid oxygen is stored or transferred.

4.2.6.9 Liquid hydrogen. Ignitions sources are not permitted in areas where liquid hydrogen is stored or transferred. Liquid hydrogen must be stored and transferred under positive pressure to prevent the infiltration and solidification of air or other gases.

4.2.6.10 Liquid helium and liquid neon. Liquid helium and liquid neon must be stored and transferred under positive pressure to prevent the infiltration and solidification of air or other gases.

4.2.6.11 Liquefied natural gas. Ignitions sources are not permitted in areas where liquefied natural gas is stored or transferred. Liquefied natural gas must be stored and transferred under positive pressure to prevent the infiltration of air or other gases.

4.2.6.12 Inert gases. In areas where inert gases are used or stored employees will have self-contained breathing apparatus (SCBA) immediately available for use. SCBA must be used in the even the oxygen in the room is displaced by the inert gas creating an oxygen deficient atmosphere where the oxygen content of the atmosphere could be below 19 percent by volume.

4.3 General Safety Rules for Use of Compressed Gas.

4.3.1 Pre-operation safety rules:

4.3.1.1 Read the Material Safety Data Sheet before use.

4.3.1.2 Inspect cylinder for damage before use.

4.3.1.3 Ensure "In use" label is present.

4.3.1.4 Ensure all labels/warnings are readable.

4.3.1.5 Place upright on stable dry surface.

4.3.1.6 Ensure cylinder is restrained above mid-point.

4.3.1.7 Keep heat, flame, and electrical sources from gas.

4.3.1.8 Operate in accordance with established procedures.

4.3.2 Post-operation safety rules:

4.3.2.1 Ensure "empty" or like label is present.
4.3.2.2 Remove from operation using established procedures.

4.3.2.3 Close valve completely and cap cylinder.

4.3.2.4 Transport cylinder using a hand-truck.

4.3.3 Full cylinder storage rules:

4.3.3.1 Read the Material Safety Data Sheet before use.

4.3.3.2 Do not smoke.

4.3.3.3 Mark cylinder with date of storage.

4.3.3.4 Ensure stock is properly rotated.

4.3.3.5 Use oldest stock first.

4.3.3.6 Inspect cylinder for damage before storage.

4.3.3.7 Store with like kind of gas.

4.3.3.8 Ensure all labels are readable.

4.3.3.9 Ensure valve assembly is tightly capped.

4.3.3.10 Ensure cylinder is restrained above midpoint.

4.3.3.11 Store upright on stable dry surface.

4.3.3.12 Keep electrical devices away from gas.

4.3.3.13 Keep combustible materials away from gas.

4.3.3.14 Keep heat and flame away from gas.

4.3.4 Empty cylinder storage rules.

4.3.4.1 Read the Material Safety Data Sheet before use.

4.3.4.2 Do not smoke.

4.3.4.3 Label cylinder "empty" before storage.

4.3.4.4 Ensure valve assembly closed tightly.

4.3.4.5 Ensure valve assembly capped tightly.

4.3.4.6 Inspect cylinder for damage before storage.

4.3.4.7 Store with like kind of gas cylinders.
4.3.4.8 Ensure all labels are readable.

4.3.4.9 Ensure cylinder is restrained above midpoint.

4.3.4.10 Store upright on stable dry surface.

4.3.4.11 Keep electrical devices away from gas.

4.3.4.12 Keep combustible materials away from gas.

4.3.4.13 Keep heat and flame away from gas.

5. Safety Information.

5.1 Visual Inspection of Compressed Gas Cylinders.

5.1.1 Employees will use the following for general inspection of compressed gas cylinders. Our supplier has the first responsibility for inspection of cylinders used by the company in accordance with CGA and NFPA guidelines. Only the following inspection criteria will be followed by employees:

<table>
<thead>
<tr>
<th>Inspect For</th>
<th>Possible Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dents</td>
<td>Weakening of cylinder wall</td>
</tr>
<tr>
<td>Cuts, gouges, or digs</td>
<td>Decrease in wall thickness</td>
</tr>
<tr>
<td>Corrosion</td>
<td>Decrease in wall thickness</td>
</tr>
<tr>
<td>Pitting</td>
<td>Decrease in wall thickness</td>
</tr>
<tr>
<td>Crevice corrosion</td>
<td>Weakening of cylinder wall</td>
</tr>
<tr>
<td>Bulges</td>
<td>Weakening of cylinder wall</td>
</tr>
<tr>
<td>Neck defects</td>
<td>Leak or cylinder explosion</td>
</tr>
<tr>
<td>ARC/Torch burns</td>
<td>Weakening of cylinder wall</td>
</tr>
<tr>
<td>Valve ease of movement</td>
<td>Corrosion leading to leak</td>
</tr>
<tr>
<td>Valve thread serviceability</td>
<td>Leak during operation</td>
</tr>
</tbody>
</table>

5.1.2 Suspect cylinders. Cylinders that are suspected to be deficient in any manner will be removed from service. The supplier will then be notified and a representative of the supplier will be asked to inspect the cylinder. Employees discovering a cylinder suspected to be deficient in any manner should notify the Safety Officer.

5.1.3 Cylinders will be stored upright and chained to an external wall when not in use.

5.2 Facility/Department Evaluation.

5.2.1 An evaluation of our facility(s) will be conducted to identify, designate, and prioritize Compressed Gas use and storage.

5.2.2 Existing Compressed Gas Systems. A process hazard analysis will be conducted for existing systems. Existing systems where possible, will be designated and managed as a complete and separate process.
5.2.3 Future Compressed Gas Systems. For new systems, a process hazard analysis will be conducted. The PHA will be used to improve the design and construction of the process from a reliability and quality point of view. The safe operation of the new process will be enhanced by making use of the PHA recommendations before final installations are completed.

5.3 Gas System listing.

5.3.1 Designated gas systems will be stored in locations so as not to cause undue hazards to employees.

5.3.2 All pipes and delivery components will be inspected annually at a minimum.

5.4 Compressed Gas Association Safety Manuals.

5.4.1 To obtain any of the CGA safety manuals you can contact the CGA for a current literature catalog at: www.cganet.com. These include: The Handbook of Compressed Gases; Equipment such as regulators, hose lines, valve connections and pressure relief devices; information on specific gas types and their handling; Insulated cargo tanks, and the protection and safe handling of specific cylinders

6. Training and Information.

6.1 Initial Training. Initial training will be provided before job assignment. The company shall provide training to ensure that the purpose and function of the Compressed Gas Safety Program is understood by employees and that the knowledge and skills required for the safe application and usage of compressed gases are acquired by employees. The training shall include the following:

6.1.1 Applicable hazards. Each authorized employee shall receive training in the recognition of applicable hazards associated with compressed gases, and the methods and means necessary for safe operation.

6.1.1.1 Purpose and use. Each affected employee shall be instructed in the purpose and use of the compressed gas they will come in contact.

6.1.1.2 Awareness level training. All other employees whose work operations are or may be in an area where compressed gas may be utilized, shall be instructed about the emergency procedure, and about the prohibition(s) relating to compressed gases used in their work area.

6.1.1.3 Warning labels. All employees, whose work operations are or may be in an area where compressed gas may be utilized, will be instructed in the recognition, and use of warning labels.

6.1.1.4 Storage requirements. Storing and handling requirements will be covered in accordance with this safety program.

6.1.1.5 Handling requirements. Handling requirements will be covered in accordance with this safety program.
6.1.1.6 Moving requirements. Moving requirements will be covered in accordance with this safety program.

6.1.1.7 Connecting and disconnecting requirements. Connecting and disconnecting requirements will be covered in accordance with this safety program.

6.1.1.8 Health hazards regarding specific gases. Health hazard regarding specific gases will be covered in accordance with this safety program.

6.1.1.9 General safety precautions. General safety precautions will be covered in accordance with this safety program.

6.1.1.10 Verification. The company shall verify that employee training has been accomplished and is being kept up to date. The documentation shall contain each employee's name and dates of training.

6.1.1.11 Authorized trainers. The compressed gas suppliers will be requested to provide training as needed or required for all compressed gas users and handlers.

6.2 Refresher Training. Refresher will be conducted on an as needed basis. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in the type of gas used, equipment or processes that present a new hazard, or when there is a change in operating procedures.

6.2.1 Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever there is reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the compressed gas safety procedures.

6.2.2 The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

6.3 Verification. The company shall verify that employee training has been accomplished and is being kept up to date. The documentation includes employee's name and dates of training.

7. Definitions.

CGA – Compressed Gas Association
Office Safety

Office incidents can and do happen. To prevent them, Cirks Construction Inc. has developed the following rules for our office staff. We will also endeavor to include office employees in periodic safety meetings. If at any time, you feel there is a safety hazard, or you have any safety concerns, please do not hesitate to notify your supervisor, or call the safety director.

1. Report all incidents and injuries, no matter how minor, to your supervisor immediately.
2. Correct or report any safety hazards that you observe.
3. Clean up any spilled material that may present a slipping hazard.
4. Do not stretch any cords across aisles that may present a tripping hazard.
5. No one is allowed to climb on shelves or stand on chairs; you must use a step stool or ladder.
6. Keep all legs of the chair on the floor. Do not tilt chairs too far back.
7. No one shall be in the possession of, or under the influence of, alcohol or controlled substances while on the premises.
8. No horseplay will be tolerated.
10. Do not open more than one file drawer at a time. This could cause the cabinet to tip.
11. Do not store heavy objects above your head that could fall on you in an earthquake.
12. Do not store flammable or combustible materials near heaters or other heat sources.
13. If you are unsure how to do any task safely, ask your supervisor.
14. Do not operate any equipment you are not trained and authorized to use.
15. Always follow safe lifting procedures when lifting any object and get help for heavy loads:
   - Bend your knees, not your back.
   - Keep the load close to body.
   - Keep your back straight.
   - Lift with your legs.
   - Do not lift and twist.
Heat Illness Prevention

Heat illness is a serious medical condition that results when a worker’s body becomes overheated from working in areas with high temperatures. This often occurs with individuals working in outdoor environments such as construction. Heat illness can occur at any time but is a greater concern when daytime temperatures exceed 80 degrees. Heat illness includes heat cramps, fainting, heat exhaustion, and heatstroke. Workers have died or suffered serious health problems from these conditions. Heat illness can be prevented and that is the policy of Cirks Construction Inc.

1. Provision of water. All employees shall have access to potable and cool drinking water at all times. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water shall be encouraged.

2. Employees shall be allowed and encouraged to take a cool-down rest in the shade for a period of no less than five minutes at a time when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times.

3. Access to shade. Shade areas shall be provided on all job sites. This may include buildings, trailers, or other structures. If no such structures are available, portable canopies or similar structures will be used to provide a shaded area for employees. Cooling measures other than shade (e.g., use of misting machines) may be provided in lieu of shade if the foreman can demonstrate that these measures are at least as effective as shade in allowing employees to cool. Employees may request to use these areas at any time if they need a respite from heat and sun.

4. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling. The amount of shade present shall be at least enough to accommodate 100% of the employees on the shift at any time, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other. The shaded area shall be located as close as practicable to the areas where employees are working.

5. High-heat procedures. Cirks Construction Inc. shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:
   - Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.
   - Observing employees for alertness and signs or symptoms of heat illness.
   - Reminding employees throughout the work shift to drink one quart per employee per hour, lasting the entire shift.
   - Close supervision of a new employee by a supervisor or designee for the first 14 days of the employee’s employment by the employer, unless the employee
indicates at the time of hire that he or she has been doing similar outdoor work for at least 10 of the past 30 days for 4 or more hours per day.

6. Training. Effective training in the following topics shall be provided to each supervisory and non-supervisory employee before the employee begins work that should reasonably be 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.
- Cirks Construction Inc. procedures for complying with the requirements of this standard.
- 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.
- New acclimation procedures include closely observing all employees during a heat wave—defined as at least 80 degrees, or anytime the temperature is 10 degrees higher than the average high daily temperature in the preceding five days—and closely observing new workers for their first two weeks on the job.
- 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, symptoms, or signs of heat illness in themselves, or in co-workers.
- The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
- The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
- The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site 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.

7. Supervisor training. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness effective training on the following topics shall be provided to the supervisor:

- The information required to be provided by section 6 above.
- The procedures the supervisor is to follow to implement the applicable provisions in this section.
- The procedures the supervisor is 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.
Bloodborne-Pathogens Exposure Control Plan

Introduction
The mission of the Occupational Health and Safety Administration (OSHA) is to save lives, prevent injuries, and protect the health of America’s workers. As part of the Department of Labor, OSHA promotes worker safety and health in every workplace in the United States.

OSHA’S bloodborne pathogens standard protects employees who work in occupations where they are at risk of exposure to blood or other potentially infectious materials. OSHA’s hazard communication standard protects employees who may be exposed to hazardous chemicals. Both standards require employers to develop written documents to explain how they will implement each standard, provide training to employees, and protect the health and safety of their workers.

Bloodborne Pathogens Standard
The following represents our companies’ Exposure Control Plan and includes all elements required by the OSHA bloodborne pathogens standard (29 CFR 1910.1030). The intent of this program is to provide us with an easy-to-use system for prevention, training, and documentation as a general contractor.

Policy
Cirks Construction Inc. is committed to providing a safe and healthful work environment for our entire staff. In pursuit of this goal, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1910.1030, “Occupational Exposure to Bloodborne Pathogens.”

The ECP is a key document to assist our organization in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

- Determination of employee exposure
- Implementation of various methods of exposure control, including: Universal precautions
- Engineering and work practice controls Personal protective equipment
- Housekeeping
- Hepatitis B vaccination
- Post-exposure evaluation and follow-up
- Communication of hazards to employees and training
- Recordkeeping
- Procedures for evaluating circumstances surrounding exposure incidents

Implementation methods for these elements of the standard are discussed in the subsequent pages of this ECP.

Program Administration
- All CCI superintendents are responsible for implementation of the ECP. The formal program will be maintained, reviewed, and updated by the corporate Safety Director at least annually, and whenever necessary to include new or
modified tasks and procedures.

- Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.

- General Superintendents, Dept. Heads, along with the regional safety professional for CCI will provide and maintain all necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags as required by the standard. They will, as a team, ensure that adequate supplies of the aforementioned equipment are available in the appropriate sizes.

- Job site superintendents will be responsible for ensuring that all medical actions required by the standard are performed and that appropriate employee health and OSHA records are maintained.

- The corporate Safety Director will be responsible for training, documentation of training, and making the written ECP available to employees, OSHA, and NIOSH representatives.

**Employee Exposure Determination**
The following is a list of all job classifications at our establishment in which all employees have occupational exposure:

**Job Title**
All field-based workers to include laborers, superintendents, project managers, project coordinators, safety, and service employees.

Methods of Implementation and Control
Cal & Federal OSHA, along with CCI mandate “Universal Precautions" for the prevention and handling of bloodborne exposures. All employees will utilize universal precautions.

**Exposure Control Plan**
Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees can review this plan at any time during their work shifts. If requested, we will provide an employee with a copy of the ECP free of charge and within 15 days of the request.

The Safety Director and General Superintendents are responsible for reviewing and updating the ECP annually or more frequently if necessary, to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

**Engineering Controls and Work Practices**
Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. The specific engineering controls and work practice controls used are listed below:

If needed and required by the risks and specific exposure of the job or the customer CCI is working for, sharps disposal containers will be inspected and maintained or replaced by the job site superintendent whenever necessary to prevent overfilling.
The Safety Director, along with the CCI team will evaluate new procedures and new products regularly by meeting with suppliers, vendors, attending classes, continuing educating, committee meetings at the AGC and other researched based methods.

**Personal Protective Equipment (PPE)**
PPE is provided to our employees at no cost to them. Training in the use of the appropriate PPE for specific tasks or procedures is provided by the safety professional in the region conducting the new employee safety orientation.

The types of PPE available to employees are as follows: Hard hat, respiratory protection, hearing protection, face shield, gloves, eye protection, class 2 vest, etc.

PPE is located in each corporate location and may be obtained via contact with the appropriate regional safety representative.

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removing gloves or other PPE.
- Remove PPE after it becomes contaminated and before leaving the work area.
- Used PPE may be disposed of in (List appropriate containers for storage, laundering, decontamination, or disposal.)
- Wear appropriate gloves when it is reasonably anticipated that there may be hand contact with blood or OPIM, and when handling or touching contaminated items or surfaces; replace gloves if torn, punctured or contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.

**Housekeeping**
Regulated waste is placed in containers which are closable, constructed to contain all contents and prevent leakage, appropriately labeled or color-coded (see the following section “Labels”), and closed prior to removal to prevent spillage or protrusion of contents during handling.

Contaminated tools, materials, knives, debris, etc. are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and appropriately labeled or color-coded. Sharps disposal containers are available at (must be easily accessible and as close as feasible to the immediate area where sharps are used).
Bins and pails (e.g., wash or emesis basins) are cleaned and decontaminated as soon as feasible after visible contamination.

Broken glassware that may be contaminated is only picked up using mechanical means, such as a brush and dustpan.

Laundry
All work clothes, vests, shirts, pants, gloves, etc. will immediately need to be professionally laundered.

The following laundering requirements must be met:

- Handle contaminated laundry as little as possible, with minimal agitation.
- Place wet contaminated laundry in leak-proof, labeled, or color-coded containers before transport. Use (specify either red bags or bags marked with the biohazard symbol) for this purpose.
- Wear the following PPE when handling and/or sorting contaminated laundry: (List appropriate PPE).

Labels
The following labeling methods are to be used at any CCI job site or a facility that our service dept. is working:

- Equipment to be Labeled
- Specimens Identified and labeled
- Contaminated laundry (red bag, biohazard label)
- Warning labels are affixed to all equipment, tools, materials, debris, etc.
- OR red bags are used as required if regulated waste or contaminated equipment is brought into a facility
- Employees are to notify their general superintendent if they discover ANY materials, debris, tools, machinery, equipment, etc. containing blood or OPIM, without proper labels

Post-Exposure Evaluation and Follow-Up
Should an exposure incident occur, contact your general superintendent and the corporate Safety Director immediately.

An immediately available confidential medical evaluation and follow-up will be conducted. Following initial first aid (clean the wound, flush eyes, or other mucous membrane, etc.), the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual’s test results were conveyed to the employee’s health care
provider.

- If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual’s test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- After obtaining consent, collect exposed employee’s blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

**Administration of Post-Exposure Evaluation and Follow-Up**

CCI will ensure that health care professional(s) responsible for employee’s hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of OSHA’s bloodborne pathogens standard.

Our company HR Director ensures that the health care professional evaluating an employee after an exposure incident receives the following:

- a description of the employee’s job duties relevant to the exposure incident
- route(s) of exposure
- circumstances of exposure
- if possible, results of the source individual’s blood test
- relevant employee medical records, including vaccination status

HR Director provides the employee with a copy of the evaluating health care professional’s written opinion within 15 days after completion of the evaluation.

**Procedures for Evaluating the Circumstances Surrounding an Exposure Incident**

CCI Construction safety professional will review the circumstances of all exposure incidents to determine:

- engineering controls in use at the time
- work practices followed
- a description of the device being used (including type and brand)
- protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.)
- location of the incident (O.R., E.R., patient room, etc.)
- procedure being performed when the incident occurred
- employee’s training
CCI Safety Professional will record all percutaneous injuries from contaminated tools, materials, equipment, knives etc. in a CT & E Injury Log.

**Employee Training**
All employees who have occupational exposure to bloodborne pathogens receive initial and annual training. All employees who have occupational exposure to bloodborne pathogens receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers, at a minimum, the following elements:

- a copy and explanation of the OSHA bloodborne pathogen standard
- an explanation of our ECP and how to obtain a copy
- an explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident
- an explanation of the use and limitations of engineering controls, work practices, and PPE
- an explanation of the types, uses, location, removal, handling, decontamination, and disposal of PPE
- an explanation of the basis for PPE selection
- information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine will be offered free of charge
- information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM
- an explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident
- an explanation of the signs and labels and/or color coding required by the standard and used at this facility
- an opportunity for interactive questions and answers with the person conducting the training session.

Training materials for this facility are available in electronic version via CCI Safety Portal.

**Record Keeping**
Training Records Training records are completed for each employee upon completion of training. These documents will be kept for at least three years via online training regulatory center (Company Safety Portal)

The training records include:

- the dates of the training sessions
- the contents or a summary of the training sessions
Employee training records are provided upon request to the employee or the employee’s authorized representative within 15 working days.

**Medical Records**
Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1020, “Access to Employee Exposure and Medical Records.”

CCI Human Resources is responsible for maintenance of the required medical records. These confidential records are kept in a secure electronic location for at least the duration of employment plus 30 years.

**OSHA Recordkeeping**
An exposure incident is evaluated to determine if the case meets OSHA’s Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by company safety director.

**Injury Log**
In addition to the 1904 Recordkeeping Requirements, all percutaneous injuries from contaminated sharps are also recorded in an Injury Log. All incidences must include at least:

- date of the injury
- type of item or device involved
- department or work area where the incident occurred
- explanation of how the incident occurred

This log is reviewed as part of the annual program evaluation and maintained for at least five years following the end of the calendar year covered. If a copy is requested by anyone, it must have any personal identifiers removed from the report.

1. How BBP was cleaned up and the names of those involved?
2. What was the BBP was cleaned up with - what product?
3. BBP scrubbing techniques used?
4. Parties involved with all cleanup?
5. What items, tools, materials, PPE, equipment, came in contact with blood?
6. What cross contamination techniques were employed?
7. Where were all BBP items placed (photos)?
8. Where is the final disposal destination?
Code of Safe Practices – Job Site Rules

1. All employees and all visitors must wear hard hats and safety vests at all times while on jobsite.  *(Exceptions can be made by superintendents ONLY)*
2. All visitors must check in with jobsite supervisor immediately.
3. Access to the site is restricted to employees and those authorized by Cirks Construction Inc.
4. Use or possession of intoxicants, alcohol, or drugs is strictly prohibited.
5. Maintain good housekeeping; help keep the jobsite clean orderly.
6. Long pants and shirts with a minimum of 4” sleeves are to be worn at all times.
7. Work boots; no tennis shoes are to be worn.
8. Eye, ear, and respiratory protection devices must be worn at all times when required.
9. PFAS and correct fall protection measures shall be used when exposed to a 6ft. fall or greater.
10. Radios or earphones are only permitted on site if they don’t interfere with communication.
11. Only authorized personnel are permitted to operate equipment.
12. No riders are allowed on machinery or equipment; riders in trucks are to remain seated while vehicle is moving.
13. All machinery must have operable backup alarms at all times.
14. No one shall enter a trench or excavation site unless it is properly shored or sloped.
15. For excavations 5ft. in depth or greater an Excavation Permit must be completed and approved by the superintendent or the safety director.
16. All power tools and extension cords with defects will be removed from site. All safety guards must be in place.
17. All ladders must be properly secured. Maintain 3 points of contact at all times.
18. Safety rails must be maintained at all times in all openings, stairways, and at the building perimeter.
19. Horseplay is strictly prohibited.
20. All incidents and unsafe conditions or practices must be reported immediately to Cirks Construction Inc. project superintendent.
21. All work on any type of scaffold must have a JHA prior to work commencing.
22. Follow instructions. Do not take chances. If you do not know, ASK.
Code of Safe Practices – General Safety Rules

1. All persons shall follow this Code of Safe Practices and render every possible aid to safe operations.

2. Failure to abide by the Code of Safe Practices may result in disciplinary action up to and including termination.

3. Immediately report any unsafe conditions, incidents, injuries, or illness to your supervisor or manager.

4. If you are unsure of the safe method to do your job, STOP and ask your supervisor. Ignorance is no excuse for a safety violation.

5. No one shall be knowingly permitted to work while the employee's ability or alertness is impaired by fatigue, illness, and prescription or over the counter drugs. Employees who are suspected of being under the influence of illegal or intoxicating substances, impaired by fatigue or an illness, shall be prohibited from working.

6. Never work while under the influence of an illegal or intoxicating substance, fatigued, or ill.

7. Anyone known to be under the influence of any drugs or intoxicating substances which impair the employee's ability to safely perform the assigned duties shall not be allowed on the job.

8. Horseplay, scuffling, fighting, and other acts that tend to have an adverse influence on the safety or well-being of the employees are prohibited.

9. Work shall be well planned and supervised to prevent injuries in the handling of materials and in working together with equipment.

10. Keep your work area clean, free of debris, electrical cords, and other hazards.

11. Immediately clean up spilled liquids.

12. Always notify all other individuals in your area who might be endangered by the work you are doing.

13. Do not operate equipment that you are not familiar with. Do not attempt to use such equipment until you are fully trained and authorized.

14. You are responsible for ensuring all safety guards are operable and in place. If they are not, STOP working and tell your supervisor.

15. Never bring firearms, weapons, illegal drugs, or alcoholic beverages on company or customer property or the job site.

16. A red tag system identifies equipment that is NOT to be operated, energized, or used. All lock-out or tag-out notices and procedures must be observed and obeyed.
17. Do not block exits, fire doors, aisles, fire extinguishers, first aid kits, emergency equipment, electrical panels, or traffic lanes.

18. Do not leave tools, materials, or other objects on the floor that might cause others to trip and fall.

19. Do not run on the work site, in the shop, or the office area.

20. Do not distract others while working. If conversation is necessary, make sure eye contact is made prior to communicating.

21. Employees shall not enter manholes, underground vaults, chambers, tanks, silos, or other similar places that receive little ventilation, unless it has been determined that it is safe to enter.

22. Employees shall ensure that all guards and other protective devices are in proper places and adjusted, and shall report deficiencies promptly to the supervisor or manager.

23. Materials, tools, or other objects shall not be thrown from buildings or structures until proper precautions are taken to protect others from the falling objects.

24. Employees shall cleanse thoroughly after handling hazardous substances and follow special instructions from authorized sources.

25. Gasoline or other flammable liquids shall not be used for cleaning purposes.

26. No burning, welding, or other source of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists and authority for the work is obtained from the supervisor or manager.
**Code of Safe Practices – Electrical Safety**

1. Only trained, qualified, and authorized employees are allowed to make electrical repairs or work on electrical equipment or installations.

2. All electrical equipment and systems shall be treated as energized until tested or otherwise proven to be de-energized.

3. All energized equipment and installations will be de-energized prior to the commencement of any work. If the equipment or installation must be energized for test or other purposes, special precautions will be taken to protect against the hazards of electric shock.

4. All equipment shall be locked out to protect against incidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy-isolating device bearing a lock.

5. Safety grounds shall always be used where there is a danger of shock from back feeding or other hazards.

6. Polyester clothing or other flammable types of clothing shall not be worn near electrical circuits. Cotton clothing is much less likely to ignite from arc blast. Employees working on live circuits shall be provided Nomex or equivalent fire-resistant clothing.

7. Suitable eye protection must be worn at all times while working on electrical equipment.

8. Always exercise caution when energizing electrical equipment or installations. Take steps to protect yourself and other employees from arc blast and exploding equipment in the event of a fault.

9. All power tools will be grounded or double insulated. Tools with defective cords or wiring shall not be used.

10. Metal jewelry should not be worn around energized circuits.

11. Extension and temporary power cords must be heavy duty and grounded. Frayed or defective cords shall not be used.

12. Electrical installations must be protected from incidental contact by enclosures or tight-fitting covers.

13. Circuits shall not be overloaded with equipment or extension cords.

**Lock-out / Tag-out**

1. All machinery and electrical equipment shall be locked out and tagged prior to repair, cleaning, or adjustment unless power is necessary to perform the work. If so, other precautions, specified by your supervisor, will be taken.

2. Use your own lock and key. No one else should have a key for your lock. Destroy all duplicate keys.
3. Maintain control of your key at all times to prevent unauthorized use.

4. Never remove another employee’s lock or energize tagged equipment.

5. If multiple employees are working on the same equipment, each employee should install their own lock.

6. Notify all affected employees that a lock-out/tag-out is required and the reasons for it.

7. If the equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

8. Operate the switch, valve, or other energy isolating devices so that the energy source(s) (electrical, mechanical, hydraulic, etc.) is disconnected or isolated from the equipment.

9. Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, or water pressure, etc. must also be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

10. Lock-out all energy isolation devices with an individual lock.

11. After ensuring that no employees are exposed and as a check of having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. **Caution: Return operating controls to neutral position after the test.**

12. The equipment is now locked-out. Install red lock-out tag on operating controls.

13. After repair is complete and the equipment is ready for testing or normal operation, check the equipment to see that all cover plates and safety devices have been reinstalled.

14. When the equipment is clear, remove all locks and tags. The energy isolating devices may be operated to restore energy to the equipment.
Code of Safe Practices – Company Vehicles

1. Only authorized employees are permitted to operate company vehicles. Do not let anyone else drive your company vehicle unless authorized.

2. Drive defensively and obey all traffic and highway laws.

3. Always wear your seat belt, whether you are a driver or a passenger.

4. Report all incidents as soon as possible to your supervisor and obtain a police report.

5. Keys must be removed from all unattended vehicles and the vehicles must be locked, unless parking inside the facility.

6. Do not jump from the cab or bed of company vehicles. Always use the stairs or a ladder.

7. Inspect your vehicle and report any defects or operating problems to your supervisor so that repairs can be made.

8. No smoking while refueling.

9. Smoking is prohibited in company vehicles.

10. If your driver's license is revoked or expired, immediately notify your supervisor, and do not drive.

11. Employees shall not engage in any activities that distract them from driving while operating vehicles. This includes eating, reading maps, texting, looking for reports or files, and talking on a cell phone without a hands-free device.
**Code of Safe Practices – Ladder Safety**

1. Inspect the ladder before using it. If it is broken, throw it out. Never repair a broken ladder, get a new one. Keep portable stairways, ladders and step stools in good condition and use them only in a safe manner.

2. Use the proper ladder for the job. Do not use “A” frame ladders as straight ladders. Make sure the ladder is tall enough to reach the work area. Do not use metal ladders for electrical work.

3. Do not place ladders in passageways, doorways, or any location where they might be hit or jarred, unless protected by barricades or guards.

4. Ladders should only be placed on hard level surfaces. Make sure the ladder feet are not placed on sandy, slippery, or sloping surfaces. Clean or sweep the area where the ladder feet will be and make sure the rubber feet are in good shape.

5. Ladder rungs and steps must be kept free of grease, oil, mud, or other slippery substances.

6. Arrange your work so you are able to face the ladder and use both hands while climbing. Do not carry tools or equipment while climbing a ladder. Climb the ladder, and then hoist the tools or equipment with a line or a hoisting device.

7. Avoid temporary ladders. Always use a commercially made, construction grade ladder of the proper length for the work being performed.

8. Secure portable ladders in place and at a pitch so the leveling indicator is in alignment or the distance from the wall to the base of the ladder is at least 1’ for every 4’ of height.

9. Straight ladders shall be tied off the top of the ladder to prevent slipping.

10. Be aware of objects below you, move or cover sharp objects in case you fall.

11. Do not stand on or work from the 2nd rung from the top or above. Also, do not reach too far from the ladder. Keep your belt buckle between the side rails.

12. Extension ladders shall extend at least 36” above the level being accessed.

13. On all ladders, do not step on cross bracing that is not intended to be used for climbing.

14. All manufacturers’ safety labels must be legible.
**Code of Safe Practices – Personal Protective Equipment (PPE)**

1. Use the correct PPE for each job assignment. If you don't know, ask.

2. PPE shall be maintained in good condition and cleaned regularly.

3. PPE shall be stored properly when not in use to protect it from damage.

4. Damaged or broken PPE must be returned to your supervisor for replacement.

5. Hard hats must be worn on job sites at all times.

6. ANSI approved safety glasses must be worn when working with power tools, compressed air or gasses, chemicals, or any other item that creates an eye injury hazard.

7. Face shields with safety glasses are recommended when grinding or working with hazardous chemicals.

8. Employees must wear industrial work shoes in the warehouse and on the job site. The shoes must have complete leather uppers and skid resistant soles and be in good condition. Steel toe or composite toe protection is recommended.

9. Athletic style shoes, tennis shoes, open toe shoes, plastic or vinyl shoes, or shoes with decorative accessories are not allowed.

10. Hearing protectors must be worn when working with loud equipment such as cut off saws, chain saws, air hammers, or grinders.

11. Be sure the protective clothing you wear will not hamper or restrict freedom of movement due to improper fit.

12. Long pants of heavy-duty material must be worn. No shorts or sweat pants are allowed.

13. Do not wear loose, torn, or frayed clothing, dangling ties, finger rings, dangling earrings, jewelry items, or long hair unless contained in a hair net, while operating any machine that could cause entanglement.

14. If required, wear approved respiratory protection when applying adhesives, paint, welding, grinding, or working with chemicals. Read the SDS to find out which types of respirators are required. Facial hair may not be permitted in certain circumstances.
**Code of Safe Practices – Hand and Power Tools**

1. Proper eye protection must be worn when using hand and power tools.

2. Know your hand and power tool applications and limitations. Always use the proper tool for the job.

3. Inspect cords and tools prior to use. Do not use tools that are faulty in any way. Exchange them for safe tools immediately.

4. Power tools must be grounded or double insulated. All power tools are to be plugged into a grounded GFCI outlet.

5. Do not use power tools in damp, wet, or explosive atmospheres.

6. Do not lift, lower, or carry portable electrical tools by the power cord.

7. Keep all safety guards in place and in proper working order.

8. Use clamps or vises to secure work pieces.

9. Do not force hand power tools. Apply only enough pressure to keep the unit operating smoothly.

10. Return all tools and other equipment to their proper place after use.

11. Unplug all power tools before changing bits or grinding disks.


13. Do not use a screwdriver as a chisel.

14. Before using sledges, axes, or hammers, be sure the handles are securely fastened with a wedge made of sound material.

15. Do not use a handle extension on any wrench.

16. Files should be equipped with handles and should not be used as a punch or pry.
**Code of Safe Practices – Hazardous Materials and Chemicals**

1. Read all warning labels and Safety Data Sheets (SDS) before using any chemicals. SDS includes personal protective equipment and safety information. SDS are available from your supervisor.

2. Hazardous materials shall be handled in accordance with the SDS and label. If protective equipment is required, use it.

3. Eye protection must be worn when working with hazardous materials or chemicals.

4. Mixing of chemicals is prohibited at all times unless required by the label. Before you mix - review all SDS.

5. Always wash your hands thoroughly after handling chemicals and before eating or smoking, even if you were wearing protective gloves.

6. Never use solvents for hand cleaning. Use the non-toxic hand cleaners provided.

7. Store all hazardous materials properly in suitable containers that are properly labeled.

8. Use chemicals only in well-ventilated areas.

9. When using secondary containers, ensure that they are labeled as to their contents and hazards.

10. Do not disturb any asbestos. STOP work and tell your supervisor. If you are not sure, STOP and ask.

11. Do not cut or weld stainless steel or galvanized metal without respiratory protection. These items create toxic fumes.

12. Work with lead, asbestos, cadmium, and other toxic compounds require special precautions. Do not attempt to perform this work without special equipment and training.
Code of Safe Practices – Fire Prevention and Housekeeping

1. Always take precautions to prevent fires which may be started, particularly from oily waste, rags, gasoline, flammable liquids, acetylene torches, improperly installed electrical equipment, and trash.

2. Firefighting equipment is to be inspected on a regular basis. All discharged, damaged, or missing equipment is to be immediately reported to a supervisor. Tampering with fire equipment is prohibited.

3. Access to fire extinguishers must be kept clear at all times. Make note of the location of firefighting equipment in your work area.

4. Never use gasoline or flammable solvents for cleaning purposes.

5. Smoking is prohibited within 50 feet of where flammable substances are present.

6. In case of fire, employees shall consider the safety of themselves and other individuals before saving property.

7. Keep your work areas free of debris. Remove useless material from the work area as fast as required to help reduce tripping hazards.

8. Maintain awareness of potential hazards when walking about the work site.

9. Keep tools, materials, and equipment out of walkways and stairways at all times.

10. Sharp wires or protruding nails must be kept bent.
**Code of Safe Practices – Traffic Safety**

1. All employees exposed to traffic hazards are required to wear orange flagging garments (shirts, vests, or jackets) at all times.

2. When possible, company vehicles are to be placed between the employees and traffic to prevent vehicles from entering the work area and hitting members of the crew.

3. All traffic controls will be established in accordance with the State of California Manual of Traffic Controls for Construction and Maintenance Work Zones.

4. Traffic controls are to be properly maintained throughout the workday. Signs and cones must be kept upright, visible, and in their proper position at all times.
**Code of Safe Practices – Welding and Cutting**

1. Make sure your welding equipment is installed properly, grounded, and in good working condition.

2. Always wear protective clothing suitable for the welding or cutting to be done.

3. Always wear #5 eye protection while welding, brazing, soldering, or flame cutting. Once you remove your welding helmet, put on safety glasses.

4. Keep your work area clean and free of hazards. Make sure that no flammable, volatile, or explosive materials are in or near the work area.

5. Handle all compressed gas cylinders with extreme care. Keep caps on when not in use. Make sure that all compressed gas cylinders are secured to the equipment carriage, wall, or other structural supports. When compressed gas cylinders are empty close the valve, install the cap, and return to correct bottle storage area.

6. Store compressed gas cylinders in a safe place with good ventilation. Acetylene cylinders and oxygen cylinders should be kept at least 20 feet apart.

7. Do not weld or cut in confined spaces without special precautions and your supervisor’s authorization.

8. Do not weld on containers that have held combustibles or flammable materials.

9. Use mechanical exhaust ventilation at the point of welding when welding lead, cadmium, chromium, manganese, brass, bronze, zinc, or galvanized metals. These metals are highly toxic and their fumes should not be breathed.

10. Make sure all electrical connections are tight and insulated. Do not use cables with frayed, cracked, or bare spots in the insulation.

11. When the electrode holder or cutting torch is not in use, hang it on the brackets provided. Never let it touch a compressed gas cylinder.

12. Dispose of electrode and wire stubs in proper containers since stubs and rods on the floor are a safety hazard.

13. Use weld curtains to shield others from the light rays produced by your welding.

14. Make sure all compressed gas connections are tight and check for leaks. Do not use hoses with frayed or cracked spots.

15. Keep your leads orderly and out of walkways. Suspend them whenever possible.

16. DO NOT WELD if leads or machine are in or near water.

17. Make sure a portable fire extinguisher is nearby.

18. Keep your work area clean and free of hazards. When flame cutting, sparks can travel
30-40 feet. Do not allow flame cut sparks to hit hoses, regulators, or cylinders.

19. Use oxygen and acetylene or other fuel gases with the appropriate torches and tips only for the purpose intended.

20. Never use acetylene at a pressure in excess of 15 pounds per square inch. Higher pressure can cause an explosion.

21. Never use oil, grease, or any other material on any apparatus or thread fitting in the oxyacetylene or oxy-fuel gas system. Oil and grease in contact with oxygen will cause spontaneous combustion.

22. Always use the correct sequence and technique for assembling and lighting the torch. Always use the correct sequence and technique for shutting off a torch.

23. Check valves must be used on all compressed gas cylinders to prevent back flow of the gas.
Stop Work Authority

Cirks Construction Inc. has adopted this policy to inform employees of Stop Work Authority. This ensures the safety and health of the employees.

Training
Employees will receive Stop Work Authority training before initial assignment. The training will be documented, including the employee names, the dates of training, and subject.

HSE Risk
All contractors and employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSE risk exist.

It is the policy of Cirks Construction Inc. that no work will resume until all stop work issues and concerns have been adequately addressed.

Stop Work Intervention
Cirks Construction Inc. ensures that employees will not be reprimanded for issuing a stop work intervention. Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated by Cirks Construction Inc.

Roles and Responsibilities
All employees of Cirks Construction Inc. are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where Stop Work Authority is exercised freely.

Stop Work Authority Steps
The steps to a Stop Work Authority for Cirks Construction Inc. include:

1. Stop,
2. Notify,
3. Correct, and
4. Resume.

When an unsafe condition is identified the Stop Work Intervention will be initiated, coordinated through the supervisor, initiated in a positive manner, notify all affected personnel and supervision of the stop work issue, correct the issue, and resume work when safe to do so.

Stop Work Reports
Cirks Construction Inc. ensures that Stop Work Reports will be reviewed by supervision in order to:

- Measure participation,
- Determine quality of interventions and follow-ups,
- Trend common issues,
- Identify opportunities for improvement, and
- Facilitate sharing of learning.
Follow-Up Importance
It is of high importance of Cirks Construction Inc. to conduct a follow-up after a Stop Work Intervention has been initiated and closed.

It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work.
Hazard Communication Employee Training

It is important that all of our employees understand the information given about hazardous materials. If you have any questions regarding this, please ask your supervisor or contact the safety director.

This material has been prepared to assist our employees in better understanding the hazardous materials with which they commonly work.

Chemicals can enter the body in a number of ways, including inhalation, skin contact, or ingestion. The hazard of any substance is dependent on other variables such as age, sex, and health of the employee as well as the concentration and duration of exposure. In other words, the same amount of a chemical may produce very different effects on two different people.

Chemicals are controlled in the workplace in such a manner so as to keep exposures below a level that may produce a reaction in very sensitive people. These levels are set by the government in the interest of minimizing harmful health effects of chemicals in the workplace. The Occupational Safety and Health Administration (OSHA) has established specific legally enforced Permissible Exposure Limits (PEL) for hazardous substances in the workplace. The PEL indicates the concentration of airborne contaminants to which nearly all workers may be exposed to for eight hours a day, forty hours a week, over a working lifetime of 30 years, without adverse health effects.

This handbook briefly outlines the hazardous materials you may encounter in your work area. To simplify this task, we have broken down the chemicals used into special categories including:

- Solvents
- Adhesives
- Paints and Dyes
- Lubricants
- Compressed Gases

In each category, the general characteristics of the material are presented along with the potential health effects of both short-term and long-term overexposure. The use of personal protective equipment and material handling procedures under normal conditions are also included.

Additional information on the materials you may be exposed to can be found in the product’s Safety Data Sheets (SDS). A complete folder of SDS is available to you at all times in the office. Your supervisor also has copies of data sheets on commonly used items.

At any time, an employee has the right to:

- Access the SDS folder and the Hazard Communication Program.
- Receive a copy of any chemical sampling data collected in the workplace.
- See their employment medical records upon request.

Personal protective equipment acts as a barrier to the routes of entry that a chemical may take into your body. As a barrier to chemicals that can be inhaled, there are a variety of respirators...
that may be used. The respirators either filter out particles, react with chemicals to neutralize them, or provide fresh filtered air. There are two important things to remember about using respirators. The first is that a respirator only works when you wear it and use it properly. Second, and equally important, is that you must use the proper respirator for the specific hazard. Respirators designed for one type of chemical will not work for another. One last note about respirators is that no one is allowed to use any respirator without proper training. It is against the law to use a respirator without formal training in its proper use.

As a barrier to skin, we have gloves, facemasks, protective clothing, and head protection. A combination of these items may be necessary to provide the proper level of protection in your area.

As a barrier to the eyes, a variety of eye protection may be used. Goggles are recommended when pouring or handling chemicals which may splash the eyes. They are also recommended while spraying adhesives and paints. Protect your eyes; your vision is priceless and irreplaceable.

There is no real protection against swallowing materials except good work practices. Always label any container to prevent incidental drinking. Always thoroughly wash your hands with soap and water before eating, drinking, or smoking. Keep any food and cigarettes away from the work area. Breads, fruits, and cigarettes can actually absorb chemicals from the air, to be inhaled or ingested later.

Prolonged exposure to excessive noise can cause permanent hearing damage. For those employees working in areas where excessive noise is generated, it is recommended that earplugs or ear muffs be used on a regular basis.

General first aid practices should be followed in the event of exposure to hazardous materials.

**EYES:** Flush eyes for at least 15 minutes with water.

**SKIN:** Wash the affected area with soap and water. If clothing is involved, remove and launder before putting back on. If caustic materials are spilled, remove clothing immediately and wash off of the body.

**INGESTION:** Do Not Induce Vomiting Unless the Label Indicates - transport the affected person to the medical clinic immediately for treatment or call 911. They will take the appropriate action.

**INHALATION:** Generally, removing the person to fresh air is adequate after short-term exposure to most vapors. If breathing difficulty develops, dial 911 and be prepared to administer CPR.

The provisions set forth by the Federal Hazard Communication Program dictate that all containers of hazardous materials must be properly labeled. All containers of hazardous materials used must have, at a minimum, the original label provided by the manufacturer or a locally prepared label describing its contents and hazards involved.

1. **Solvents:**
   a. Halogenated Solvents
Characteristics: These products are usually clear, rapidly evaporating solvents containing chlorinates. They generally exhibit low flammability and have the consistency of water. They have a mild odor and are used in painting, stripping, and other operations. Examples of chlorinated solvents are 1,1,1-Trichloroethane, perchloroethylene, methylene chloride, and Freon products.

Health Hazards: Most solvents are irritating to the eyes and upper respiratory tract. Excessive, repeated exposure to the skin may produce dermatitis and drying of the skin due to the de-fating properties of the solvents. Most are toxic and may be harmful or fatal if swallowed. Inhalation of excessive vapors may produce narcotic effects by depressing the central nervous system. Typical symptoms of overexposure include dizziness, nausea, and light-headedness in some individuals. Excessive repeated exposure to some solvents may produce chronic health effects on organs such as lungs, liver, kidney, and nervous system. Some solvents have been shown to produce cancer in laboratory animals. Compressed Freon products may produce "freeze burns" on the skin and eyes when released. Very high concentrations of vapors may be dangerous to life and health.

Personal Protective Equipment/Handling: Solvents should be handled with respect. Avoid any unnecessary exposure. Never wash hands in solvents. Wash with soap and water after using solvents. Avoid excessive skin contact. Use chemically resistant gloves if necessary. Avoid inhalation of vapors when possible. Use air-supplying respirators in areas of high concentration. Avoid contact with eyes. Use chemical goggles for protection. Provide ventilation when possible. Avoid contact with strong oxidizers (acids) and reactive metals (magnesium, aluminum powders).

Emergency/Special: In the event of eye contact, flush eyes for 15 minutes with water. Wash skin with soap and water. Remove soaked clothing and wash before reuse. Do not allow wet clothing to remain in prolonged contact with skin. If ingested, do not induce vomiting, and seek medical attention immediately. Excessive inhalation should be treated by removing to fresh air. Apply artificial respiration if necessary. In the event of a major spill, evacuate the area and call the fire department. Avoid drainage into water sewage system.

b. Organic Solvents

Characteristics: Usually clear, rapidly evaporating petroleum or alcohol-based solvents. These solvents are usually highly flammable and may or may not mix with water. They usually have an alcohol or oil-like odor and are used in a variety of degreasing, painting, and stripping operations. Examples of organic solvents are toluene, xylene, methyl ethyl ketone (MEK), acetone, and alcohols.

Health Hazards: Organic solvents evaporate very quickly and pose a great fire hazard. Because of this rapid evaporation and the natural penetrating nature of solvents, these materials can enter the body very rapidly through inhalation into the respiratory tract, and absorption through the skin and eyes. Exposures of these types may, in some instances, lead to skin irritation, eye irritation, and respiratory irritation. Solvents eventually enter the blood stream, and in cases of overexposure, may produce a variety of effects including nausea, headache, and dizziness. In very high concentrations, they may pose immediate threat to life and health. Chronic, repeated overexposure to organic solvents has been documented to produce adverse effects.
on the heart, lungs, central nervous system, liver, blood, and skin. They products may be harmful or fatal if swallowed. Some solvents may produce allergic reactions in sensitive people.

**Personal Protective Equipment/Handling:** It is important to minimize your exposure to solvents. For example; avoid skin contact by wearing non-porous gloves. Cotton or leather gloves should never be used while working with solvents because they absorb the solvent and allow it to reach your skin. If you can't wear gloves in your particular job, find other ways to avoid contact with the solvents. For example; use tongs to hold parts while cleaning them with solvents. Never wash your hands in a solvent - use soap or a waterless hand cleaner. Barrier creams may provide additional protection. Use ventilation systems when possible and avoid breathing solvent vapors. If your job requires it, wear a respirator. Use air-supplying respirators in areas of high concentrations. Protect your eyes with safety glasses or goggles. Avoid strong oxidizing agents. Ground and bond all containers when pouring or transferring chemicals.

**Emergency/Special:** In the event of eye contact flush eyes for 15 minutes with water. Avoid prolonged skin contact with any solvents. Wash skin with soap and water. Remove soaked clothing and wash before reuse. If ingested, seek medical help immediately - do not induce vomiting. If inhaled, move victim to fresh air and, if necessary, give artificial respiration. In the event of a spill, eliminate ignition sources, evacuate the area, and contact the fire department. Avoid drainage into water or sewage system.

2. Adhesives

**Characteristics:** Adhesives are typically made up of resins composed of two reaction components: 1) the curing agent (hardener, catalyst, accelerator, activator or setting agent) and 2) the resin. The cured resins are generally found in a paste form, and the uncured resins are viscous liquids or solids.

**Health Hazards:** Some of the liquid uncured resins are skin irritants, sensitizers, or both. Solvents are often the major component of the uncured resins. They are primary skin irritants as a result of their ability to dry and remove natural oils from the skin. They may enhance the sensitizing effects of the dermatitis producing components discussed above.

**Personal Protective Equipment/Handling:** Because of the varying effects of these products, it is important that personal protective equipment be used. Safety glasses should be worn at all times. Impervious gloves and clothing should be worn. Remove and wash soaked clothing before reuse. If overexposure through inhalation occurs, remove the affected person to fresh air. Adhesives should only be used in well-ventilated areas. Air-purifying respirators may be necessary if ventilation is inadequate.

**Emergency/Special:** Keep all stored material away from heat and flames. Adequate ventilation should be provided if any of the liquid components spill. In the event of eye contact, flush with water for 15 minutes. If skin contact occurs, wash the affected area with soap and water. Do not induce vomiting if ingestion occurs. Seek medical attention immediately.
3. Paints and Dyes

a. Water Based Acrylics, Latex Paints

**Characteristics:** These products are available in a variety of colors for many uses including interior and exterior painting of equipment, vehicles, and structures. They are usually nonflammable, but some may burn under extreme situations. They are all water soluble, and may contain some alcohol or ammonia solvents. They are pigmented with a variety of compounds, and usually have a thick, soupy consistency with a mild ammonia odor.

**Health Hazards:** Water based paints are generally considered non-hazardous. Some may contain solvents that may produce mild eye or nose irritation. Some of these products may produce limited skin irritations in extremely sensitive people. These products may be harmful if swallowed. Under normal working conditions, these products are generally considered safe for use.

**Personal Protective Equipment/Handling:** General ventilation should be sufficient, with exhaust ventilation necessary in confined spaces. Goggles or similar means of eye protection should always be used in any painting process. Gloves and protective clothing are recommended for extremely sensitive individuals. Avoid unnecessary exposure or contact. Do not freeze these products. Wash hands/skin with soap and water after use. Store in a cool, dry place.

**Emergency/Special:** In the event of eye contact, flush with water for 15 minutes. Consult with physician if irritation persists. If excessive inhalation occurs, remove victim to fresh air. In the event of ingestion, give water and contact physician immediately. Wash soaked clothes before reuse. Use only soap and water to wash skin.

b. Lacquers, Primers, Non-Water Based Paint

**Characteristics:** These products come in a variety of colors and are used in various coating applications including priming, painting, and lacquering. They may contain both organic and halogenated solvents, and most have pigments that contain heavy metals. Some of the solvents and pigments that may be contained include acetone, diisobutyl ketone, xylene, methylene chloride, lead, chromium, and zinc compounds. They are usually highly flammable.

**Health Hazards:** Because of the high concentration of solvents in these paints, the health hazards are much like those discussed in category 1a and 1b, Solvents. These products also contain heavy metal compounds such as lead, chromium, and zinc. These heavy metals may build up in the blood producing chronic effects such as lead poisoning, which is characterized by weakness, difficulties in concentrating, and sleep problems.

**Personal Protective Equipment/Handling:** These products should be handled with care. Gloves are recommended for skin sensitive individuals. Goggles or safety glasses should be worn at all times. Mechanical ventilation and respirators may be required depending on size of operation and type of paint. Refer to specific SDS for
information. Long sleeve shirts are recommended. Do not use thinners or other solvents to remove paints from hands. Use lava soap and water, followed by hand lotion to prevent drying of the skin. Remove and wash soaked clothing before reuse. Do not apply to hot surfaces. Avoid sparks or flames when using. Never smoke in areas where these paints are being applied. Avoid breathing vapors and paint mist. Ground and bond containers during transfers. Store in a cool, dry place preferably in a flammable liquid storage cabinet.

Emergency/Special: In the event of eye contact, flush with water for 15 minutes. Wash affected skin areas with soap and water. In the event of ingestion, do not induce vomiting; contact a physician immediately. Inhalation exposure should be treated by removing victim to fresh air. Apply artificial respiration if necessary. In the event of a spill, eliminate ignition sources, evacuate area, and contact fire department. Avoid drainage into water or sewage systems.

4. Lubricants

a. Insoluble Oils and Greases

Characteristics: Commonly known as lubricating oils or greases, these oils are generally petroleum-based hydrocarbon mixtures that contain no water. Appearance may range from clear light brown liquids to dark brown greases. Oils can be fire hazards because they are combustible. Examples of common oils and greases are multi weight motor oil, gear lubricating oils and cutting oils used in some machining operations.

Health Hazards: Petroleum based oils and greases are generally of low toxicity. Oil mists and vapors can be generated from sawing and metal forming operations. Inhalation of these mists may cause mild irritation of the nose and throat. The mist may also irritate the eyes. Overexposure by inhalation, although rare, can cause headaches, nausea, or dizziness. The most common exposure to oils and greases is through the skin. Excessive or prolonged exposure of the skin to oils, especially used, dirty, or contaminated oils may cause chronic skin conditions such as contact dermatitis. Ingestion of these substances may be harmful, depending on the purity of the oil and the amount ingested.

Personal Protective Equipment/Handling: Under most circumstances, inhalation overexposure to oil products is not common. If no local exhaust ventilation is available in operations that generate oil mist, a respirator with an organic vapor/particulate cartridge should be utilized. There is no substitute for safe work practices and good personal hygiene. Any practical way to reduce time and frequency of skin exposure to oils is recommended. Mild waterless hand cleaners are helpful in removing oil. **Never use solvents to clean the skin.** This will only increase the risk of unusual skin disorders or dermatitis. Oil resistant protective gloves should be used whenever feasible, and skin cream should be applied after washing to prevent drying. Safety glasses or goggles should be worn to prevent oil from splashing into the eyes.

Emergency/Special: Lubricating oils, like any other chemicals, should be handled with care. In the event of eye contact, flush with water for 15 minutes, and then seek medical attention. In case of incidental ingestion, do not induce vomiting, give milk, or water, and seek medical attention. Any areas of skin contact should be washed
thoroughly with mild soap and lukewarm water or waterless hand cleaner to reduce the risk of skin disorders.

b. Aerosol Spray Lubricants

**Characteristics:** Aerosol spray lubricants, unlike other oil-based lubricants, generally contain a high percentage of halogenated solvents such as 1,1,1 trichloroethane. Examples of spray lubricants include gear oil and silicone spray.

**Health Hazards:** Refer to category 1a (Halogenated Solvents) for overall health hazards of aerosol spray lubricants.

**Additional Information:** Most of the aerosol sprays are usually extremely flammable because of the propellants used (butane, propane, etc.). Phosgene gas, an extremely toxic gas, may be generated as a decomposition product of combustion if the spray lubricants come in contact with a flame (e.g., lighted cigarette, or welding operations) or a very hot metal. Phosgene gas can cause severe irritation to the nose, throat, and eyes, even at extremely low concentrations. Exposure to moderate concentrations can cause a delayed onset of pulmonary edema (fluid in the lungs) that may progress to pneumonia.

**Personal Protective Equipment/Handling:** All solvent-based materials should be used in well-ventilated areas. Use a respirator if spraying moderate concentrations to avoid overexposure. Air-supplying respirators should be used if high concentrations are present. Avoid contact with the skin to reduce the risk of irritation or dermatitis. Use chemically resistant gloves for prolonged or repeated contact. Always wear safety glasses or goggles to prevent eye contact with the aerosol spray.

**Emergency/Special:** In the event of eye contact, flush with water for 15 minutes. Wash skin with soap and water. If ingested, do not induce vomiting and seek immediate medical attention. In case of overexposure by inhalation, remove the person to fresh air, seek medical attention, and apply artificial respiration if necessary. Containers should be stored in a clean, dry area. Avoid storing at temperatures above 80 degrees F. to reduce the risk of the aerosol containers bursting or exploding.

5. Compressed Gases

**Characteristics:** These gases are typically stored in cylinders. The gases are frequently stored in a liquid state and are utilized in a variety of applications such as welding (acetylene), oxidation (oxygen), fuel delivery (propane, butane), cryogenics (liquid helium, oxygen, nitrogen).

**Health Hazards:** Depending on the specific gas contained within the cylinder, the associated hazards exhibited can be similar to those of the substances described in previous categories. For example; anhydrous ammonia gas falls within the corrosive/caustic hazard category. Asphyxiation is the primary hazard associated with compressed gases since they can displace oxygen if there is a sudden and quick release, particularly in confined work areas. Compressed gases either in liquid or vapor form are cryogenic and will cause severe frostbite and burns if allowed to contact the skin.
Personal Protective Equipment/Handling: Self-contained or airline breathing apparatus should be worn in oxygen-deficient atmospheres. General ventilation is usually adequate to maintain sufficient oxygen level. Avoid skin contact with liquid gases. Avoid smoking or other sources of ignition around oxidizers and fuel gases. Compressed gas cylinders should always be handled with extreme care as serious incidents may result from the misuse, abuse or mishandling of cylinders.

Emergency/Special: In the event of a gas leak, evacuate all personnel from the danger area. Shut off the leak if it does not pose a grave risk. Ventilate the area of the leak and move the leaking container to a well-ventilated area. If inhalation overexposure occurs, remove victim to fresh air and give artificial respiration if necessary. If liquid contacts skin, flood the affected area with warm water and seek medical attention.
**Excavation Safety Program**

I. **OBJECTIVE**

This Excavation Safety Program has been developed to protect employees from safety hazards that may be encountered during work in trenches and excavations. This program is intended to assure that:

- Cirks Construction Inc. has appointed one or more individuals within the company to assure compliance with the requirements of this program.
- The responsibilities of the Competent Person(s) and workers are clearly detailed.
- Employees who perform work in excavations are aware of their responsibilities and know how to perform the work safely.
- All persons involved in excavation and trenching work have received appropriate training in the safe work practices that must be followed when performing this type of work.

II. **ASSIGNMENT OF RESPONSIBILITY**

a. **Employer**

In administering the Excavation Safety Program, Cirks Construction Inc. will:

- Monitor the overall effectiveness of the program.
- Provide atmospheric testing and equipment selection as needed.
- Provide personal protective equipment as needed.
- Provide protective systems as needed.
- Provide training to affected employees and supervisors.
- Provide technical assistance as needed.
- Preview and update the program on at least an annual basis, or as needed.

b. **Program Manager**

The Cirks Construction Inc. safety director acts as the competent person for Cirks Construction Inc. in reference to this program, and must assure that:

- The procedures described in this program are followed.
- Employees entering excavations or trenches are properly trained and equipped to perform their duties safely.
- All required inspections, tests, and recordkeeping functions have been performed.

c. **Employees**

All employees, including contractor personnel, who work in or around excavations must comply with the requirements of this program. Employees are responsible for reporting hazardous practices or situations to Cirks Construction Inc. management, as
well as reporting incidents that cause injury to themselves or other employees to the Competent Person.

III. TRAINING

a. Training Schedule

- All personnel involved in trenching or excavation work shall be trained in the requirements of this program by the Cirks Construction Inc. superintendent with assistance from the appropriate supervisors.
- Training shall be performed before employees are assigned duties in excavations.
- Retraining will be performed when work site inspections indicate that an employee does not have the necessary knowledge or skills to safely work in or around excavations or when changes to this program are made.
- Training records will be maintained by the Cirks Construction Inc. superintendent and shall include:
  - Date of the training program.
  - Name(s) of the instructor(s) who conducted the training.
  - A copy of the written material presented.
  - Name(s) of the employee(s) who received the training

b. Training Components

The training provided to all personnel who perform work in excavations shall include:

- The work practices that must be followed during excavating or working in excavations.
- The use of personal protective equipment that will typically be required during work in excavations; including but not limited to safety shoes, hardhats, and fall protection devices.
- Procedures to be followed if a hazardous atmosphere exists or could reasonably be expected to develop during work in an excavation.
- The OSHA Excavation Standard.
- Emergency and non-entry rescue methods, and the procedure for calling rescue services.
- Cirks Construction Inc. policy on reporting incidents causing injury to employees.
c. Training and Duties of Program Manager

The Competent Person, shall receive the training detailed in this program as well as training on the requirements detailed in the OSHA Excavation Standard. The Program Manager shall:

- Coordinate, actively participate in, and document the training of all employees affected by this program.
- Ensure on a daily basis or more often as detailed in this program that worksite conditions are safe for employees to work in excavations.
- Determine the means of protection that will be used for each excavation project.
- Ensure, if required, that the design of a protective system has been completed and approved by a registered professional engineer before work begins in an excavation.
- Make available a copy of this program and the OSHA Excavation Standard to any employee who requests it.

IV. EXCAVATION REQUIREMENTS

a. Utilities and Pre-Work Site Inspection

Prior to excavation, the site shall be thoroughly inspected by the Cirks Construction Inc. superintendent to determine if special safety measures must be taken.

b. Surface Encumbrances

All equipment, materials, supplies, permanent installations (i.e., buildings or roadways), trees, brush, boulders, and other objects at the surface that could present a hazard to employees working in the excavation shall be removed or supported as necessary to protect employees.

c. Underground Installations

The location of sewer, telephone, fuel, electric, water, or any other underground installations or wires that may be encountered during excavation work shall be determined and marked prior to opening an excavation. Arrangements shall be made as necessary by the Cirks Construction Inc. superintendent with the appropriate utility entity for the protection, removal, shutdown, or relocation of underground installations.

If it is not possible to establish the exact location of these installations, the work may proceed with caution if detection equipment or other safe and acceptable means are used to locate the utility.

Excavation shall be done in a manner that does not endanger the underground installations or the employees engaged in the work. Utilities left in place shall be protected by barricades, shoring, suspension, or other means as necessary to protect employees.
d. Protection of the Public

Barricades, walkways, lighting, and posting shall be provided as necessary for the protection of the public prior to the start of excavation operations.

- Guardrails, fences, or barricades shall be provided on excavations adjacent to walkways, driveways, and other pedestrian or vehicle thoroughfares. Warning lights or other illumination shall be maintained as necessary for the safety of the public and employees from sunset to sunrise.
- Wells, holes, pits, shafts, and all similar hazardous excavations shall be effectively barricaded or covered and posted as necessary to prevent unauthorized access. All temporary excavations of this type shall be backfilled as soon as possible.
- Walkways or bridges protected by standard guardrails shall be provided where employees and the general public are permitted to cross over excavations. Where workers in the excavation may pass under these walkways or bridges, a standard guardrail and toe board shall be used to prevent the hazard of falling objects. Information on the requirements for guardrails and toe boards may be obtained by contacting the Cirks Construction Inc. superintendent.

e. Protection of Employees

Stairs, ladders, or ramps shall be provided at excavation sites where employees are required to enter trench excavations over four (4) feet deep. The maximum distance of lateral travel (along the length of the trench) necessary to reach the means of egress shall not exceed 25 feet.

- Structural Ramps
  - Structural ramps used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a person qualified in structural design and shall be constructed in accordance with the design.
  - Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent movement or displacement.
  - Structural members used for ramps and runways shall be of uniform thickness.
  - Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.
  - Structural ramps used in place of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

- Ladders
  - When portable ladders are used, the ladder side rails shall extend a minimum of three (3) feet above the upper surface of the excavation.
  - Ladders shall have nonconductive side rails if work will be performed near exposed energized equipment or systems.
Two or more ladders, or a double-cleated ladder, will be provided where 25 or more employees will be conducting work in an excavation where ladders serve as the primary means of egress, or where ladders serve two-way traffic.

Ladders will be inspected prior to use for signs of damage or defects. Damaged ladders will be removed from service and marked with “Do Not Use” until repaired.

Ladders shall be used only on stable and level surfaces unless secured. Ladders placed in any location where they can be displaced by workplace activities or traffic shall be secured or barricades shall be used to keep these activities away from the ladders.

Non self-supporting ladders shall be positioned so that the foot of the ladder is one-quarter of the working length away from the support.

Employees are not permitted to carry any object or load while on a ladder that could cause them to lose their balance and fall.

f. Exposure to Vehicular Traffic

Employees exposed to vehicular traffic shall be provided with and shall wear warning vests or other suitable garments marked with or made of reflectorized or high-visibility material. Warning vests worn by flagmen shall be red or orange and shall be reflectorized material if worn during night work. Emergency lighting, such as spotlights or portable lights, shall be provided as needed to perform work safely.

g. Exposure to Falling Loads

No employee is permitted underneath loads being handled by lifting or digging equipment. Employees are required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles provide adequate protection for the operator during loading and unloading operations.

h. Warning System for Mobile Equipment

A warning system shall be used when mobile equipment is operated adjacent to the edge of an excavation if the operator does not have a clear and direct view of the edge of the excavation. The warning system shall consist of barricades, mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

i. Hazardous Atmospheres

A competent person will test the atmosphere in excavations over four (4) feet deep if a hazardous atmosphere exists or could reasonably be expected to exist. A hazardous atmosphere could be expected, for example, in excavations in landfill areas, areas where hazardous substances are stored nearby, or near areas containing gas pipelines.

- Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous
atmospheres. These precautions include providing proper respiratory protection or forced ventilation of the workspace.

- Forced ventilation or other effective means shall be used to prevent employee exposure to an atmosphere containing a flammable gas in excess of ten (10) percent of the lower flammability limit of the gas.
- When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, continuous air monitoring will be performed by the Cirks Construction Inc. superintendent or competent person. The device used for atmospheric monitoring shall be equipped with an audible and visual alarm.
- Atmospheric testing will be performed using a properly calibrated direct reading gas monitor. Direct reading gas detector tubes or other acceptable means may also be used to test potentially toxic atmospheres.
- Each atmospheric testing instrument shall be calibrated by the Cirks Construction Inc. superintendent or competent person on a schedule and in a manner recommended by the manufacturer. In addition:
  o Any atmospheric testing instrument that has not been used within 30 days shall be recalibrated prior to use.
  o Each atmospheric testing instrument shall be calibrated at least every six (6) months.
- Each atmospheric testing instrument will be field checked immediately prior to use to ensure that it is operating properly.

j. Personal Protective Equipment

- All employees working in trenches or excavations shall wear approved hardhats and steel-toe or composite-toe shoes or boots.
- Employees exposed to flying fragments, dust, or other materials produced by drilling, sawing, sanding, grinding, and similar operations shall wear approved safety glasses with side shields.
- Employees performing welding, cutting, or brazing operations, or are exposed to the hazards produced by these tasks, shall wear approved spectacles or a welding face-shield or a helmet, as determined by the Cirks Construction Inc. superintendent.
- Employees entering bell-bottom pier holes or other similar deep and confined footing excavations shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.
- Employees shall wear, as determined by the Competent Person, approved gloves, or other suitable hand protection.
- Employees using or working in the immediate vicinity of hammer drills, masonry saws, jackhammers, or similar high-noise producing equipment shall wear suitable hearing protection, as determined by the Competent Person.
Each employee working at the edge of an excavation six (6) feet or more deep shall be protected from falling. Fall protection shall include guardrail systems, fences, barricades, covers, or a tie-back system meeting OSHA requirements, as determined by the Cirks Construction Inc. superintendent.

Emergency rescue equipment, such as breathing apparatus, a safety harness and line, and a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may develop during work in an excavation. This equipment shall be attended to when in use. Only personnel who have received approved training and have appropriate equipment shall attempt retrieval that would require entry into a hazardous atmosphere. If entry into a known hazardous atmosphere must be performed, then the Cirks Construction Inc. superintendent shall be given advance notice so that the hazards can be evaluated and rescue personnel placed on standby if necessary.

k. Walkways and Guardrails

Walkways shall be provided where employees or equipment are permitted to cross over excavations. Guardrails shall be provided where walkways, accessible only to on-site project personnel, are six (6) feet or more above lower levels.

l. Protection from Water Accumulation Hazards

Employees are not permitted to work in excavations that contain or are accumulating water unless precautions have been taken to protect them from the hazards posed by water accumulation. Precautions may include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines.

If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operation shall be monitored by a person trained in the use of that equipment.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation. Precautions shall also be taken to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains shall be re-inspected by the Cirks Construction Inc. superintendent after each rain incident to determine if additional precautions, such as special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines, should be used.

The Cirks Construction Inc. superintendent shall inform affected workers of the precautions or procedures that are to be followed if water accumulates or is accumulating in an excavation.
m. Stability of Adjacent Structures

The Cirks Construction Inc. superintendent will determine if the excavation work could affect the stability of adjoining buildings, walls, sidewalks, or other structures.

- Support systems (such as shoring, bracing, or underpinning) shall be used to assure the stability of structures and the protection of employees where excavation operations could affect the stability of adjoining buildings, walls, or other structures.

- Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted, except when:
  - A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure.
  - The excavation is in stable rock.
  - A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity.
  - A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

- Sidewalks, pavements, and appurtenant structures shall not be undermined unless a support system or other method of protection is provided to protect employees from the possible collapse of such structures.

- Where review or approval of a support system by a registered professional engineer is required, the Cirks Construction Inc. superintendent shall secure this review and approval in writing before the work begins.

n. Protection from Falling Objects and Loose Rocks or Soil

- Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of:
  - Scaling to remove loose material.
  - Installation of protective barricades, such as wire mesh or timber, at appropriate intervals on the face of the slope to stop and contain falling material.
  - Benching sufficient to contain falling material.

- Excavation personnel shall not be permitted to work above one another where the danger of falling rock or earth exists.

- Employees shall be protected from excavated materials, equipment, or other materials that could pose a hazard by falling or rolling into excavations.

- Protection shall be provided by keeping such materials or equipment at least two (2) feet from the edge of excavations, by use of restraining devices that are
sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

- Materials and equipment may, as determined by the Cirks Construction Inc. superintendent, need to be stored further than two (2) feet from the edge of the excavation if a hazardous loading condition is created on the face of the excavation.

- Materials piled, grouped, or stacked near the edge of an excavation must be stable and self-supporting.

o. Inspection by Program Manager

- The Competent Person in excavation/trenching shall conduct daily inspections of excavations, adjacent areas, and protective systems for evidence of a situation that could result in possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the Cirks Construction Inc. superintendent prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when the trench will be or is occupied by employees.

- Where the Cirks Construction Inc. superintendent finds evidence of a situation that could result in a possible cave-in, failure of protective systems, hazardous atmosphere, or other hazardous conditions, exposed employees shall be removed from the hazardous area until precautions have been taken to assure their safety.

- The Cirks Construction Inc. superintendent shall maintain a written log of all inspections conducted. This log shall include the date, work site location, results of the inspection, and a summary of any action taken to correct existing hazards.

V. PROTECTIVE SYSTEM REQUIREMENTS

a. Protection of Employees

- Employees in an excavation shall be protected from cave-ins by using either an adequate sloping and benching system or an adequate support or protective system. The only exceptions are:
  o Excavations made entirely in stable rock.
  o Excavations less than five (5) feet in depth where examination of the ground by the Cirks Construction Inc. superintendent provides no indication of a potential cave-in.

- Protective systems shall be capable of resisting all loads that could reasonably be expected to be applied to the system.

b. Design of Sloping and Benching Systems

The slope and configuration of sloping and benching systems shall be selected and constructed by the Cirks Construction Inc. superintendent in accordance with the following options:

- Allowable configurations and slopes
Excavations shall be sloped at an angle no steeper than one and one-half (1 ½) horizontal to one (1) vertical (34 degrees measured from the horizontal), unless one of the options listed below is used.

Slopes shall be properly excavated depending on soil type as shown in 29 CFR 1926, Subpart P, Appendix B.

- Determination of slopes and configurations using 29 CFR 1926, Subpart P, Appendices A and B.

The maximum allowable slopes and allowable configurations for sloping and benching systems shall meet the requirements set forth in these appendices.

- Designs using other tabulated data.

- The design of sloping or benching systems may be selected from, and shall be constructed in accordance with, other tabulated data, such as tables and charts. The tabulated data used must be in written form and include the following:

  - Identification of the factors that affect the selection of a sloping or benching system.
  - Identification of the limits of the use of the data, including the maximum height and angle of the slopes determined to be safe.
  - Other information needed by the user to make correct selection of a protective system.
  - At least one copy of the tabulated data that identifies the registered professional engineer who approved the data shall be maintained at the jobsite during construction of the protective system. After that time, the data may be stored off the jobsite, and shall be maintained by the Competent Person.

- Design by a registered professional engineer

  - Sloping or benching systems designed in a manner other than those described in the preceding three options shall be approved by a registered professional engineer.

  - Designs shall be in written form and shall include at least the following information:

    - The maximum height and angle of the slopes that were determined to be safe for a particular project.
    - The identity of the registered professional engineers who approved the design.

  - At least one copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time, the design may be stored off the jobsite, and shall be maintained by Competent Person.
c. Design of Support, Shield, and Other Protective Systems

The design of support systems, shield systems, and other protective systems shall be selected and constructed by a qualified subcontractor in accordance with the following Cal/Fed OSHA requirements:

- Timber shoring in trenches shall be designed in accordance with the requirements of the OSHA guidelines.
- Aluminum hydraulic shoring shall be designed in accordance with the manufacturer’s tabulated data or the requirements of the OSHA guidelines.

- Designs using manufacturer’s tabulated data
  - Support systems, shield systems, and other protective systems designed from manufacturer’s tabulated data shall be constructed and used in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.
  - Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall be allowed only after the manufacturer issues specific written approval.
  - Manufacturer’s specifications, recommendations, and limitations, as well as the manufacturer’s written approval to deviate from the specifications, recommendations, and limitations, shall be kept in written form at the jobsite during construction of the protective system(s). After that time, the information may be stored off the jobsite, and shall be maintained by the Competent Person.

- Designs using other tabulated data
  - Designs of support systems, shield systems, and other protective systems shall be selected from and constructed in accordance with tabulated data, such as tables and charts.

  The tabulated data shall be in written form and shall include all of the following:

  - Identification of the factors that affect the selection of a protective system drawn from such data.
  - Identification of the limits of the use of such data.
  - Information needed by the user to make a correct selection of a protective system from the data.
  - At least one written copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time, the data may be stored off the jobsite, and shall be maintained by the Cirks Construction Inc. superintendent.

- Design by a registered professional engineer
  - Support systems, shield systems, and other protective systems designed in a manner other than the preceding three options shall be approved by a registered professional engineer.
• Designs shall be in written form and shall include:
  o A plan indicating the sizes, types, and configurations of the materials to be used in the protective system.
  o The identity of the registered professional engineer who approved the design.
• At least one copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, and shall be maintained by the Competent Person.

d. Materials and Equipment
• Materials and equipment used for protective systems shall be free from damage or defects that might affect their proper function.
• Manufactured materials and equipment used for protective systems shall be used and maintained in accordance with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.
• When materials or equipment used for protective systems are damaged, the Cirks Construction Inc. superintendent shall ensure that these systems are examined by a competent person to evaluate suitability for continued use. If the competent person cannot assure that the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service. The material or equipment shall then be evaluated and approved by a registered professional engineer before being returned to service.

e. Installation and Removal of Supports
• General
  o Members of support systems shall be securely connected together to prevent sliding, falling, kick-outs, or other potential hazards.
  o Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support systems.
  o Individual members of the support systems shall not be subjected to loads exceeding those that they were designed to support.
  o Before temporary removal of individual support members begins, additional precautions shall be taken as directed by the Cirks Construction Inc. superintendent to ensure the safety of employees (i.e., the installation of other structural members to carry the loads imposed on the support system).
  o Removal of support systems shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly. If there is any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation, the work shall be halted until it can be examined by the Cirks Construction Inc. superintendent.
  o Backfilling shall progress in conjunction with the removal of support systems from excavations.
• Additional Requirements
o Excavation of material to a level no greater than two (2) feet below the bottom of the members of a support system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench. There shall be no indications of a possible loss of soil from behind or below the bottom of the support system while the trench is open.

o Installation of a support system shall be closely coordinated with the excavation of trenches.

f. Sloping and Benching Systems

Employees are not permitted to work above other employees in the faces of sloped or benched systems, except when employees at lower levels are protected from the hazards of falling, rolling, or sliding material or equipment.

g. Shield Systems

1. General

   o Shield systems shall not be subjected to loads that are greater than those they are designed to withstand.

   o Shields shall be installed in a manner that will restrict lateral or other hazardous movement of the shield and could occur during cave-in or unexpected soil movement.

   o Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.

   o Employees are not permitted in trenches when shields are being installed, removed, or moved vertically.

2. Additional Requirements

   o Excavation of material to a level no greater than two (2) feet below the bottom of the shield system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench.

   o There shall be no indications of a possible loss of soil from behind or below the bottom of the shield system while the trench is open.

VI. INCIDENT INVESTIGATIONS

All incidents that result in injury to workers, as well as near misses, regardless of their nature, shall be reported and investigated. Investigations shall be conducted by Cirks Construction Inc. superintendent as soon after an incident as possible to identify the cause and means of prevention to eliminate the risk of reoccurrence.

In the event of such an incident, the Excavation Safety Program shall be reevaluated by Cirks Construction Inc. superintendent to determine if additional practices, procedures, or training are necessary to prevent similar future incidents.

VII. CHANGES TO PROGRAM
Any changes to the Excavation Safety Program shall be approved by Cirks Construction Inc. superintendent, and shall be reviewed by a qualified person as the job progresses to determine additional practices, procedures, or training needs necessary to prevent injuries. Affected employees shall be notified of procedure changes, and trained if necessary. A copy of this program shall be maintained at the jobsite by Cirks Construction Inc. superintendent.

VIII. GLOSSARY

**Accepted engineering practices**: The standards of practice required by a registered professional engineer.

**Aluminum hydraulic shoring**: A manufactured shoring system consisting of aluminum hydraulic cylinders (cross-braces) used with vertical rails (uprights) or horizontal rails (wales). This system is designed to support the sidewalls of an excavation and prevent cave-ins.

**Bell-bottom pier hole**: A type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a bell shape.

**Benching system**: A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or more horizontal steps, usually with vertical or near-vertical surfaces between levels.

**Cave-in**: The movement of soil or rock into an excavation, or the loss of soil from under a trench shield or support system, in amounts large enough to trap, bury, or injure and immobilize a person.

**Competent person**: A person who has been trained to identify hazards in the workplace, or working conditions that are unsafe for employees, and who has the authority to have these hazards corrected.

**Cross braces**: The horizontal members of a shoring system installed from side to side of the excavation. The cross braces bear against either uprights or wales.

**Excavation**: Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

**Faces or sides**: The vertical or inclined earth surfaces formed as a result of excavation work.

**Failure**: The movement or damage of a structural member or connection that makes it unable to support loads.

**Hazardous atmosphere**: An atmosphere that is explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, that may cause death, illness, or injury.

**Kick-out**: The incidental movement or failure of a cross brace.

**Program Manager**: The individual within the company who oversees excavation work and is responsible for assuring compliance with this program.

**Protective system**: A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face into an excavation, or from the collapse of adjacent structures.
Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

**Ramp:** An inclined walking or working surface that is used to gain access to one point from another. A ramp may be constructed from earth or from structural materials such as steel or wood.

**Sheeting:** The members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

**Shield system:** A structure used in an excavation to withstand cave-ins and which will protect employees working within the shield system. Shields can be permanent structures or portable units moved along as work progresses. Shields used in trenches are usually referred to as trench boxes or trench shields.

**Shoring system:** A structure that is built or put in place to support the sides of an excavation to prevent cave-ins.

**Sides:** See Faces.

**Sloping system:** Sloping the sides of an excavation away from the excavation to protect employees from cave-ins. The required slope will vary with soil type, weather, and surface or near surface loads that may affect the soil in the area of the trench (such as adjacent buildings, vehicles near the edge of the trench, etc.).

**Stable rock:** Natural solid mineral material that can be excavated with vertical sides that will remain intact while exposed.

**Structural ramp:** A ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

**Support system:** A structure used as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

**Tabulated data:** Tables and charts approved by a registered professional engineer and used to design and construct a protective system.

**Trench:** A narrow excavation (in relation to its height) made below the surface of the ground.

**Trench box or trench shield:** See Shield System.

**Uprights:** The vertical members of a trench shoring system placed in contact with the earth and usually positioned so the individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called sheeting.

**Wales:** Horizontal members of a shoring system placed in the direction of the excavation face whose sides bear against the vertical members of the shoring system or earth (the uprights or sheeting).
Scaffold Safety Program - Construction Safety Program

Purpose

The purpose of this safety policy and procedure is to establish guidelines for the protection of Cirks Construction Inc. employees who work on scaffold work surfaces.

Applicability

Scaffolding has a variety of applications. It is used in new construction, alteration, routine maintenance, renovation, painting, repairing, and removal activities. Scaffolding offers a safer and more comfortable work arrangement compared to leaning over edges, stretching overhead, and working from ladders. Scaffolding provides employees safe access to work locations, level and stable working platforms, and temporary storage for tools and materials for performing immediate tasks. Scaffolding incidents mainly involve personnel falls and falling materials caused by equipment failure, incorrect operating procedures, and environmental conditions. Additionally, scaffolding overloading is a frequent single cause of major scaffold failure. This safety policy and procedure provides guidelines for the safe use of scaffolds. It includes training provisions and guidelines for scaffold erection and use.

Policy

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision of a competent person and will have guardrails and toe-boards installed. When scaffolding hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and proper training regarding Scaffolds will be implemented. These measures will be implemented to minimize those hazards to ensure the safety of employees and the public.

Responsibilities

It is the responsibility of each manager, supervisor, and employee to ensure implementation of Cirks Construction Inc. safety policy and procedure on Scaffolds. It is also the responsibility of each Cirks Construction Inc. employee to report immediately any unsafe act or condition to his or her supervisor. Specific responsibilities are found in Section 6.3.

Procedure

This section provides applicable definitions, establishes general provisions, and identifies specific responsibilities required by Cirks Construction Inc. safety policy and procedure on scaffolds.

Definitions

- **Brace**: A tie that holds one scaffold member in a fixed position with respect to another member. Brace also means a rigid type of connection holding a scaffold to a building or structure.

- **Coupler**: A device for locking together the component tubes of a tube and coupler scaffold.
Harness: A design of straps which is secured about the employee in a manner to distribute the arresting forces over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.

Hoist: A mechanical device to raise or lower a suspended scaffold. It can be mechanically powered or manually operated.

Maximum Intended Load: The total load of all employee, equipment, tool, materials, transmitted, wind, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mechanically Powered Hoist: A hoist which is powered by other than human energy.

Outriggers: The structural member of a supported scaffold used to increase the base width of a scaffold in order to provide greater stability for the scaffold.

Platform: The horizontal working surface of a scaffold.

Safety Belt: A strap with means for securing about the waist or body and for attaching to a lanyard, lifeline, or deceleration device.

Scaffold: Any temporary elevated or suspended platform and its supporting structure used for supporting employees or materials or both, except this term does not include crane or derrick suspended personnel platforms.

Training

Affected employees will receive instruction on the particular types of scaffolds which they are to use. Training should focus on proper erection, handling, use, inspection, and care of the scaffolds. Training must also include the installation of fall protection, guardrails, and the proper use and care of fall arrest equipment.

This training should be done upon initial job assignment. Retraining shall be done when job conditions change. Periodic refresher training shall be done at the discretion of the supervisor.

Company designated “competent person(s)” will receive additional training regarding the selection of scaffolds, recognition of site conditions, recognition of scaffold hazards, protection of exposed personnel and public, repair and replacement options, and requirements of standards.

Safe Scaffold Erection and Use

Safe scaffold erection and use is important in minimizing and controlling the hazards associated with their use. Scaffold work practices and rules should be based on:

- Sound design
- Selecting the right scaffold for the job
- Assigning personnel
- Fall protection
- Guidelines for proper erection
- Guidelines for use
- Guidelines for alteration and dismantling
- Inspections
- Maintenance and storage

**Types of Scaffolds**
There are many different types of scaffolds used. The three major categories are:

- Self-supporting scaffolds
- Suspension scaffolds
- Special use scaffolds

**Self-supporting scaffolds** are one or more working platforms supported from below by outriggers, brackets, poles, legs, uprights, posts, frames, or similar supports. The types of self-supporting scaffolds include:

- Fabricated Frame
- Tube and Coupler
- Mobile
- Pole

**Suspension scaffolds** are one or more working platforms suspended by ropes or other means from an overhead structure(s). The types of suspension scaffolds include:

- Single-Point Adjustable (Boatswain’s Chairs)
- Two-Point Adjustable (Swing Stage)
- Multiple-Point Adjustable
- Multi-Lend
- Category
- Float (Ship)
- Interior Hung
- Needle Beam

**Special use scaffolds** and assemblies are capable of supporting their own weight and at least 4 times the maximum intended load. The types of special use scaffolds include:

- Form and Carpenter Bracket
- Roof Bracket
- Outrigger
- Pump Jack
- Ladder Jack
- Window Jack
- Horse
- Crawling Boards
- Step, Platforms, and Trestle Ladder

**Responsibilities:**

**Managers**

Managers will ensure adequate funds are available and budgeted for the purchase of scaffolds in their areas. They will also identify the employees affected by this safety policy and procedure. Managers will obtain and coordinate the required training for the affected employees. Managers will also ensure compliance with this safety policy and procedure through their auditing process.

**Supervisors**

Supervisors will not allow any employee who has not received the required training to perform any of the tasks or activities related to scaffold erection or dismantling.

Supervisors will communicate appropriate needs to managers/unit heads or supervisors. Supervisors will ensure that employees are provided with PPE as necessary for their job. Supervisors will ensure that a competent person is in charge of scaffold erection according to the manufacturer's specifications.

**Competent Person**

The competent person will oversee the scaffold selection, erection, use, movement, alteration, dismantling, maintenance, and inspection. The competent person will be knowledgeable about proper selection, care, and use of the fall protection equipment. Additionally, the competent person shall assess hazards.

**Employees**

Employees shall comply with all applicable guidelines contained in this safety policy and procedure. Employees will report damaged scaffolds, accessories, and missing or lost components. Employees will assist with inspections as requested.

**Safety Department**

Safety and Loss Control will provide prompt assistance to managers, supervisors, or others as necessary on any matter concerning this safety policy and procedure. Safety and Loss Control will assist in developing or securing required training. Safety and Loss Control will also work with Purchasing and Central Equipment Unit to ensure that all newly purchased scaffolds comply with current safety regulations and this safety policy and procedure. Safety Engineers will provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure.

**Purchasing Department**
Purchasing Department is responsible for ensuring that purchased scaffolds and related material and equipment meet or exceed current safety regulations.

**Safety Requirements for Scaffolds**

The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons or as requested for corrective reasons by Safety and Loss Control Personnel.

Guardrails and toe-boards shall be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds 4 feet to 10 feet in height having a minimum horizontal dimension in either direction of less than 45 inches shall have standard guardrails installed on all open sides and ends of the platform.

Guardrails must be 2 x 4 inches, or the equivalent, not less than 36 inches or more than approximately 42 inches high, with a mid-rail, when required, of 1 x 4 inch lumber, or the equivalent. Supports must be at intervals not to exceed 8 feet. Toe-board and the guardrail shall extend along the entire opening.

Scaffolds and their components must be capable of supporting without failure at least 4 times the maximum intended load.

Any scaffold, including accessories such as braces, brackets, trusses, screw legs, ladders, couplers, etc., damaged or weakened from any cause must be repaired or replaced immediately, and shall not be used until repairs have been completed.

All load-carrying timber members of scaffold framing shall be a minimum of 1,500 fiber (Stress Grade) construction grade lumber.

All planking must be Scaffold Grades, or equivalent, as recognized by approved grading rules for the species of wood used. The maximum permissible span for 2 x 9 inch or wider planks is shown in the following:

The maximum permissible span for 1-1/4 x 9 inch or wider plank of full thickness shall be 4 feet with medium duty.
Company Policy for Occupational Noise Exposure

It is a Cirks Construction Inc. safety policy for the prevention of employee exposure to hazardous levels of noise is adopted from the following OSHA regulations.

Occupational Noise Exposure

We have implemented this policy to ensure that no employee is exposed to noise levels in excess of the action levels as listed in the following regulations. The safety director and the superintendent are the designated supervisors for ensuring the following engineering controls and work practices will be enforced:

- Upon initial hiring, all employees who are exposed to action level noise will be trained in the hazardous presented by excessive noise levels in the workplace, and the use and care of hearing protection devices. Training will be repeated annually for each employee and updated to reflect changes in personal protective equipment (PPE) and work processes or requirements.

- Hearing protectors are available upon request from the safety director and the superintendent at no cost to all employees exposed to an 8-hour time-weighted average of 85 decibels. Hearing protections will be replaced as necessary. Each employee will be properly trained in the use, care, and fitting of hearing protectors. The safety director and the superintendent will ensure that hearing protectors are worn. Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors.

- Cirks Construction Inc. will provide a continuing effective hearing conservation program when employees are exposed to sound levels greater than 85 decibels on an 8-hour time-weighted average basis.

- When Information indicates that employee exposure may equal/exceed the 8-hour time-weighted average of 85 decibels, the safety director and the superintendent will implement a monitoring program to identify employees to be included in the hearing conservation program.

- Employees will be required to wear hearing protection in work areas whenever employee noise exposure 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.

- The safety director and the superintendent will maintain an audiometric testing program by making audiometric testing available to all employees whose exposure equal or exceed an 8-hour time-weighted average 85 decibels. The program is provided at no cost to employees.

- Audio monitoring will be implemented if it is believed noise levels in work areas are approaching or exceed action level limits. If monitoring results indicate exposures equaling or exceeding safe limits, an employee will be included in a hearing conservation program.

- Within 6 months of an employee’s first exposure at or above the action level, Cirks Construction Inc. shall establish a valid baseline audiogram that can be compared. When a mobile van is used, the baseline shall be established within 1 year.
• Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees will also be notified to avoid high levels of noise.

• If a standard threshold shift occurs, use of hearing protection shall be re-evaluated or refitted and if necessary, a medical evaluation may be required. The following procedures will be implemented:
  o Employees not using hearing protectors will be fitted with hearing protectors, trained in their use and care, and required to use them.
  o Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
  o Employees will be referred for a clinical audiological evaluation or an ontological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggrieved by the wearing of hearing protectors.
  o Employees will be informed of the need for an ontological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

• The safety director and the superintendent will evaluate hearing protection for the specific noise environments in which the protector will be used.

• Hearing protection is available at no cost to all employees upon request from the jobsite foreman or company office.
**SWPPP and Environmental Management Plan**

**Purpose**
This document has been prepared specifically for Cirks Construction Inc., Inc. This document describes management measures that will be implemented during all construction activities that may create a risk to the environment.

In general, this Construction Environmental Management Plan (CEMP) sets out:

- An environmental management framework to which Cirks Construction Inc. systems will apply.
- Environmental management and monitoring measures to be adopted and implemented throughout the infrastructure construction phases.
- Responsibilities for implementation of management and monitoring measures during infrastructure construction phase.
- Measures set out in this CEMP are assumed to be adopted for the purposes of assessing likely environmental effects.

This plan will address the following issues all specifically referred to:

- Noise
- Vibration
- Dust
- Smoke
- Emissions
- Engineering measures to mitigate above
- Detailed Scope of Demolition and Infrastructure works
- Contact arrangements
- Commitment to ICE Demolition Protocol
- Commitment to Considerate Contractors Scheme
- Routing of site traffic
- Waste Storage, Separation and Disposal
- Tree Protection
- Ecology
- Site security
- Asbestos

**Sequence of Works to protect the environment to include EPA and SWPP Regulations**
The process of works will be expected as summarized below:

- Fencing, barriers, and signage will be placed around the perimeter of the site
- All site operatives will be inducted and made aware of the site-specific hazards
• Access and egress routes will be identified and demarcated by barriers to separate vehicular traffic from pedestrians

• Access to and from the site will be detailed by Cirks Construction Inc. superintendents’ Daily Risk Assessment. OR’s method statement and plan of work

• Capping of all service supplies will be carried out, which affects or will be affected by the works. All such work shall only be undertaken with the prior agreement and approval of the relevant utility companies.

• Temporary works to be installed if required.

• The water table of the site may necessitate pumping and shoring to facilitate deep void excavation.

• Any voids to be back filled will be done so using the site produced 6F2 crush material compacted in layers in accordance with the specification for Highway Works.

• Standpipes and monitoring holes may be required and so these will be retained and protected during works as required by the Geotechnical Engineer.

The safety of the general public and community retail neighbors to the site shall be considered of paramount importance. Where the works affect such people suitable safety arrangements shall be employed and shall be detailed in the Daily Risk Assessment and each subcontract.

It will be incumbent upon Cirks Construction Inc. to fully protect all areas of the construction site where NSW or debris can exist and the risk of entering to the unprotected street drains, gullies, swales, and water channels is present.

Dust suppression measures will be implemented by the use of suitable screens, water to damp down and the use of covered vehicle skips to remove the waste from site.

Noise will be monitored against background levels and kept to a minimum by the use of specific tools designed for the task which are modern, maintained and in good order.

It is planned to recycle as much material as ecologically safe.

**Site Management**

The works will be supervised at all times by a competent person with appropriate experience and training. The site supervisor will carry out tailgate training on a weekly basis and a record kept of the attendees and topics in the site office.

**Potential Environmental Impacts During Construction**

A review has been undertaken of the potential source of adverse impacts, which can be associated with carrying out demolition and construction works. The results of this are presented in the table below;
## POTENTIAL IMPACTS AND HEADLINE MITIGATION MEASURES DURING IMPLEMENTATION

<table>
<thead>
<tr>
<th>Issue</th>
<th>Potential</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Noise</strong></td>
<td>Increased road noise levels from vehicles. Increased noise levels from plant during demolition works and excavation and general construction works (e.g., from the use of air compressors and diamond cutters).</td>
<td>Defined working hours, baffles to certain plant, local acoustic screening. Vehicle routing. Beepers, radios etc. to be silenced.</td>
</tr>
<tr>
<td><strong>Vibration</strong></td>
<td>Increased vibration levels from vehicles. Increased vibration levels from plant during demolition and general construction works. (e.g., from hand operated breakers)</td>
<td>Defined working hours. Selection of appropriate plant and work. Phased deliveries to minimize number of vehicles attending site. Vehicle routing. Engines to be switched off when vehicles are idle or on site.</td>
</tr>
<tr>
<td><strong>Dust / Air Quality</strong></td>
<td>Windblown dust from ground surfaces, stockpiles, vehicle work faces (Demolition works are undertaken within enclosed space) and cutting and grinding of materials. Exhaust emissions from lorries and plant delivering and removing materials including dust and particulates.</td>
<td>Cover all open backed vehicles, ‘water down’ demolition activities; switch off vehicle engines when parked. Cover waste skips on site.</td>
</tr>
<tr>
<td><strong>Waste</strong></td>
<td>Waste from demolition, Minimal waste anticipated from foundation and structure works.</td>
<td>Instigate Site Waste Management Plan and re-cycling program.</td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td>Increased sediment loadings to storm water system. Potentially contaminated storm-water runoff.</td>
<td>Do not allow direct discharge of water into sewerage collection system.</td>
</tr>
<tr>
<td><strong>Traffic</strong></td>
<td>A relatively small increase in traffic expected during the Construction Phase. Minor potential traffic disruption caused by site traffic. Increased vehicle movements mainly consisting of Heavy Goods</td>
<td>Phased deliveries to minimize numbers of vehicles attending site, switch off vehicle engines when parked, and minimize abnormal loads. Vehicles to be attended when at the site boundaries.</td>
</tr>
<tr>
<td><strong>Storage of fuels and construction materials</strong></td>
<td>Accidental spills, discharges to drains/storm-water system Contamination to ground. Minimal storage of small quantities of Diesel/Propane/Oxyacetylene anticipated.</td>
<td>All fuel tanks etc. to be used off site and no discharge allowed into the sewage collection system. No significant storage of fuels on site is expected during the construction phase. Ventilated Gas storage cages.</td>
</tr>
<tr>
<td><strong>Pedestrian access</strong></td>
<td>Restrictions on pedestrian access to walkways, footpaths, and roads.</td>
<td>Erect protective barriers and hoardings adjacent to public footpaths. Protected walkway to be provided to the front elevation over the footpath.</td>
</tr>
<tr>
<td><strong>Hazardous and contaminated materials</strong></td>
<td>Exposure of the workforce to deleterious / hazardous materials and contaminated land, mobilization of any source contaminants and creation of pathway from source to groundwater receptor.</td>
<td>Site investigation reports to indicate if any contaminated fill is present. Assessments and careful implementation of associated working method statements to ensure that no hazardous materials find a path to groundwater source.</td>
</tr>
<tr>
<td><strong>Ecology</strong></td>
<td>Water / mud run off into the drains.</td>
<td>Do not allow direct discharge of water into sewerage collection system, utilize interceptors where necessary.</td>
</tr>
</tbody>
</table>
Environmental Incident Procedure
Cirks Construction Inc. has established and will implement an environmental incident procedure as part of their Emergency Plan combined with their management systems on site. This procedure is designed to respond to anticipated environmental hazards and risks on site and will include emergency control measures taking into account the Environment Agency’s Pollution Prevention guideline, General Guide to the Prevention of Pollution and Pollution Incident Response Planning.

The environmental procedure includes:

- An environmental incident / pollution reporting and response plan.
- Measures to mitigate the adverse effects of an environmental incident.
- 24-hour emergency contact details and method of notifying emergency services, Local Authorities, Environmental Agency, other statutory authorities, and key personnel.
- Measures to be adopted to investigate and prevent the recurrence of an environmental incident.

Good Housekeeping
Cirks Construction Inc. will ensure that the site is kept in good order at all times. Including the maintenance and management of all entrances and exists.

Pedestrian Access
Pedestrian access to the whole site will be via secure entry points identified on the DRA, ECP or SWPPP.

Pedestrian routes within the site boundary will be explained during the site induction process showing all secure entrances and exits for both vehicles and pedestrians.

Measures to ensure the site is safe, secure, and presentable at all times will include but will not be limited to the following:

- Clear access routes with appropriate signposting.
- Segregation and regular removal of waste.
- Pursuant to Cirks Construction Inc.’s HSE, Cal and Federal OSHA requirements the site will be kept clean at all times.
- Inspections throughout the day will be conducted by site superintendent
- Visual inspections of plant, equipment and material storage areas for leaks and spills.
- Toilet, changing and drying facilities will be kept clean.

Emissions Air Quality
Air quality effects will be controlled through the selection of appropriate plant and machinery, careful planning, and effective site management. Planning will take into consideration local topography, prevailing wind patterns and local sensitive receptors.
The principle of prevention and mitigation is to be used to identify if the activity can be achieved minimizing dust and air pollution. Where possible best practice guidance will be applied having made consideration to the guidance notes set out in the Best Practice Guide Dust & Plant Emissions and where reasonably possible best practice will be applied and followed.

**Haul Roads**
- Hard standing surfaces will be provided at site entrances and exits.
- Site haul roads will be regularly maintained and kept clean.
- To prevent the creation of dust haul areas will be damped down using water sprays and repeated regularly and frequently during dry and / or windy weather.
- Any run-off containing suspended solids will be treated in accordance with the waste water measures.

**Plant and Vehicles**
- All loaded vehicles leaving site with the potential to cause dust will be sheeted.
- Vehicles will not be overloaded.
- Altogether site vehicle engines, generators or site plant engines will be switched off when not in use.
- Equipment will be kept in good repair and regularly maintained in accordance with the manufacturer’s specifications.
- All crushing, grinding, polishing, saw cutting, demo work, concrete batching etc. will be subject where necessary to a permit issued under the Environmental Permitting Regulations.

**Materials Handling and Storage**
- Stockpiles will be located out of the prevailing wind or protected to minimize the potential for dust generation.
- Silos or stockpiles will be sited away from sensitive receptors including watercourses.
- Tipping height of potentially dust generating materials will be minimized.

**Concrete Work**
- Large quantities of concrete, mortar, or similar process where possible will be ready mixed and stored in enclosed / shielded areas to prevent the escape of dust.
- After concrete pours, the surface of the concrete will be kept free of dust and mud until cured.

**Demolition and Crushing**
- During demolition and crushing activities, water for suppression of dust will be used.
- Skips and lose materials will be covered prior to leaving site.
• All crushing will be fitted with dust suppression equipment and this will be used at all times.

Monitoring
Beyond the measures to prevent, control and mitigate the factors affecting air quality, monitoring will be carried out to include regular visual inspections of dust levels undertaken particularly during dry periods and action to reduce levels where necessary.

Waste
In order to minimize the generation of waste and waste disposed to landfill, all spoil, construction wastes will be managed in accordance with the waste hierarchy and relevant regulatory controls.

Measures to reduce excessive quantities of material storage on site will include adopting a just in time approach to material deliveries.

A comprehensive Site Waste Management Plan (SWMP) will be developed as needed as part of Cirks Construction Inc. best practice procedures in as many areas as possible. The SWMP will be updated as the project progresses capturing any changes that may result in differing waste streams and quantities.

The SWMP provides a structure for waste disposal at all stages of the construction project. It helps to identify: Who will be responsible; What type of waste will be generated; How the waste will be managed, reduced, reused, or recycled; How the quantity of waste generated from the project will be measured.

Pollution Control
• All potentially polluting substances will be stored on impermeable surfaces with controlled drainage or at least 50 feet away from storm water sewers, grids, channels, watercourses, and ditches.
• All fuel, chemicals and oils are prohibited from being stored on site.
• All hazardous substances on site will be controlled in accordance with OSHA Regulations
• Refueling of machinery will take place on concrete hard standing with controlled drainage.
• Wheel washing will be undertaken in a designated area.
• Washing out of concrete trucks, hoppers and mixers will take place in areas away from storm water sewers, grids, channels, and watercourses.
• Spill kits will be held on site with a variety of absorbent materials to be used in the event of a spill of fuel, oil, or chemicals.

A Stormwater Pollution Prevention Plan (SWPPP) & the Water Pollution Control Plan is a necessary & a required element on every job site. By knowing the details of the SWPPP & WPCP and how to take action, you can be prepared for most every situation.

Here are some of the most important reasons that Cirks Construction Inc. enforces the SWPPP compliance on every job site:
To ensure that all individuals understand the importance of Best Management Practices (BMP) on construction sites.

Nothing from a project site can leave the site via airborne, street, water, tracking, etc. creating risk of being washed into a storm drain.

To reduce pollution of U.S. waterways.

Reduce potential for fines.

Ensure compliance with the Clean Water Act, and the National Pollution Discharge Elimination System (NPDES).

It’s the law.

**SWPPP & WPCP Basics**

While SWPPP is a crucial program for all job sites, there are many elements that can make it easy to understand.

**What is Pollution?**

- The action of polluting especially by environmental contamination with man-made waste.
- The act of contaminating or polluting including (either intentionality or accidentality) unwanted substances or factors.
- Undesirable state of the natural environment being contaminated with harmful substances as a consequence of human activities.

**Construction Site Pollution**

Waste or debris is generated by every person working on a construction site. If the waste or debris is not contaminated and it is disposed of properly per code and is not disposed of properly, it can become pollution.

Good housekeeping practices will reduce the potential for pollution.

**Examples:**

- Construction Materials
- Chemicals
- Debris
- Trash
- Solids
- Liquids
- Anything other than water

**What is Erosion?**

The process in which, by the action of wind or water, soil particles are displaced or transported.

**What are the types of Erosion?**
• Splash: Raindrop impact, dispersal & mobilization of soil particles
• Sheet: Saturated soil that can create run off water
• Rill: Increase topographic relief, higher run-off velocities, soil incision
• Gully: Concentrated flow created a valley or gully

What is Sedimentation?
• The deposit of erosion.
• When erosion occurs, small spoil particles travel in water or airborne. Sediment is transported and will eventually settle off the job site and into the drains and in our water ways.
• Number one for erosion to happen at all - and minimize the amount of sediment that travels and we have to never allow it to leave the job site or go into a drain.

WHY SWPPP?
An effective SWPPP leads to an effective jobsite. Implementing the SWPPP on a jobsite has many benefits.

Benefits of Prevention Measures?
• Reduce rainfall impacts (Erosion)
• Reduce surface water transfer and travel
• Assist with storm water infiltration
• Reduces & controls sediment
• Eliminates off-site pollution

Protection of Soils
Protection of soils can be established with vegetation. However, other types of cover materials, such as mulches, erosion matting, erosion blankets, etc. can be used. Effectiveness of soil protection is dependent on both the type and density of the specific cover material being utilized.

Water Pollution Control Rules and Regulations
• temporary soil stabilization – don’t allow erosion to happen
• temporary sediment control – don’t allow sediment to leave
• tracking control
• wind erosion control
• material pollution prevention control
• waste management
• non-storm water management
• identifying and handling hazardous substances
• potential dangers to humans and the environment from
• spills and leaks or exposure to toxic or hazardous substances
• water pollution control best management practices (BMPs) deficiencies and corrective actions
• BMPs are required for work activities during the week
  o Fiber Rolls, silt fence, berms, bags, filter paper, dams
• spill prevention and control
• material delivery, storage, use, and disposal
• The WPCDs shall show the following site information:
  • discharge points from the project to offsite storm drain systems or receiving waters
  • tributary areas and drainage patterns across the project area (show using flow arrows) into each onsite stormwater inlet or receiving water
  • tributary areas and drainage patterns to each onsite stormwater inlet, receiving water or discharge point
  • offsite tributary drainage areas that generate run-on to the project
  • temporary onsite drainage(s) to carry concentrated flows
  • drainage patterns and slopes anticipated after major grading activities are completed
  • outline of all areas of existing vegetation, soil cover, or native vegetation that will remain undisturbed during the project
  • outline of all areas of planned soil disturbance (disturbed soil areas, DSAs)
  • known location(s) of contaminated or hazardous soils
  • any potential non-stormwater discharges and activities, such as dewatering operations, concrete saw-cutting or coring, pressure washing, waterline flushing, diversions, cofferdams, and vehicle and equipment cleaning. If operations can’t be located on the WPCDs, a narrative description is provided.

Checklist of Actions All Workers Should Consider:

➢ Preserve existing vegetation
➢ Use seeding or mulching to protect soil surface Provide temporary stabilization of exposed areas
➢ Use of spray water to reduce dust and wind erosion
➢ Sweep sediment from paved areas
➢ Stabilize construction site entrance
➢ Use sediment barriers (hay bales, fiber roles, silt fences, etc.) to keep soil on site
➢ Grading to provide swales or other ponding areas during wet season
➢ Use of terraces or contours
➢ Use of sediment basins
Use of temporary diversions, dikes, or berms
Use of check dams
NO off-site vehicle tracking, etc.
Provide sufficient quantity of covered waste bins to keep site clean
Collect trash daily and provide for regular waste collection
Segregate and recycle waste materials
Locate waste containers away from water bodies
Secondary containment for hazardous materials
NO discharge vehicle or machinery fluids
Allow NO construction material run off
Prevents spills and leaks
Proper inspection and maintenance of vehicles and equipment
Spoil Piles MUST be covered if there is a rain event
No spoil piles left uncovered > 14 days
Concrete Washouts Mandatory – all slurry must be disposed of off site

Three Disposal Containers Are Required
- Recycle
- Debris and Trash
- Hazardous Materials
# SWPPP
## BMP INSPECTION REPORT

### Score
Score 0/0 - 0%

### Part I. General Information - Score (0/0) 0%

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Site Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction stage and completed activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximate area of site that is exposed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weather</strong></td>
<td></td>
<td></td>
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<tr>
<td>Has there been/will there be a storm?</td>
<td></td>
<td></td>
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<tr>
<td>Estimate time since last storm (days or hours):</td>
<td></td>
<td></td>
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<tr>
<td>Rain gauge reading on site (in):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is a &quot;Qualifying Event&quot; predicted or did one occur (i.e., 0.5&quot; rain with 48-hrs or greater between events)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exemption Documentation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Explanation required if inspection could not be conducted) Visual inspections are not required outside of business hours or during dangerous weather conditions such as flooding or electrical storms.</td>
<td></td>
<td></td>
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<tr>
<td><strong>Inspector Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspector Name/Signature:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspector title:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part II. BMP Observations - Score (0/0) 0%

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate if the following items are adequately designed, implemented and effective.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Good Housekeeping for Construction Materials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Inventory of products (excluding materials designed to be outdoors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Stockpiled construction materials not actively in use are covered and bermed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) All chemicals are stored in water tight containers with appropriate secondary containment, or in a completely enclosed storage shed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Construction materials are minimally exposed to precipitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) BMPs preventing the off-site tracking of materials are implemented and properly effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Good Housekeeping for Waste Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Wash/rinse water and materials are prevented from being disposed into the Storm drain system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Portable toilets are contained to prevent discharge of waste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Sanitation facilities are clean and with no apparent leaks and spills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Equipment is in place to cover waste disposal containers at the end of business day and during rain events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Discharges from waste disposal containers are prevented from discharging to the storm drain system/receiving water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Stockpiled waste material is securely protected from wind and rain if not actively in use</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7) Procedures are in place for addressing hazardous and non-hazardous spills

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8) Appropriate spill response personnel are assigned and trained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Equipment and materials for cleanup of spills is available onsite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) Washout areas (e.g., Concrete) are contained appropriately to prevent discharge or infiltration into the underlying soil</td>
<td></td>
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</tr>
</tbody>
</table>

**Good Housekeeping for Vehicle Storage and Maintenance**

1) Measurements are in place to prevent oil, grease, or fuel from leaking into the ground, Storm drains, or surfaces waters

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) All equipment or vehicles are fueled, maintained, and stored in a designated area with appropriate BMPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Vehicle and equipment leaks are cleaned immediately and disposed of properly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Good Housekeeping for Landscape Materials**

1) Stockpiled landscape materials such as mulches and topsoil are contained and covered when not actively in use

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Erodible landscape material has not been applied 2 days before a forecasted rain event or during an event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Erodible landscape materials are applied at quantities and rates in accordance with manufacturers recommendations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Bagged erodible landscape materials are stored on pallets and covered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Housekeeping for Air Deposition of Site Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Good housekeeping measures are implemented onsite to control the air deposition of site materials and from site operation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Stormwater Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
</tr>
<tr>
<td>1) Non-Stormwater discharges are properly controlled</td>
</tr>
<tr>
<td>2) Vehicles are washed in a manner to prevent non-stormwater discharges to surface waters or drainage systems</td>
</tr>
<tr>
<td>3) Streets are cleaned in a manner to prevent unauthorized non-stormwater discharges to surface water to drainage systems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Erosion Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
</tr>
<tr>
<td>1) Wind erosion controls are effectively implemented</td>
</tr>
<tr>
<td>2) Effective soil cover is provided for disturbed areas inactive (i.e., not scheduled to be disturbed for 14 days) as well as finished slopes, open space, utility backfill, and completed lots</td>
</tr>
<tr>
<td>3) The use of plastic materials is limited in cases when a more sustainable, environmentally friendly alternative exists</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sediment Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question</strong></td>
</tr>
<tr>
<td>1) Perimeter controls are established and effective at controlling erosion and sediment discharges from the site</td>
</tr>
<tr>
<td>2) Entrances no dad exists are stabilized to control erosion and sediment discharges from the site</td>
</tr>
<tr>
<td>3) sediment basins are properly maintained</td>
</tr>
<tr>
<td></td>
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<tr>
<td>---</td>
</tr>
<tr>
<td>4) Linear sediment control along toe of slope, face of slope, and at grade breaks</td>
</tr>
<tr>
<td>5) Limit construction activity to and from site to entrances and exits that employ effective controls to prevent offsite tracking</td>
</tr>
<tr>
<td>6) Ensure all storm drain inlets and perimeter controls, runoff control BMPs and pollutant controls at entrances and exits are maintained and protected from activities that reduce their effectiveness</td>
</tr>
<tr>
<td>7) Inspect all immediate access roads daily</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run-On and Run-Off Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Run-on to the site is effectively managed and directed away from all disturbed areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Are the project SWPPP and BMP plan up to date, available on-site and being properly maintained?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part III. Descriptions of BMP Deficiencies - Score (0/0) 0%

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Repairs must begin within 72 hours of identification and complete repairs as soon as possible</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Part VII. Additional Corrective Actions Required - Score (0/0) 0%

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify additional corrective actions not included with BMP Deficiencies (Part III) above. Note if SWPPP change is required.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PHOTOS - Score (0/0) 0%

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photos:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Contractor Short Service Employee (SSE) Policy**

**Application**  
Short Service Employee (SSE) Policy is applied to project sites specifically where required by contract or signed policy agreement with customer.

**Purpose**  
This Policy ensures that contract personnel with less than six months experience in their company and or new to their job role(s) are identified, supervised, and managed. Company will verify that each employee has the skills and knowledge to perform their task(s) prior to their arrival to the project location. The intent of this policy is to prevent injury or harm to personnel, property, and the environment.

**SSE**  
Any contractor personnel with less than six months service with their present employer and or new to their job role(s) will be considered an SSE. A “Contractor SSE Form” must be completed by the contractor for each individual SSE prior to start of work. All SSE personnel will be required to have a conversation with the Ultimate Work Authority (UWA) or Designee regarding their scope of work, associated risks, and expectations prior to start of work. Contractors will manage their SSEs in alignment with this, or a materially equivalent policy. This policy does not apply to escorted visitors and inspectors on a project location who are not performing regular work.

All SSEs must:
- Attend a location-specific HSE orientation prior to beginning work on location. Applicable contractor and customer HSE Policies shall be discussed during the orientation.
- Be assigned an experienced mentor by the Contractor to assist the contractor personnel during his/her “SSE period.” It is the mentor’s responsibility to closely supervise the assigned SSE and prevent him/her from performing tasks for which he/she is not properly trained.
- Be identifiable by location’s agreed method (e.g., Green Hard Hat, SSE Tape on Hard Hat, etc.).

**Subcontractor SSE Management**  
Contractor will manage their subcontractors in alignment with this policy or a material equivalent. Customer may audit the contractor’s SSE programs as part of a required Pre-Qualification or Contractor HSE Management review process.

**Following are Contractor’s SSE Crew requirements:**  
For purposes of this policy, a “crew” is defined as those contractor employees working at a single location and employed by the same contractor. Any exceptions to these requirements must have approval by the location’s UWA or Designee. If a Variance is sought for an individual or group, Contractor SSE Form shall be completed.

**Crews with 4 persons or less:**
- Single person “crew” cannot be a SSE.
- 2-4 person crews can have only 1 SSE per crew.
Crews with 5 persons or more:
- 5 or more person crews can have < 20% SSEs per crew.

Contractors New to Location:
Contractor personnel who are new to a location must have a conversation with the UWA or their Designee. Based on the conversation, the UWA or Designee has the authority to determine whether the contract employee will or will not be included in the SSE program. If the UWA or Designee determines that the contractor needs to be included in the SSE program, a Contractor SSE Form (Appendix A) shall be completed. Factors to consider include, but are not limited to:
- Job responsibilities/duties from previous assignments, work processes/practices from previous assignments, equipment/tools from previous assignments, competency/training, skill level, and familiarity with co-workers.

Removal from the SSE program
To be removed from SSE status, a contractor employee must exhibit safe behavior for six months and have a general awareness and working knowledge of the contractor’s and Contractor’s SSE. Contractors may recommend a reduction of the six-month requirement based on the employee’s performance and relevant industry experience. This reduction must be approved by the UWA/Designee and documented on Contractor (SSE).

Early Removal or Contractor SSE Variance
Early Removal to SSE Policy can only be granted by the written approval of the location’s UWA/Designee documented on Contractor (SSE) Variance Form.
Mandatory Safety Forms, Permits and Checklists
INCIDENT & INJURY REPORTING

We are here to help you, our subs, the client and the public.

Whether you are supervising a job or performing a trade on a job, or you are working alone as a Service and Maintenance Tech, it is EVERYONE'S responsibility to report incidents and injuries IMMEDIATELY 24/7/365! It is not your decision to determine whether or not an incident or injury is serious enough to report; it is ours. We have to know about these matters as soon as they happen. We want to help you. ALL incidents no matter how minor MUST be reported: Bodily Injury of a KDC worker, sub−contractor or 3rd party, auto accidents, property damage, break ins, vandalism, theft and incidents regarding the public.

DO NOT send an email or a text; MAKE THE CALL IMMEDIATELY until you get a live person! If the injury is life threatening, your first call is always 911.

Northern California Construction Department Emergency Call Tree:
1st Call Stuart Nakutin (714) 400-5023 If unavailable,
2nd Call Delton Carter (916) 216−9227 If unavailable,
3rd Call Carlos Chavez (916) 825−1663 If unavailable,
4th Call Ryan Ferris (916) 825−2062

Southern California & Arizona Construction Department Emergency Call Tree:
1st Call Stuart Nakutin (714) 400-5023 If unavailable,
2nd Call Dave Funkhouser (714) 470-4550 If unavailable,
3rd Call Matt Gable (602) 370−5955 If unavailable,
4th Call Steven Roberts (714) 396-9842 If unavailable,
5th Call Matt Lanza (714) 420-7148

Maintenance Department Emergency Call Tree:
1st Call Stuart Nakutin (714 )400-5023 If unavailable,
2nd Call Pablo Ruiz(SoCal) (714) 313-7434 If unavailable,
3rd Call Jess Murray(Nor Cal) (916) 224-0891 If unavailable,
4th Call Steven Roberts (714) 396-9842 If unavailable,
4th Call Dispatch (714) 685-1845, enter 0

Please program these numbers in your phones. There are no excuses for not being able to get a hold of a live person. It is your responsibility to report these incidents IMMEDIATELY!

Thank you

Stuart Nakutin, CSHP, CSHM, QSP, CESSWI
Corporate Safety Director
KDC Construction, KDC Service and Maintenance
KDC Safety Quick Guidelines
Always Check In and Out with your Job Superintendent
Read & Sign Daily RISK Assessment Everyday

**CCR 1511 (B) - CCR 1510 (a)**
Prior to the presence of employees commencing any work or any activities, workers shall be instructed in the recognition of job site-specific hazards and the procedures for protecting themselves

**Ladder Safety:**

1. Make sure all appropriate manufacturing stickers are present (Know Your Weight)
2. Never use top steps for access (Get a bigger/taller Ladder)
3. No aluminum “A” Frame ladders or “Little Giant”
4. A frame ladders cannot be closed and leaned as extension ladders (i.e. against a wall)
5. Standing on the top step or cap of a ladder is strictly prohibited

**Extension Cords:**

6. Must be maximum of 12 Gauge (heavy duty) cord
7. No Damage, No Frays or splices (Damage to cord)

**Forklift / Equipment Operations:**

8. Must have safety vest on near or around operating equipment (No just high visible t-shirts)
9. Must have a proper license to operate equipment
10. Always watch for exposures (Know Your Surrounding Area)
11. Never raise a load over personnel

**Trenching | Excavation:**

12. Always have Dig Alert markings for utilities (Never assume nothing is underground)
13. Always have a competent person on site per CCR 1541 - The competent person must be able to demonstrate the following: a. the ability to recognize all possible hazards associated with excavation work and to test for soil conditions, cave-in & fall risks, vehicular risks and other hazardous exposures, including testing of atmosphere.
   b. Knowledge of the current safety orders pertaining to excavation and trenching.
   c. The ability to analyze and classify soils.
   d. Knowledge of the design and use of protective systems.
   e. The authority and ability to take prompt corrective action when conditions change.
14. Anything 5’ or greater, there must be cave in protection provided
15. Always have means of exit (Ladder) in trench within no more than 25’.
16. Any potential of a 6ft free fall or more, must have fall prevention/protection

**Aerial LIFTS**

17. Scissor and Boom Lifts
18. All personnel using any lift must be trained
19. All personnel using any lift must wear a connected harness and lanyard
20. All lifts must have a factory-installed attachment point
21. Lifts without attachment points are prohibited and will be removed from job sites
22. Lanyards cannot be attached to the safety rails
23. Feet must remain on lift platforms at all times
24. Must wear Fall Protective Harness (The Right Size)
25. Watch your surroundings while in operation
26. Never climb on rungs or railing

**Concrete / CMU Walls:**

27. Must have rebar (4”x4”) with metal tab Caps when not being used or proper built protection over rebar
28. Always have competent person directing Concrete trucks (Pouring, Boom, Backing in etc.)
29. Must have proper scaffold for CMU Wall construction
30. Always be aware of Silica Exposures while cutting concrete, block etc. (Must use water or HEPA Filter system) Wear Proper PPE (Gloves, Eye protection, mask)

**Scaffolding:**

31. Must have Competent person built/set up Scaffolding
32. Must have Scaffolding Permit
33. Follow all Safety Guidelines when building scaffold
34. Rolling and Fixed Scaffolds - All scaffold with a platform at 72” or higher must have factory supplied safety rails, ladders, and toe boards
35. All scaffolds must have full width platform or planks
36. All fixed scaffolds must be installed and certified by a trained installer.
37. “Surfing or skateboarding” on rolling scaffolds is prohibited
**Crane Lifts:**

38. Must send Crane to Stuart Nakutin 48 Hrs. prior to lift and must be approved
39. Always have competent person directing lift
40. All lift components and rigging must be visually inspected for damage prior to lift
41. No One is allowed in building while crane lift is in operation

**Housekeeping:**

42. Always keep good housekeeping on job AT ALL TIMES – CCR 1513
43. Take the last 10-15 mins a day to pick up Trash and Debris EVERYDAY
44. It includes keeping work areas neat and orderly; maintaining halls and floors free of slip and trip hazards; and removing of waste materials. Effective housekeeping is an ongoing operation: it is not a hit-and-miss cleanup done occasionally. Periodic "panic" cleanups are costly and ineffective in reducing accidents

**PPE - Personal Protective Equipment**

45. Hard hat - no garments may be placed underneath unless approved by manufacturer
46. Boots per KDC policy
47. Hand Protection when risk is present
48. ANZI Z87.1 Safety glasses
49. Full face shields are required for all cutting and grinding
50. Nobody enters the job site in shorts and/or tennis shoes (including owners and delivery drivers)

**SAFETY – PLANS I PERMITS** - Permits Required on KDC Job Sites

51. Scaffold PLAN
52. Crane PLAN
53. Confined Space PERMIT
54. Trenching / Excavation Plan equal to or greater than 5ft.
55. Hot Work PERMIT
**HAND, POWER & POWDER ACTUATED TOOLS**

56. All tools must be clean and in good repair
57. All factory safety guards must be in place
58. Includes 4” grinders
59. All personnel using PATs must have a valid training certification card on their person.
60. No VALID training certification – No Powder Actuated tool use.
61. Powder Actuated Tool Use signs must be posted.

**HIGH HEAT TEMPERATURE CONDITIONS**

62. KDC adheres to the OSHA requirement for water for your employees
63. 2 gallons per day per man must be on-site or in your trucks
64. KDC Does NOT provide drinking water for subcontractors.

**Incident Reporting**

All accidents and unsafe conditions NO MATTER MINOR must be reported immediately to KDC CONSTRUCTION project superintendent.

**SWPPP & ENVIRONMENTAL ISSUES**

- Only rain in the drain
- Any sources of Pollution?
- Chemical Storage
- Debris/Trash
- Vehicle Fluids/Wash
- Facility and grounds maintenance
- Wind – Dispersing soil particles becoming airborne
- Soil particles traveling with water
- Everything on your site must stay on your site
- Entrance(s) maintained and road clean
The checklist represents the required KDC Construction & KDC Service Maintenance exposure control plan which must be followed to prevent the spread of COVID-19 at all KDC Construction worksites because many people with COVID-19 are asymptomatic and can unknowingly spread the disease. Failure to comply with this guidance shall be deemed as creating an unsafe & unhealthy working conditions pursuant to OSHA’s General Duty Clause and may result in OSHA citations and shutting down the construction site.

KDC CONSTRUCTION FIELD CHECKLIST
COVID 19 SAFETY AND HEALTH REMINDERS

1. Temp Screening
2. Disinfecting Job
3. Disinfectant Log
4. Face Coverings required if workers cannot maintain social distancing
5. Hand Sanitizer at entrance of job
6. 6ft social distancing at all times
7. Documentation in Daily Risk Assessment regarding COVID 19 risks
8. KDC COVID 19 Plan Posted
9. CDC Posters
10. 14 Point COVID 19 Checklist Posted
11. COVID 19 Reporting Responsibilities

1. KDC’s Daily Risk Assessments completed outlining COVID 19 as an exposure and the controls that MUST be in place. All workers while working, gathering in a meeting or at lunch time MUST be 6 feet apart (if not feasible, due to the work being performed, face coverings must be worn)
2. KDC’s disinfecting protocol in place and executed at minimum 3 times a day
3. KDC’s Disinfecting Log completed and updated daily and sent to Stuart Nakutin COB every Friday
4. KDC’s daily safety meeting discussing most recent COVID 19 information and preventative measures
5. KDC’s COVID 19 Prevention SOP’s and Program posted at site and CDC Flyer posted
6. KDC ensuring all workers are at least 6 feet apart and cannot share tools, ladders or other equipment
7. KDC superintendent responsible to check workers for symptoms of coronavirus and educate them on COVID 19 prevention measures.
8. Identify “choke points” where workers are forced to stand together, such as hallways, elevators, break areas, and control them so social distancing is maintained.
9. Stagger the trades to reduce density to maintain 6-foot separation social distancing.
10. Discourage workers from using other workers’ phones, desks, offices, work tools, equipment and PPE. To the extent the specialized nature of a tool mandates sharing, the equipment must be cleaned and disinfected before and after use.
12. Post, in areas visible to all workers, required hygiene practices, including not touching face with unwashed hands or with gloves; washing hands often with soap and water for at least 20 seconds; use a hand sanitizer with at least 60% alcohol
13. Cleaning and disinfecting frequently touched objects and surfaces
14. Reminder to cover mouth and nose when coughing or sneezing as well as other hygienic recommendations by the CDC.
15. In a tailgate meeting, inform employees to report if they are sick to their supervisor or if they have a sick family member at home with COVID-19. Each employer shall take action through their individual human resource departments concerning application of CDC social distancing and quarantine procedures
<table>
<thead>
<tr>
<th>Today's Date:</th>
<th>KDC Job #:</th>
<th>Project Name:</th>
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<tbody>
<tr>
<td>KDC Superintendent</td>
<td>KDC PM</td>
<td>Site Address:</td>
</tr>
</tbody>
</table>

### IDENTIFY POTENTIAL KNOWN JOB SITE RISKS / EXPOSURES

**CCR 1511 (B) – CCR 1510 (c) (e)** “Where employees are subject to known job site hazards, such as, flammable liquids and gases, poisons, caustics, harmful plants and animals, toxic materials, confined spaces, etc., they shall be instructed in the recognition of the hazard, in the procedures for protecting themselves from injury...” (b) “Prior to the presence of its employees, the employer shall make a thorough survey of the conditions of the site to determine, so far as practicable, the predictable hazards to employees and the kind and extent of safeguards necessary to prosecute the work in a safe manner in accordance with the relevant parts”.

**Have I Thoroughly Completed My Hazard Assessment Form prior to beginning work? Does it accurately reflect all activity and exposures?**

1. Warning Signs/Barricades to protect public & onsite workers
3. Proof Of Training: Have you asked from subs proof for - Aerial, Forklift and Powder Actuated Tool Licenses, Certificate or Cards prior to beginning work?
4. **Have I completed or sent & received back from sub the required KDC Plans?**
   - Crane (must be submitted to Stuart 48 hrs. in advance of lift)
     - *Have you scheduled DUO video conf with a member of safety team?*
   - Scaffold Plan Completed (Signed by Safety Team & Sub prior to use)
     - *Have you scheduled DUO video conf with a member of safety team?*
   - Rolling Scaffold Plan Completed and signed by safety team & sub comp person prior to use
   - Is your pedestrian Protection Plan Completed
     - *Have you scheduled DUO video conf with a member of safety team?*
   - Hot Work Permit completed by sub (Flame or Sparks being produced) posted in area of work
   - LOTO Plan completed by sub prior to work & documented on DRA
   - Excavation Plan completed by sub comp person prior to work commencing for any work 5ft or deeper
     - *Have you scheduled DUO video conf with safety team?*
   - Annual OSHA Trenching Permit given to superintendent prior to digging for 5ft or deeper by sub?
   - Demolition Plan completed by sub for ANY demo
   - Silica Mngt Plan completed by sub and signed, posted 50ft from work area-correct PPE being worn by subs?
   - All operators of PAT’s have a license on their person? Is sign posted 50ft of work?
   - Do I need to send our sub the Site Specific Fall Prevention Plan?
   - Working in public right of way? *DUO video conf with safety team?*
5. Cranes / All Terrain Reach Lift Hoisting / Lifting
6. Housekeeping Throughout the day – Trash, Tools, Cords, Materials - Inside & Out (Trip & Fall Risks Identified and Prevented)
7. Sanitation – External Washrooms, Trash, Cleanliness, Soap & Towels, including COVID 19 procedures-Temp Screening, Disinfecting & Log, Face Coverings, Social Distancing, Hand Sanitizer, Posters, Limiting Choke Points
8. Any Health Bio or Chemical Hazards
   - Demo Permit Submitted from sub?
   - Silica Mngt & Asbestos Plan submitted by sub?
   - Abatement Report etc....?
   - AQMD issue?
   - Dust Control?
   - Chemical Storage?
9. Material, Chemical, Gas, Storage etc...
10. Impalement Exposures – rebar, copper, lag bolts, protruding PVC etc...
11. Electrical (Temp Power, Cords No Damage, GFCI, LOTO Checklist completed by sub, Powerline Clearance)
12. Trenching & Excavation – USA 811, Annual Trenching Permit from sub?
13. Compliance with HIPP-*If temp is 80> Have I documented & explained 1qrt of cool water, per hr per EE & shade *If temp is 95> have I documented & explained 1qrt of cool water per hr per EE, Shade, Cool-Down Area, Mandatory 5min rest every 2hrs, Emerg SOP’s, Acclimatization for new workers-Frequent communication with workers regarding exposure
14. Traffic Control Onsite Vehicles / Spotters / Public Exposure including parking lots
15. Fire Extinguishers Inspected Monthly, Current Tag, No Damage
16. Tool Safety Inspection? – (Guards in place, electrical safe, good condition)
17. Heavy Equipment – Are workers wearing Class 2 Vests, Back up alarms & O&M
18. Ladder Safety – Use, Condition and required labels – Have you inspected?
19. PPE – Feet, Eyes, Face shield, Hard Hats, High Vis Vest, Hands, Hearing and Respiratory protection (N95/N100)
20. Open Holes 6in > Covered, Secured & Marked
21. Fall Protection / Prevention if 6ft or >
22. SWPPP / Dust Control / Track Out / Dumpsters Covered / Disturbed Soil Areas Covered if exposed 14 or >
23. Scaffolding & Rolling Scaffold Daily Inspection By Comp Person

### NOTES:

- Incident Reporting, Public Protection, Emerg Contacts & HIPP, Silica, Powder Actuated Tool, Laser Signs etc.
- Dust Control?
- Have I thoroughly completed my hazard assessment form prior to beginning work? Does it accurately reflect all activity and exposures?
- Have I completed, or sent, and received back from sub the required KDC plans?
- Have I scheduled DUO video conf with a member of safety team?
<table>
<thead>
<tr>
<th>WHAT ARE WE DOING</th>
<th>EXPOSURES &amp; RISKS</th>
<th>CONTROL – WHAT DO WORKERS NEED TO DO TO AVOID AN INJURY OR INCIDENT</th>
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# How Do I Obtain a 100% Safety Audit

## Checklist Items

<table>
<thead>
<tr>
<th>Checklist Items</th>
<th>YES</th>
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<tbody>
<tr>
<td>Do I Have My KDC Signage?</td>
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<td>Are My Sign In Sheets current?</td>
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<td>Have I Run My Tailgate Meeting Prior to Subs commencing work?</td>
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<td>Have I checked for proper sanitation</td>
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<td>Does it mirror my site?</td>
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<td>☐ Excavation Plan for any work &gt;5 ft.? Annual Trenching Permit for sub?</td>
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<td>☐ Pedestrian Protection Plan</td>
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<td>☐ Emergency Evac Plan</td>
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<td>☐ Demolition &amp; Silica Mngt Plans</td>
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<td>☐ All operators of PAT’s have a license on their person</td>
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<td>☐ Have I checked any worker operating a Boom Lift for their Cert?</td>
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<tr>
<td>☐ Have I checked any worker operating a Forklift for a card on their person?</td>
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<td>Do I Have All Of The Warning Postings To Protect the Public? (Laser/PAT/Silica)</td>
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<td><strong>Heat Illness Prevention Plan</strong></td>
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<td><em>If temp is 80&gt; I have documented &amp; explained 1qrt of cool water, per hr per EE &amp; shade</em></td>
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<td><em>If temp is 95&gt; have I documented &amp; explained 1qrt of cool water per hr EE, Shade, Cool-Down Area, Mandatory 5min rest every 2hrs, Emerg SOP’s, Acclimatization for new workers, Frequent communication with workers regarding exposure</em></td>
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<td>Have I Addressed The Duty Under The Law, to Warn, Protect &amp; Control my Site?</td>
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<td>Have I Conducted A Walkthrough Of My Site Inside And Out For Perimeter &amp; Pedestrian Protection?</td>
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<tr>
<td>Have I Addressed 100% PPE Compliance? – Hardhats (no hoodies, caps, bandannas etc.), Gloves, Class II Vests, Glasses, Face Shields, Respiratory Protection (N95 &amp; N100), Hearing Protection &amp; Footwear</td>
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<tr>
<td>Have I Assessed the Focus Four Exposures?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Electrical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Falls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Struck By</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Caught In Between</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Talked About Scissor Lift Safety? (PFAS 100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Inspected All Ladders And Verified Manufacturing Labels? (No aluminum A Frame)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Inspected The Condition Of All Extension Cords? (No Tape Or Frayed Cords, Prongs and Caps Intact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Addressed The Need For Fall Protection For Work Occurring At 6 ft. Or greater?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is My Site Clean Inside &amp; Outside? Housekeeping?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How Is The Condition Of All Tools On My Site? Guards, Handles, Cords, Etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are There Any Impalement Related Exposures?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Addressed The Need For 100% Compliance With HIPP Triggers At 80 &amp; 95 Degrees?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water, Shade, Rest, Cooldown Area &amp; Emerg Contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I Addressed SWPPP? Did I inspect for track out? Dust Control? Erosion &amp; Sediment Control?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please remember we cannot ENCROACH UPON OR IMPEDE PUBLIC ACCESS, MEANING THE SIDEWALKS, or any areas where the public would walk. PLEASE walk your site to ensure that in NO WAY are we creating a risk or hazard by having our fence posts, feet or stanchions in their right of way.

Include a diagram of the Perimeter/Pedestrian Protection in place in the space

I have placed warning signs so that they are visible to pedestrian/vehicle traffic.

\> The fencing and/or barriers are located to eliminate slip/trip/fall hazards
\> The fencing and/or barriers are sturdy to prevent accidental blow/tip over
\> The feet of fencing and/or barriers are inside jobsite, not impeding pedestrian travel and are visible to the public
\> I have provided proper access around my site to include ADA access, barricaded walkways and pass-throughs if needed

Note: If site needs change, a new Perimeter/Pedestrian Plan will be completed.

I have verified that a thorough walkthrough of my site has been completed and will be inspected on a daily basis to assure integrity of the perimeter and pedestrian protection that has been installed.

Superintendent Signature _________________________________ Date __________________________

Safety Signature _________________________________ Date __________________________
# Construction Site Emergency Evacuation Plan

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Site Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supt. Name:</th>
<th>Supt. Phone:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Police:</th>
<th>911</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Fire:</th>
<th>911</th>
</tr>
</thead>
</table>

After calling 911, use Call Tree Notification

---

Include a diagram of site exit routes in the space below:

---

Be sure to mark Fire Extinguisher Location(s)
# Loading/Unloading Checklist

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the truck/trailer correctly positioned and level?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the wheel chocks in place?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any damage to the truck or trailer?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the appropriate people and equipment available for loading/unloading?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the product require special lifts or a crane to handle the load?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are load straps in good condition; not frayed, worn or torn?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Loading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the driver been moved to the safe zone?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all helpers in sight of the forklift/crane operator?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the load restraints suitable to secure the load?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there an adequate number of tie downs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the total weight of the cargo exceed the truck’s carrying capacity?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the load well packed in the appropriate packaging?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have all required documentation for load?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the driver double-checked all restraints for specific load requirements?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unloading</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has any freight moved while in transit?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all items effectively secured to a pallet, cradle or flatbed trailer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are top-loaded items stable?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Could any freight move or become unstable when the load restraints are removed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the driver been moved to the safe zone?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all helpers in sight of the forklift/crane operator?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**TRENCHING/EXCAVATION SAFETY CHECKLIST**

<table>
<thead>
<tr>
<th>Site Name/Location:</th>
<th>Date:</th>
<th>Time:</th>
<th>Competent Person:</th>
<th>Job #:</th>
<th>Annual Permit</th>
<th>YES/NO</th>
<th>Depth:</th>
<th>Width:</th>
<th>Length:</th>
<th>Soil Type:</th>
<th>USA Ticket #:</th>
</tr>
</thead>
</table>

**General Inspection**

<table>
<thead>
<tr>
<th>Hazardous Conditions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturated soil/standing or seeping water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulging walls?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid drying/shrinkage?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration from equipment/traffic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cracked or fissured walls?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undercutting?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor heaving?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super imposed loads?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed utilities?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmospheric testing required?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structures adjacent to trench/excavation?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trees or roots in the work area?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Shoring/Sloping/Benching**

<table>
<thead>
<tr>
<th>Shoring (Tabulated Data On Site)</th>
<th>X</th>
<th>Sloping</th>
<th>X</th>
<th>Benching</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trench Shields</td>
<td></td>
<td>Class A ¾:1 53°</td>
<td></td>
<td>Type A &amp; B soils benched? (NO Type C)</td>
<td></td>
</tr>
<tr>
<td>Speed Shores</td>
<td></td>
<td>Class B 1:1 45°</td>
<td></td>
<td>Max. Height of Type B soil bench 4 feet?</td>
<td></td>
</tr>
<tr>
<td>Plywood Sheeting*</td>
<td></td>
<td>Class C 1-1/2:1 34°</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Color Code For Utility Marking Based on ANSI Z-53.1**

<table>
<thead>
<tr>
<th>Proposed Excavation</th>
<th>Color Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Power Lines, Conduits, Lighting Cables</td>
<td>RED</td>
</tr>
<tr>
<td>Potable Water</td>
<td>BLUE</td>
</tr>
<tr>
<td>Gas, Steam, Condensate, Oil Compressed Air</td>
<td>YELLOW</td>
</tr>
<tr>
<td>Telecommunications, Alarm or Signal Line</td>
<td>ORANGE</td>
</tr>
<tr>
<td>Temporary Survey Markings</td>
<td>PINK</td>
</tr>
<tr>
<td>Sewer and Storm Drains</td>
<td>GREEN</td>
</tr>
<tr>
<td>Reclaimed Water, Irrigation, Chilled Lines</td>
<td>PURPLE</td>
</tr>
<tr>
<td>Other</td>
<td>LIGHT BLUE</td>
</tr>
</tbody>
</table>

**Personnel Entering Trench/Excavation (List)**

- 
- 
- 

I certify that this form was completed by the Competent Person daily (at a minimum) or when site conditions change. The completion of this form is mandatory prior to work in any excavations or trenches 5 feet in depth or greater.

<table>
<thead>
<tr>
<th>Competent Person Representative:</th>
<th>Date:</th>
</tr>
</thead>
</table>
DANGER
OPEN TRENCH
## Demolition Sub Checklist

**Jobsite Address:** ____________________________  **Sub:** ____________________________

**Completed By:** ____________________________  **Date:** ____________________________

<table>
<thead>
<tr>
<th>Checklist Items</th>
<th>Needs to be Addressed</th>
<th>Completed</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent Supervisor, experienced in demolition work been appointed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Permit?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity Notification Form Submitted?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specs/ work plans for building approved?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any asbestos, lead or PCB’s on site?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check local ordinance for Noise, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check utilities, electrical, gas, telecom, &amp; water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are they above or below ground? Have they been removed or rendered safe?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reviewed KDC Site Safety Rules with all onsite employees?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWPPP – storm water, best Mgmt. practices?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Integrity of Building – Safe to Enter? Safe during demo?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are any floors in danger of being overloaded?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall protection issues been addressed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather conditions addressed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any animal or insect issues?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all onsite employees sufficiently trained to complete the work safely?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all onsite employees wearing the appropriate PPE for the demolition tasks?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tools and equipment inspected and operable?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced equipment operator authorized utilizing experienced spotter/rigger?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment outfitted with an overhead canopy to prevent debris from striking operator?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firefighting equipment on site and readily accessible?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is watering or air evacuation method being utilized to minimize dust generation?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All saw cuts in slab or tile are to be completed with a wet or dustless method.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side doors/windows are to remain open</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum 30 inch industrial fan(s) to control dust flow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative air machine type ACSI Model #A10W4961</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All demo &amp; jack hammer operations shall use directional fans, negative air machine and a ventilation system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have all vents, registers, equipment, machinery, penetrations covered with plastic and taped tight?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the loads of debris been covered to prevent migration?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## FALL HAZARD EVALUATION

<table>
<thead>
<tr>
<th>Designation:</th>
<th>Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Assessed:</td>
<td>Related Operating Procedures Reviewed:</td>
</tr>
<tr>
<td></td>
<td>Yes  No</td>
</tr>
</tbody>
</table>

### FALL HAZARD ASSESSMENT CHECKLIST

- Can an employee enter the area without restriction and perform work?  
  - Yes  No
- Are fall prevention systems such as cages, guardrails, toeboards, man lifts in place?  
  - Yes  No
- Have slipping and tripping hazards been removed or controlled?  
  - Yes  No
- Have visual warnings of fall hazards been installed?  
  - Yes  No
- Can the distance a worker could fall be reduced by installing platforms, nets etc.?  
  - Yes  No
- Are any permanently installed floor coverings, gratings, hatches, or doors missing?  
  - Yes  No
- Does the location contain any other recognized safety and or health hazards?  
  - Yes  No
- Is the space designated as a Permit Required Confined Space?  
  - Yes  No
- Have anchor points been designated and load tested?  
  - Yes  No

### Assessment Information:  (indicate specifics with initials)

<table>
<thead>
<tr>
<th>Initial</th>
<th>Hazard</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total potential fall distance:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of workers involved:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequency of task:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Obtainable anchor point strength:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required anchor point strength: (not less than 5000 lbs)</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Requirements:

- **Potential environmental conditions that could impact safety:**

<table>
<thead>
<tr>
<th>Initial</th>
<th>Condition</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

- **Possible required structural alterations:**

<table>
<thead>
<tr>
<th>Initial</th>
<th>Alteration</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- **Possible task modification that may be required:**

<table>
<thead>
<tr>
<th>Initial</th>
<th>Task</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
* Breakdown of vertical and horizontal movement: (sketch out work task):

* Training requirements:

<table>
<thead>
<tr>
<th>Initial</th>
<th>Requirement</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Personal protective equipment required:

<table>
<thead>
<tr>
<th>Initials</th>
<th>Requirement</th>
<th>Remarks/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

☐ Approved

**AUTHORIZATION**

I acknowledge that I have conducted a Fall Hazard Assessment of the above designated location and have detailed the findings of the assessment on this form.

* Further detailed on attachment:
  ☐ Yes  ☐ No

Name: ____________________________  Signature: ____________________________

Title: ____________________________  Date: ____________  Time: ____________

**ASSESSMENT FORM RETENTION INFORMATION**

Permanent Retention File: ____________________________

Location: ____________________________  ☐ Yes  ☐ No

Date Filed: ____________________________  Filed By: ____________________________
## Fall Protection Equipment Inspection Checklist

Serial Number: ____________________ Equipment Type: ____________________

Date Inspected: ________________ Inspected By: ________________________

<table>
<thead>
<tr>
<th>Checklist</th>
<th>YES</th>
<th>NO</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body Harness in good condition and inspected per manufacturer?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing for frays, cuts, tears, broken fibers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Is ladder safety device in good condition and operating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lanyard in good condition?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing and shock absorber for frays, cuts, tears, broken fibers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rope or Cable on lifeline in good condition?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing or cable for frays, cuts, tears, broken fibers or wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Retracting Lanyard in good condition and inspected per manufacturer?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing or cable for frays, cuts, tears, broken fibers or wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anchorage Devices, slings, carabiners, in good condition?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing for frays, cuts, tears, broken fibers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tripod, Winch and Boatswain’s Chair in good condition?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect hardware for cracks and working condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect webbing or cable for frays, cuts, tears, broken fibers and wires</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspect labels – are they intact and legible</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** IF EQUIPMENT IS FOUND NOT TO BE IN GOOD OPERATING CONDITION, REPORT IT TO YOUR SUPERVISOR. SEND IT BACK TO THE SHOP FOR REPAIRS OR REPLACEMENT. IF IN DOUBT, TAKE A PICTURE AND SEND TO STUART OR CINDY FOR VERIFICATION.
# FULL BODY HARNESS

## Inspection Checklist / Log

**Harness Model:**

**Serial Number:**

**Comments:**

<table>
<thead>
<tr>
<th>GENERAL FACTORS</th>
<th>ACCEPTED / REJECTED</th>
<th>SUPPORTIVE DETAILS OR COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) <strong>Hardware:</strong> (Includes D-rings, buckles, keepers and back pads) Inspect for damage, distortion, sharp edges, burrs, cracks and corrosion.</td>
<td>☐ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ REJECTED</td>
<td></td>
</tr>
<tr>
<td>2.) <strong>Webbing:</strong> Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration.</td>
<td>☐ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ REJECTED</td>
<td></td>
</tr>
<tr>
<td>3.) <strong>Stitching:</strong> Inspect for pulled or cut stitches.</td>
<td>☐ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ REJECTED</td>
<td></td>
</tr>
<tr>
<td>4.) <strong>Labels:</strong> Inspect, make certain all labels are securely held in place and legible.</td>
<td>☐ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ REJECTED</td>
<td></td>
</tr>
</tbody>
</table>

## OVERALL DISPOSITION

☐ ACCEPTED  ☐ REJECTED

**INSPECTED BY:**

**DATE INSPECTED:**
**LANYARDS**

**Inspection Checklist / Log**

Lanyard Model:  
Serial Number:  
Comments:  

<table>
<thead>
<tr>
<th>GENERAL FACTORS</th>
<th>ACCEPTED / REJECTED</th>
<th>SUPPORTIVE DETAILS OR COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) <strong>Hardware</strong>: (Includes snap hooks, carabiners, adjusters, keepers, thimbles and D-rings). Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion and proper operation.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>2.) <strong>Webbing</strong>: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>3.) <strong>Stitching</strong>: Inspect for pulled or cut stitches.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>4.) <strong>Synthetic Rope</strong>: Inspect for pulled or cut yarns, burns, abrasion, knots, excessive soiling and discoloration.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>5.) <strong>Wire Rope</strong>: Inspect for broken wires, corrosion, kinks and separation of strands.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>6.) <strong>Energy Absorbing Component</strong>: Inspect for elongation, tears and excessive soiling.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
<tr>
<td>7.) <strong>Labels</strong>: Make certain all labels are securely held in place and legible.</td>
<td>□ ACCEPTED</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ REJECTED</td>
<td></td>
</tr>
</tbody>
</table>

**OVERALL DISPOSITION**  
□ ACCEPTED  
□ REJECTED  

INSPECTED BY:               INSPECTED BY:
## Inspection Checklist / Log

**Hook / Carabiner Model:**

**Manufacture Date:**

**Serial Number:** __________________

**Lot Number:**

**Purchase Date:**

**Comments:** __________________

### GENERAL FACTORS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Accepted / Rejected</th>
<th>Supportive Details or Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Physical Damage:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.) Excessive Corrosion:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.) Markings:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### OVERALL DISPOSITION

- **Accepted**
- **Rejected**

**INSPECTED BY:** __________________

**DATE INSPECTED:** __________________
## Inspection Checklist / Log

Anchorage Plate Model:  
Serial Number:  
Comments:

### Anchorage System

**Manufacture Date:**

**Lot Number:**

**Purchase Date:**

<table>
<thead>
<tr>
<th>GENERAL FACTORS</th>
<th>ACCEPTED / REJECTED</th>
<th>SUPPORTIVE DETAILS OR COMMENTS</th>
</tr>
</thead>
</table>
| 1. **Physical Damage:** Inspect for cracks, sharp edges, burrs and deformities. | ☐ ACCEPTED  
☐ REJECTED | |
| 2. **Excessive Corrosion:** Inspect for corrosion which effects the operation and/or strength. | ☐ ACCEPTED  
☐ REJECTED | |
| 3. **Fasteners:** Inspect for corrosion, tightness, damage and distortion. If welded, inspect weld for corrosion, cracks and damage. | ☐ ACCEPTED  
☐ REJECTED | |
| 4. **Markings:** Inspect, make sure certain marking(s) are legible. | ☐ ACCEPTED  
☐ REJECTED  
☐ ACCEPTED  
☐ REJECTED  
☐ ACCEPTED  
☐ REJECTED | |

### OVERALL DISPOSITION

☐ ACCEPTED  
☐ REJECTED

**INSPECTED BY:**

**DATE INSPECTED:**
<table>
<thead>
<tr>
<th>GENERAL FACTORS</th>
<th>ACCEPTED / REJECTED</th>
<th>SUPPORTIVE DETAILS OR COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Impact Indicator: Inspect indicator for activation (rupture of red stitching, elongated indicator, etc.)</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>2.) Screws / Fasteners: Inspect for damage and make certain all screws and fasteners are tight.</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>3.) Housing: Inspect for distortion, cracks and other damage. Inspect anchoring loop for distortion and damage.</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>4.) Lifeline: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and discoloration, broken wires (see impact indicator section).</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>5.) Locking Action: Inspect for proper lockup of brake mechanism.</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>6.) Retraction/Extension: Inspect spring tension by pulling lifeline out fully and allowing it to retract fully (no slack).</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>7.) Hooks / Carabiners: Inspect for physical damage, corrosion, proper operation and markings (see separate checklist/log for hooks and carabiners).</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>8.) Reserve Lifeline: Inspect reserve lifeline retention systems for deployment.</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
<tr>
<td>9.) Labels: Inspect, make certain all labels are securely held in place and legible.</td>
<td>□ ACCEPTED □ REJECTED</td>
<td></td>
</tr>
</tbody>
</table>

OVERALL DISPOSITION □ ACCEPTED □ REJECTED

INSPECTED BY: DATE 

INSPECTED:
FALL PROTECTION WORK PLAN

Contractor: Date:

Jobsite Location: Job Number:

Training and Competent Person

Competent Person Name: 
CREDENTIALS OF COMPETENT PERSON: Attach any training and certifications to this plan.
Training of Personnel: Attach any training and certifications to this plan.

Fall Hazard Identification

<table>
<thead>
<tr>
<th>Open Sided Walking/Working Surfaces</th>
<th>Roof Openings (Skylights, HVAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 6 Feet of a Roof or Floor Edge</td>
<td>Wall Openings (Stairwells)</td>
</tr>
<tr>
<td>Floor Openings</td>
<td>Trenches/Excavations</td>
</tr>
</tbody>
</table>

Protection Methods

<table>
<thead>
<tr>
<th>Guardrail System</th>
<th>Positioning Device System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning Line</td>
<td>Horizontal Life Lines</td>
</tr>
<tr>
<td>Warning Line with Safety Monitor</td>
<td>Covers Secured and Marked</td>
</tr>
<tr>
<td>Catch Platform</td>
<td>Safety Watch System</td>
</tr>
<tr>
<td>Safety Net</td>
<td>Anchorage Points 5000 lbs.</td>
</tr>
<tr>
<td>Personal Fall Arrest System</td>
<td>Controlled Access Zone</td>
</tr>
<tr>
<td>Personal Fall Restraint System</td>
<td>Vertical Life Line &amp; Rope Grab</td>
</tr>
</tbody>
</table>

Other Methods of Fall Protection

| Scissor Lift (Harness/lanyard required) | Boom Lift (Harness/lanyard required) |
| Scaffold with guardrail | Other: |
| Forklift with man basket | Other: |

Fall Protection Daily Inspection

| Full Body Harness | Ropes and Cables |
| Lanyards | Connecting Devices & Anchorages |

Area Protection

| Will Area be taped off to protect other workers? | Area coned off to protect workers? |

Tools and Materials

| How will tools be secured? |
| How will materials be secured? |

Contractor Representative: Date:
DANGER
FALL PROTECTION REQUIRED BEYOND THIS POINT
## SCAFFOLD PLAN

<table>
<thead>
<tr>
<th>Contractor Erecting Scaffold:</th>
<th>Date of Erection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffold Use:</td>
<td>Date of Dismantling:</td>
</tr>
</tbody>
</table>

### Training and Competent Person

<table>
<thead>
<tr>
<th>Trade(s) utilizing scaffold:</th>
<th>Competent Person Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credential of Competent Person:</td>
<td>Attach any training and certifications to this plan.</td>
</tr>
<tr>
<td>Name(s) of scaffold erection crew:</td>
<td></td>
</tr>
</tbody>
</table>

### Basic Scaffold Information

<table>
<thead>
<tr>
<th>Type of scaffold to be erected, (swing stage, welded frame, walkthrough, etc.)</th>
<th>Spacing between frames with bracing installed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of scaffold frames:</td>
<td>Height of completed scaffold</td>
</tr>
<tr>
<td>Working load capacity</td>
<td>Will the scaffold be covered? With what?</td>
</tr>
</tbody>
</table>

### Tipping Restraint

<table>
<thead>
<tr>
<th>Mfgr’s. tipping moment of scaffold</th>
<th>Vertical spacing of ties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchorage attachment</td>
<td>Horizontal spacing of ties</td>
</tr>
<tr>
<td>Type of ties</td>
<td></td>
</tr>
</tbody>
</table>

### Planking

<table>
<thead>
<tr>
<th>Type of planking</th>
<th>How will planks be secured?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of planks</td>
<td>How will planks be loaded?</td>
</tr>
<tr>
<td>Levels of planking</td>
<td>Will toe-boards be installed?</td>
</tr>
</tbody>
</table>

### Access

<table>
<thead>
<tr>
<th>How many access points?</th>
<th>10 feet away from power lines?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any bridges or ramp access?</td>
<td>Area blocked from public access?</td>
</tr>
</tbody>
</table>

### Fall Protection

<table>
<thead>
<tr>
<th>Using PFAS while erecting or dismantling?</th>
<th>Area taped off while erecting or dismantling?</th>
</tr>
</thead>
</table>

### Footing and Foundation

<table>
<thead>
<tr>
<th>Type of footing (baseplates and mudsills)</th>
<th>Baseplates secured to mudsills?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension of mudsills</td>
<td>Outriggers being used?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contractor Representative:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Rolling Scaffold Review Checklist

<table>
<thead>
<tr>
<th>CHECKLIST</th>
<th>YES</th>
<th>NO</th>
<th>ACTION / COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent person in charge of erection and inspection?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capable of supporting 4 times the maximum intended load?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold is plumb, square and level?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor is solid, level and clear of holes / hazards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outriggers used when height is 3x the least base dimension?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold is properly braced with braces properly attached?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open sides protected by guardrails, mid-rails and toe boards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platform fully planked with no more than a 1” gap?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using scaffold grade planks / platform in good condition - no cracks, knots, splits or damage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front edge of platform not more than 14 inches from work?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel locks / brakes in good condition?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 2 wheels lock?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw Jacks adjusted properly if required?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All scaffolding components match and are of the same type?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe access available to working platforms?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access does not require climbing over rails?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical clearances meet OSHA standards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surfing prohibited?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all braces, sections and clamps secured and pinned?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platforms free of debris / housekeeping?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold free of makeshift devices or ladders to increase height?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are employees working around the scaffold wearing hardhats?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# SILICA EXPOSURE MANAGEMENT PLAN

<table>
<thead>
<tr>
<th>Contractor:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobsite Location:</td>
<td>Job Number:</td>
</tr>
</tbody>
</table>

## Competent Person & Training

<table>
<thead>
<tr>
<th>Competent Person Name:</th>
<th>Credentials of Competent Person:</th>
<th>Attach all training and certifications to this plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Training of Personnel:</td>
<td>Attach all training and certifications to this plan</td>
</tr>
</tbody>
</table>

## Define Work Task(s)

<table>
<thead>
<tr>
<th>Blasting</th>
<th>Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipping</td>
<td>Grinding</td>
</tr>
<tr>
<td>Crushing</td>
<td>Mixing</td>
</tr>
<tr>
<td>Cutting</td>
<td>Polishing</td>
</tr>
<tr>
<td>Demolition</td>
<td>Sanding</td>
</tr>
</tbody>
</table>

## Risk Evaluation/Protection

<table>
<thead>
<tr>
<th>Is there silica on the jobsite that could be released into the air?</th>
<th>Conduct air monitoring to determine airborne exposure levels are below PEL of 50 ug/m³, 8 hr. TWA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Data Sheet Reviewed?</th>
<th>Have controls for suppression or collection of silica dust been determined?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Posting Signage to warn others of hazard?</th>
<th>Will area be taped off to prevent access to others?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

## Method of Exposure Control/Table 1

<table>
<thead>
<tr>
<th>Using a silica substitute? Name Type:</th>
<th>Using local exhaust ventilation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Provide test results demonstrating below PEL?</th>
<th>Using dust collection system?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Using water to wet dust at the point of generation?</th>
<th>Using water at the blade?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

## Personal Protective Equipment Required

<table>
<thead>
<tr>
<th>Body Protection?</th>
<th>YES NO</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Eye/Face Protection?</th>
<th>YES NO</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Respiratory Protection? Name Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
</tr>
</tbody>
</table>

## Personal Hygiene

<table>
<thead>
<tr>
<th>Disposable Or Change Clothing?</th>
<th>No Eating In Area?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Worksite Shower?</th>
<th>Wash Hands &amp; Face Before Eating, Drinking, Smoking?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES NO</td>
<td>YES NO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contractor Representative:</th>
<th>Date:</th>
</tr>
</thead>
</table>
AUTHORIZED PERSONNEL ONLY

RESPIRABLE CRYSTALLINE SILICA

MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS

WEAR RESPIRATORY PROTECTION

IN THIS AREA
# CRANE LIFT PLAN

<table>
<thead>
<tr>
<th>Contractor:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of Lift:</td>
<td>Date of Proposed Lift:</td>
</tr>
<tr>
<td>Items Being Lifted:</td>
<td>Items Being Lifted:</td>
</tr>
</tbody>
</table>

## Crane Information

<table>
<thead>
<tr>
<th>Crane Manufacturer</th>
<th>Max. Boom Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No.</td>
<td>Max Load Radius</td>
</tr>
<tr>
<td>Serial No.</td>
<td>Outriggers</td>
</tr>
<tr>
<td>Corresponding Boom Angle</td>
<td>Tires</td>
</tr>
</tbody>
</table>

## Load Information (Attach copy of load chart)

<table>
<thead>
<tr>
<th>Load Weight</th>
<th>Jib Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Weight</td>
<td>Jib Ball Weight</td>
</tr>
<tr>
<td>Spreader Weight</td>
<td>Hoist Line Weight</td>
</tr>
<tr>
<td>Rigging Weight</td>
<td><strong>Total Load</strong></td>
</tr>
</tbody>
</table>

## Boom Information

<table>
<thead>
<tr>
<th>Boom Length</th>
<th>Loaded Boom Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height From Ground</td>
<td>Load Radius Feet</td>
</tr>
</tbody>
</table>

## Lift Information

<table>
<thead>
<tr>
<th>On Boom</th>
<th>Over Front Lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Jib</td>
<td>Over Rear Lb.</td>
</tr>
</tbody>
</table>

## Rated Capacity

| Capacity Margin (Total Load ÷ Rated Capacity) x 100 Note: Must achieve 70% or less capacity. Attach Copy Of Load Chart |

## Hazard Identification

<table>
<thead>
<tr>
<th>Underground Utilities?</th>
<th>Soil Conditions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt or Concrete?</td>
<td>Traffic Control?</td>
</tr>
<tr>
<td>Overhead Utilities?</td>
<td>Fire/Explosion Hazards?</td>
</tr>
<tr>
<td>Trees/Bldgs. etc... Near?</td>
<td>Building Evacuated?</td>
</tr>
</tbody>
</table>

## Area Protection

| Will Blocking or Crane Mats Be Used? | Area taped off during lift? (Dead Zone) |

## Operator / Rigger / Signal Information

<table>
<thead>
<tr>
<th>Operator Name</th>
<th>NCCO Lic #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigger(s) Name(s)</td>
<td>PIC Conducting Inspection</td>
</tr>
<tr>
<td>Type of rigging to be used Must list the type &amp; kind of rigging, shackles, hooks, straps, slings etc…</td>
<td>PIC Conducting Pre-Lift Safety Meeting</td>
</tr>
<tr>
<td>Signalman Name</td>
<td>Type Of Communication to operator – Voice, Radio, Hand Signals</td>
</tr>
</tbody>
</table>

## Pre-Lift Meeting/Attendees

<table>
<thead>
<tr>
<th>Contractor Representative:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>KDC Representative:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

*Note: Please attach copy of operator’s license, load chart specifically highlighted for this lift, and annual crane cert. A pre-lift meeting shall be conducted prior to lift. If flying load onto roof, all personnel must exit building during lift operations.*
Confined Space Plan

<table>
<thead>
<tr>
<th>Job Number:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor/Subcontractor:</td>
<td>Location:</td>
</tr>
<tr>
<td>Attendant:</td>
<td>Entrant(s):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Checklist Items</th>
<th>Yes</th>
<th>No</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has site been evaluated for confined spaces by a designated competent person?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have all permit-required confined spaces (PRCS) been identified with a sign and permit?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are confined spaces re-evaluated whenever they or their characteristics change?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the entrants, attendants, supervisors understanding of their duties and trained?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the confined space hazards been identified?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Engulfment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Oxygen Deficient or Enrichment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• LEL (lower explosive limit)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Limited means of access and egress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hydrogen Sulfide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Contain Energized Systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other hazards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there a written PRCS program?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there a written plan for rescue and emergencies?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Rescue team trained within 12 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Retrieval system available on site?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Using outside resources? (Fire Dept.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notification to all affected persons on site?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Authorized Representative:                                            Date:
# HOT WORK PLAN

**(Must be completed prior to start of operations)**

<table>
<thead>
<tr>
<th>Contractor:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobsite Location:</td>
<td>Job Number:</td>
</tr>
</tbody>
</table>

## Dates and Hours of Work

<table>
<thead>
<tr>
<th>Date(s):</th>
<th>From:</th>
<th>To:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours:</td>
<td>From: AM/PM</td>
<td>To: AM/PM</td>
</tr>
</tbody>
</table>

## Detail of Work Being Performed

<table>
<thead>
<tr>
<th>Welding</th>
<th>Sweating In Copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazing</td>
<td>Torching</td>
</tr>
<tr>
<td>Cutting Metal</td>
<td>Other</td>
</tr>
</tbody>
</table>

## Fire Prevention

<table>
<thead>
<tr>
<th>Adequate Water Supply</th>
<th>Fire Watch 30 Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Extinguisher (ABC)</td>
<td>Remove Flammable or Combustible Material</td>
</tr>
<tr>
<td>Area Clear of Flammable or Combustible Liquids, Gases and Vapors</td>
<td>Floor &amp; Walls Protected from Sparks and Flames (Flash Screens, Curtains, etc)</td>
</tr>
</tbody>
</table>

## Protection of Area

<table>
<thead>
<tr>
<th>Barricades</th>
<th>Fire Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning Signs</td>
<td>Other:</td>
</tr>
</tbody>
</table>

## Tools and Materials

<table>
<thead>
<tr>
<th>What tool will be used?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What materials will be used?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contractor Representative:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>KDC Superintendent:</td>
<td>Date:</td>
</tr>
</tbody>
</table>

**HOT WORK PERMIT MUST BE POSTED NEAR WORK AREA FOR DURATION OF WORK BEING PERFORMED.**
### Lockout/Tagout Checklist

Date Inspected: ___________________ Inspected By: ___________________

<table>
<thead>
<tr>
<th>CHECKLIST</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do I have an Energy Control Program?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If an energy source cannot be locked out, do I have a tagout system in place?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all machines/equipment capable of accepting lockout device?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When a tagout device is used in place of a lockout device, is it truly capable of being locked out?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do I have a procedure in place for controlling hazardous energy with specific requirements for securing machines, placement, transfer and removal of lockout devices as well as regularly testing of locked machinery/equipment?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do procedures properly outline the scope, purpose, responsibility, authorization, rules, and techniques to be utilized for the control of hazardous energy as well as means to enforce compliance?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are specific procedural steps for shutting down, isolating, blocking, and securing machines/equipment to control hazardous energy in place?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is an authorized employee assigned and responsible for removing and transferring lockout tagout devices?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do requirements exist for testing a machine/equipment to determine and confirm effectiveness and efficiency of lockout/tagout procedure? Test Before You Touch!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have I provided all of the necessary equipment for isolating dangerous machinery/equipment including: locks, tags, chains, wedges, key blocks, adapter pins, or self-locking fasteners?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do all lockout tags provide clear legends such as DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all lockout devices and tags designed to withstand the environment and strong enough to prevent removal?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are lockout devices and tags have my name and phone number?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all lockout devices substantial enough to prevent removal without the use of excessive force such as bolt cutters, etc.?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has each authorized employee received training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is everyone notified and aware of the application and removal of lockout or tagout devices?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WATER.
REST.
SHADE.

The work can’t get done without them.

A HEAT SAFETY FACT SHEET
Two types of heat illness:

**Heat Exhaustion**
- Dizziness
- Headache
- Sweaty skin
- Fast heart beat
- Nausea, vomiting
- Weakness
- Cramps

**Heat Stroke**
- Red, hot, dry skin
- High temperature
- Confusion
- Fainting
- Convulsions

*Heat kills – get help right away!*
Stay safe and healthy!

Drink water even if you aren’t thirsty — every 15 minutes

Watch out for each other

Wear a hat and light-colored clothing

Know where you are working in case you need to call 911

Rest in the shade
Heat illness can be prevented!

- **Water**
- **Shade and Rest**
- **Training**
- **Emergency Plan**

If you have questions, call OSHA.
It’s confidential. We can help!
1-800-321-OSHA (6742)  
TTY 1-877-889-5627  
www.osha.gov
JOBSITE CLEANING LOG

<table>
<thead>
<tr>
<th>WHAT WAS CLEANED</th>
<th>DATE CLEANED</th>
<th>TIME CLEANED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

QUESTIONS/CONCERNS: Please contact Stuart Nakutin
HAND WASHING REQUIRED PRIOR TO ENTERING JOBSITE