Campbell Companies

Employee Safety Manual

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Safety Health & Loss Prevention Policy

The safety of Campbell Companies associates, and customers is always the first consideration in all aspects of our business. The ongoing condition of zero accidents and injuries is our normal level of safety. Any accident or injury is considered an unacceptable abnormality that must be corrected immediately. The Company and every Associate has a moral obligation to do everything possible to ensure each person returns home safely every day.

The personal safety and health of each employee are of primary importance to the Company. To the greatest degree possible, management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.

Safety is essential to all business functions and is never compromised under any circumstances. We will maintain a safety and health program conforming to the best practices of organizations of our type. To be successful, such a program must embody the proper culture and attitudes toward injury and illness prevention on the part of both managers and employees. It also requires cooperation in all safety and health matters, not only between managers and employees, but also between each employee and fellow workers. Only through such a cooperative effort can a culture of safety be effective and flourish. Accidents and injuries can be eliminated using good judgement, commonsense, and adherence to the Company safety program.

Our objective is a safety and health program that will eliminate injuries and illnesses. Not merely in keeping with, but surpassing, the best experience of other operations similar to ours. Our goal is ZERO accidents and injuries. Our Safety and Health program includes providing mechanical and physical safe guards to the maximum extent feasible including:

- Conducting a program of safety and health inspections to identify and eliminate unsafe working conditions or practices; to control health hazards; and to comply fully with the safety and health standards for every job.
- Training all employees in good safety and health practices.
- Providing necessary personal protective equipment and instructions for its use and care.
- Developing and enforcing safety and health rules and requiring that employees cooperate with these rules as a condition of employment.
- Thoroughly and promptly investigating every accident to determine the cause, correct the problem, and prevent recurrence.
- The Company will conduct drug and alcohol testing to include pre-employment, random, reasonable suspicion, and post-accident.
- The Company will perform background checks on all new hire employees.

We recognize that the responsibilities for safety and health are shared.

- As your employer, the Company accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and providing the safeguards required to ensure safe conditions.
- Managers are responsible for developing the proper culture and attitudes toward safety and health for themselves and for those they supervise and for ensuring that all operations are performed with the utmost regard for the safety and health of all personnel involved including themselves.
- Employees are responsible for wholehearted, genuine cooperation with all aspects of the safety and health program including compliance with all rules and regulations and for continuously practicing safety while performing their job duties.

Safe Return to Work Program

It is the policy of Campbell Companies to provide a place of employment that is free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. However, when serious physical harm does occur to employees, Campbell Companies is committed to providing quality medical care and managing those costs associated with that medical care. We are also committed to safely returning injured employees back to work as soon as possible while enhancing their recovery.

Returning employees to work who have been injured in the performance of their jobs is an important component of our loss control program. Benefits of a return to work program include:

- Faster, more effective healing
- Safer work environment
- Direct and indirect savings in lost wages, medical costs and productivity
- Improved morale by providing support to employees with alternate assignments during recuperation.

Statistics have shown that without a return to work program, employees have little incentive to return to work and are less likely to return to work the longer they are out of work. This safety policy and procedure includes provisions for supervisory training, a discussion of the return to work process, presents details on our preferred medical provider network and presents information on transitional work assignments, permanent job modifications and new position assignment requirements.

Return to Work Process Following an Injury
When an employee, who has been injured on the job and placed on workers' compensation leave, or has released to return to work by the treating physician, there are three possible return to work options.

Option 1: An employee is injured but may not be able to do their normal work so an alternative to being placed on workers compensation leave is arranged. This means we will meet ANY and ALL restrictions with the lightest duty necessary to prevent a lost time accident. This could include something as light duty as completing training on a laptop from home. This benefits both the employee and Campbell Companies.

Option 2: An employee has reached maximum medical improvement and has been released to return to work by the treating physician. The employee is then returned to the original position he/she held prior to workers' compensation leave.

Option 3: An employee has not reached maximum medical improvement and is ready to return to a transitional work assignment (limited or modified work duty) with approval of the treating physician but retains some disability which prevents successful performance in the original position. The company will provide work reassignment suitable to the employee's capacity which is meaningful, productive and advantageous to the employee and the company. The physical demands of the assignment will be assessed to ensure the injured employee can perform them safely.

Return to Work Program Guide
Every employee should be entered into the Return to Work Program upon medical certification that the employee may return to some type of work duty. Written return to work authorization must be obtained from the preferred medical provider. Every attempt should be made to modify the employee's current job to meet restrictions. Injured employees should usually be under the direct supervision of the supervisor in the area in which he/she is working. However, supervisors should understand their responsibility and be willing to work

with employees not normally under their control. The Workers' Compensation Administrator and the treating physician shall make the final decision, with input from the injured employee's supervisor and Human Resources Manager, as to when an employee returns to work in either his/her original position, a transitional work assignment, a permanently modified job or a re-assigned position.

Preferred Medical Provider

The preferred provider network is a list of physicians who have agreed to treat injured company employees when such injuries arise out of the performance of their job duties. **Any employee who is injured and requires more further medical treatment beyond a First Responder must see one of our preferred medical providers initially.** Our preferred medical providers are made aware that we provide modified duty to meet any restrictions prescribed by the physician. **We require the supervisor to attend the initial treatment appointment to help the medical provider understand that we will allow the lightest duty needed to ensure the employee can continue to work if they are able. Even in a very minimal capacity from home doing training on a laptop or other related work.**

Transitional Work Assignments

Employees will be provided with transitional work assignments during their recuperation in order to maintain desirable productivity levels. The assignment must meet the restrictions specified by the physician. A copy of the restrictions will be given to the Safety Department, HR Manager and the injured employee's supervisor. All other medical information will be kept confidential. Any related paper work for the injury and the injured employee will be maintained by the employer. These assignments should be short term in nature until the employee is able to return to his/her original job assignment.

Program Communication

The Return to Work Program must be effectively communicated to injured employees, affected supervisors, and preferred providers. Program communication will be achieved by the training of supervisors, safety orientation training for employees and the distribution of program literature. Injured employees and affected supervisors - The Workers' Compensation Administrator will provide an employee information on Workers' Compensation and Return to Work information with specific details on injured employees and affected supervisors' responsibilities and required actions.

General Safety Rules

1. Every employee has the right and responsibility to stop any work if they feel that it is unsafe for them or their coworkers.
2. Safety is everyone's responsibility. Unsafe working conditions are not acceptable.
3. Immediately report all accidents no matter how slight, near misses, and property damage to your supervisor.
4. Immediate report all fires and spills, no matter how small to your supervisor.
5. Horseplay or fighting is prohibited on Campbell Company Machinery Co. premises.
6. All passengers in Company vehicles, including rental cars, must wear seatbelts. The driver is responsible for ensuring that all passengers are wearing seatbelts prior to putting the vehicle in motion.
7. The use, sale, transportation, possession of drugs, alcoholic beverages, firearms, deadly weapons, or explosives while on Company premises or vehicles is prohibited.
8. The use of drugs that might impair your ability to work safely must be reported to your supervisor. The type of drug does not have to be disclosed to protect confidentiality.
9. Smoking is permitted in designated areas only.
10. No work may be started in any area or on any equipment without the knowledge and consent of the person in charge. Do not operate or begin work on any equipment on which you are not trained.
11. Under normal operations, all operating machinery and electrical equipment must have all safety guards, switches, and alarms in place and functional.
12. When ascending and descending stairways, use the handrail and take only one step at a time. Running in work areas is prohibited except for emergency purposes.
13. Use only proper tools and equipment maintained in good working condition.
14. Use proper lifting techniques (such as bending of the knees), obtain assistance for heavier loads that exceed 50 lbs., and use mechanical lifting aids when available.

Cardinal Rules

At Wheeler Machinery Co. safety is the first consideration in every aspect of our business. To further this mind set we have four Cardinal Rules that were developed to prevent behaviors that can lead to the most serious types of accidents. Any employee who violates these rules is subject to termination.

#1 Working under the influence of alcohol or the illegal use of drugs is not permitted……ZERO Tolerance.

#2 Driving distracted while operating any and all motorized riding equipment and vehicles is expressly prohibited.

This includes, but is not limited to, composing, or sending messages, texts & emails, reading messages, including texts & emails, manually accessing data, using laptops, taking notes, reading, viewing/taking videos or pictures. Any employee involved in a verified reportable vehicle incident and found to be participating in a distracted driving activity will be terminated. ANY activity that takes your attention away from driving and safe operation of the vehicle is a distraction and is prohibited.

- No voice dictation in any application is allowed.
- Distracted driving activities are not allowed while stopped at a light or in traffic. The vehicle must be pulled over off the roadway in a safe location and the vehicle in park.
- Phone calls are allowed but must be **hands free** via the Bluetooth or infotainment system built into the vehicle.
- All reported cases of distracted driving will be investigated by company representatives and subject to our progressive disciplinary policy, up to employment termination.

#3 Unauthorized by-pass of a LOTO tag or lock is NOT permitted.

- Generally, no by-pass is permitted except under extenuating circumstances under the direction of a supervisor, manager and safety department representative.
- The person who placed the lock or tag will be required to remove it.

#4 Never be physically under a suspended load.

- Never depend solely on hydraulics for support.
- Never work under a machine or component that has not been properly blocked or cribbed.
- Loads supported solely by a crane assembly are not considered properly blocked.

TRACK – Job Hazard Analysis

There is an inherent danger in everything that we do, every day. Whether it's operating a crane, carrying heavy boxes, riding in a car, or mowing the lawn—every activity has its risks. So, how do we survive? By controlling and/or avoiding these risks. This is called a **risk assessment.** You may not be aware of it, but every time you plug in an appliance, or drive to work, you think about the inherent dangers involved and how to avoid them. But what were to happen if you were to ignore these risks, or not focus on the job at hand? A normally safe, routine task could become the cause of a serious accident.

A risk assessment, simply put, involves seeing the task at hand, identifying the risks involved, and finding ways to avoid them. Simple, right? Sometimes so simple that it gets overlooked. Nearly every accident that has occurred at Campbell Companies over the years was the result of employees losing their focus and not paying attention to the job at hand. Performing a simple Risk Assessment is the best way to:

Before every job, stop and
Think Through the Task
Recognize the Hazards
Assess the Risks
Control the Hazards
Keep Safety First in all Tasks

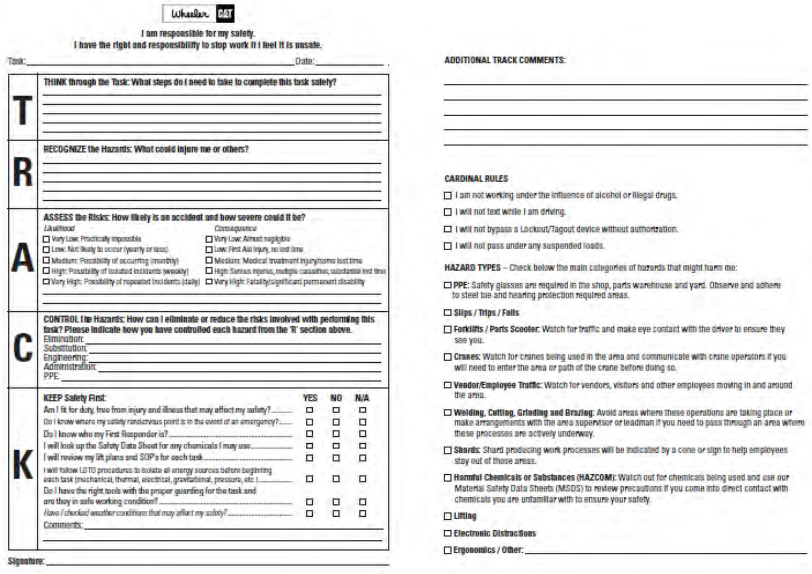
1. **Think through the task**. Before beginning work on a job, ask yourself these questions:
    - What steps do I need to take to accomplish this task?
    - What tools or equipment do I need to complete the job safely?
    - Have I been properly trained to complete this task?
    - Do others in the area need to be notified?
2. **Recognize the hazards**. Before beginning work on a job, ask yourself these questions:
    - Is the work area safe?
    - Are the tools and equipment needed in a safe working condition?
    - Have I isolated all energy and substance, Lock Out Tag Out?
3. **Assess the risks**. Before beginning work on a job, ask yourself these questions:
    - How could I, or someone near me, be injured by performing this task?
    - Could and accident or injury be avoided?
    - What equipment/systems could be damaged?
    - What are the likelihood and consequences of an accident?
4. **Control the hazards**. Before beginning work on a job, ask yourself these questions:
    - How can I reduce the risks involved with performing this task?
        - Elimination (removing the hazard)
        - Substitution (find a less hazardous method to complete the task)
        - Engineering (use guards, covers, better tooling)
        - Administration (follow all policies, procedures)
        - Personal Protective Equipment (wear proper PPE, respirator, face shield etc.)
5. **Keep safety first in all tasks**. Before beginning work on a job, ask yourself these questions:

- Am I ready for work?
- Am I focused on the task at hand?
- Am I looking after those around me? Are they looking after me?
- Am I alert and well rested?
- Am I aware of my surroundings?
- **Am I committed to working safely?**

Staying fit for duty can take several forms. Listed below are a few suggestions on how each of us can be fit and ready to work safely:

- Make a personal commitment to perform your job assignment safely and to follow all procedures. Taking short cuts can result in serious injuries with long-lasting disabilities or even death.
- Getting adequate rest is critical for being fit. Adjusting your schedule so that you can get the proper rest prior to reporting to work is key. Sufficient rest will allow you to be alert throughout the shift.
- Properly focusing on the job at hand. Distractions or daydreaming can cause you to lose your focus on performing a job safely. Allowing your mind to wander off the task at hand can result in serious injury or property damage. If you find your mind wandering off the task you are performing, stop what you are doing, refocus your attention, and then safely resume the task.

Each day all employees are required to complete a TRACK card for the task that they will be performing. It is important to make sure you are addressing any hazards and make adjustments as conditions or your scope of work changes.



Wheeler PAT

I am responsible for my safety.
I have the right and responsibility to stop work if I feel it is unsafe.

Task:_____ Date:_____

T THINK through the Task: What steps do I need to take to complete this task safely?

R RECOGNIZE the Hazards: What could injure me or others?

A ASSESS the Risks: How likely is an accident and how severe could it be?

Likelihood / Consequence

- ☐ Very Low: Practically impossible / ☐ Very Low: Almost negligible
- ☐ Low: Not likely to occur (yearly or less) / ☐ Low: First Aid injury, no lost time
- ☐ Medium: Possibility of occurring (monthly) / ☐ Medium: Medical treatment injury/some lost time
- ☐ High: Possibility of isolated incidents (weekly) / ☐ High: Serious injuries, multiple casualties, substantial lost time
- ☐ Very High: Possibility of repeated incidents (daily) / ☐ Very High: Fatality/significant permanent disability

C CONTROL the Hazards: How can I eliminate or reduce the risks involved with performing this task? Please indicate how you have controlled each hazard from the 'R' section above.

Elimination:
Substitution:
Engineering:
Administration:
PPE:

K KEEP Safety First:

	YES	NO	N/A
Am I fit for duty, free from injury and illness that may affect my safety?	☐	☐	☐
Do I know where my safety rendezvous point is in the event of an emergency?	☐	☐	☐
Do I know who my First Responder is?	☐	☐	☐
I will look up the Safety Data Sheet for any chemicals I may use	☐	☐	☐
I will review my lift plans and SOP's for each task	☐	☐	☐
I will follow LOTO procedures to isolate all energy sources before beginning each task (mechanical, thermal, electrical, gravitational, pressure, etc.)	☐	☐	☐
Do I have the right tools with the proper guarding for the task and are they in safe working condition?	☐	☐	☐
Have I checked weather conditions that may affect my safety?	☐	☐	☐

Comments:_____

Signature: _____

ADDITIONAL TRACK COMMENTS:

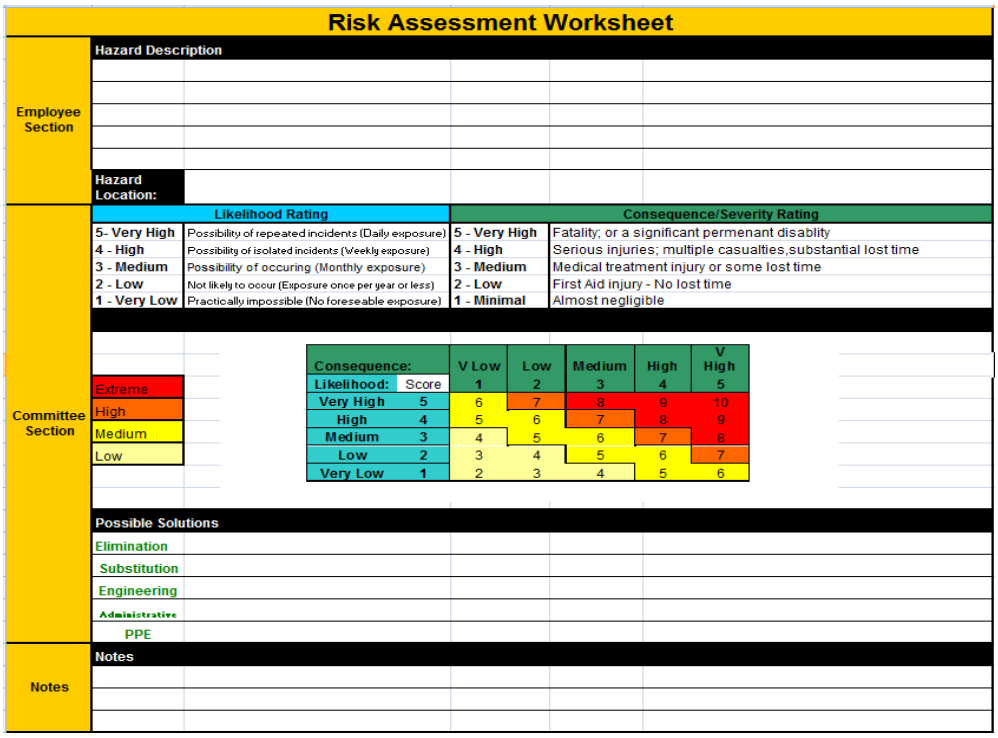
CARDINAL RULES

- ☐ I am not working under the influence of alcohol or illegal drugs.
- ☐ I will not text while I am driving.
- ☐ I will not bypass a Lockout/Tagout device without authorization.
- ☐ I will not pass under any suspended loads.

HAZARD TYPES – Check below the main categories of hazards that might harm me:

- ☐ **PPE:** Safety glasses are required in the shop, parts warehouse and yard. Observe and adhere to steel toe and hearing protection required areas.
- ☐ **Slips / Trips / Falls**
- ☐ **Forklifts / Parts Scooter:** Watch for traffic and make eye contact with the driver to ensure they see you.
- ☐ **Cranes:** Watch for cranes being used in the area and communicate with crane operators if you will need to enter the area or path of the crane before doing so.
- ☐ **Vendor/Employee Traffic:** Watch for vendors, visitors and other employees moving in and around the area.
- ☐ **Welding, Cutting, Grinding and Brazing:** Avoid areas where these operations are taking place or make arrangements with the area supervisor or leadman if you need to pass through an area where these processes are actively underway.
- ☐ **Shards:** Shard producing work processes will be indicated by a cone or sign to help employees stay out of those areas.
- ☐ **Harmful Chemicals or Substances (HAZCOM):** Watch out for chemicals being used and use our Material Safety Data Sheets (MSDS) to review precautions if you come into direct contact with chemicals you are unfamiliar with to ensure your safety.
- ☐ **Lifting**
- ☐ **Electronic Distractions**
- ☐ **Ergonomics / Other:** _____

A risk assessment is also a critical part of our job hazard analysis and should be used for tasks you are unfamiliar with or new tasks introduced in the workplace.



Risk Assessment Worksheet

Employee Section

Hazard Description

Hazard Location:

Likelihood Rating		Consequence/Severity Rating	
5- Very High	Possibility of repeated incidents (Daily exposure)	5 - Very High	Fatality; or a significant permenant disablity
4 - High	Possibility of isolated incidents (Weekly exposure)	4 - High	Serious injuries; multiple casualties,substantial lost time
3 - Medium	Possibility of occuring (Monthly exposure)	3 - Medium	Medical treatment injury or some lost time
2 - Low	Not likely to occur (Exposure once per year or less)	2 - Low	First Aid injury - No lost time
1 - Very Low	Practically impossible (No foreseeable exposure)	1 - Minimal	Almost negligible

Committee Section

Extreme
High
Medium
Low

Consequence:		V Low	Low	Medium	High	V High
Likelihood:	Score	1	2	3	4	5
Very High	5	6	7	8	9	10
High	4	5	6	7	8	9
Medium	3	4	5	6	7	8
Low	2	3	4	5	6	7
Very Low	1	2	3	4	5	6

Possible Solutions

Elimination
Substitution
Engineering
Administrative
PPE

Notes

Notes

"We have a goal to be the safest company in our industry in the state." This goal is easily achievable if every one of us will do our part to keep ourselves safe—by coming to work each and every day fit, focused, and ready to work safely. By following the **TRACK** program you will ensure your safety, and that of others. Ask yourself:

Am I committed to working safely?
Am I alert and rested?
Am I focused on the job at hand?
Will I do what it takes to keep safety on <u>TRACK?</u>

Fit for Duty Program

At Campbell Companies safety is the first consideration in all aspects of our business. Part of that comes from being fit for duty.

Fit for Duty is defined as : Before reporting for work or company business all employees must be physically and mentally able to safely perform all essential functions and duties of their jobs without imposing a significant risk or substantial harm to their own or others' health and or safety.

What are some things that may not make us fit for duty? Sometimes we tend to think that fit for duty only pertains to alcohol and drugs. We will continue to do pre-employment, random, post-accident, reasonable suspicion and return to duty drug and alcohol testing. However, there are other factors they may contribute to someone not being able to safely do their jobs such as:

1. Lack of quality sleep/fatigue
2. Anxiety/Stress
3. Personal problems
4. Medical conditions
5. Medications-Prescription or Over the Counter

What are the employee's responsibilities? If an employee is taking prescription or over the counter medication that could impair their ability to perform work safely or believes that he or she or any other employee constitutes a risk of serious harm to the safety or health of themselves or others due to any of the other above mentioned items or any other factors then that employee needs to immediately notify their supervisor/manager or the Safety Department.

What are the Manager and Supervisor responsibilities? In the event that an employee discloses that he/she is not fit for duty or identifies another employee not fit for duty, the Company will evaluate the employee's behavior and the situation to determine if the situation may pose a significant risk. The Company may remove the employee from work, assign other lighter duties that the employee can safely perform, or place the employee on temporary leave and or take other action.

Fit for Duty is a team effort that will take all of us working and communicating together. Employees need to speak up when they feel that they are unable to do their jobs safely. Managers/supervisors need to foster the environment and culture to make employees feel like they can come to you about such issues and make every reasonable attempt to accommodate the employee.

Slips Trips Falls –Housekeeping

Slip Prevention

Slips can be caused by wet surfaces, spills, or weather hazards like ice and snow. Slips are more likely to occur when you hurry, run, or don't pay attention to where you're walking. Follow these safety precautions in order to avoid a slip:

- Practice safe walking skills. If you must walk on slippery or wet surfaces, take short steps to keep your center of balance under you, and move slowly. Devices such as strap-on cleats can be fastened to shoes or boots for greater traction on ice. Check the condition of your footwear. Footwear should be in good condition with enough tread to provide traction in the conditions that you work in.
- Clean up spills right away. Even minor spills can be very hazardous. Report spills or leaks of hazardous materials to the proper authorities immediately.
- Don't let grease accumulate on a shop floor around machinery.

Properly cleaned floors help
Floors must be dry and free of protruding objects such as nails, splinters, holes, or loose boards. Use floor finishes properly so they don't leave a slippery surface. Many slip accidents are caused by improper cleaning methods. Some floor finishes may have additives that help increase traction. If you're mopping or cleaning, post signs or place barricades to warn others of a wet surface.

Added traction for wet floors
One way to avoid slips on frequently wet surfaces is to apply some type of abrasive that will increase traction. Epoxies and enamels that contain gritty compounds may be painted on floors. Adhesive-backed strips of skid-resistant material can be applied to some walking surfaces. Rubber mats can be used as a permanent or temporary solution to wet areas.

Trip Prevention

Trips occur whenever your foot hits an object and you are moving with enough momentum to be thrown off balance. Remember these rules to avoid tripping:

- Make sure you can see where you're going. Carry only loads that you can see over.
- Don't run up or down stairs or jump from landing to landing. Use the handrails.
- Keep work areas well-lit. Report burnt out light bulbs.
- Keep your work area clean, and don't clutter aisles or stairs. Store materials and tools properly.
- Arrange furniture so that it doesn't interfere with walkways or pedestrian traffic in your area.
- Keep extension or power tool cords out of walkways.
- Eliminate hazards due to loose footing on stairs, steps, and floors. Report loose carpeting, stair treads, hand rails, or floor tiles, and report broken pavement and floor boards.

Fall Prevention

Falls occur whenever you move too far off your center of balance. Slips and trips often push you off your center of balance far enough to cause a fall, but there are many other ways to fall. Falls are also caused by makeshift ladders, misuse of ladders, accidents while climbing in and out of forklifts and other equipment as well as improper scaffolding use.

Whenever ascending or descending any ladder, forklift, equipment or you must always:

- Face the ladder, forklift, equipment or scaffolding
- Use 3 points of contact with at least one hand to firmly grasp the ladder or hand holds and
- Not be carrying any object or load that could cause them to lose balance and fall.

Fall Protection Program

Work activities where employees may be subject to falls and/or falling objects shall be conducted safely with associated hazards eliminated and/or controlled.

This policy covers minimum performance standards applicable to Campbell Companies associates employees and locations. Local practices requiring more detailed or stringent rules, or local, state or other federal requirements regarding this subject can and should be added as an addendum to this procedure as applicable.

Purpose
To ensure that employees are protected from the hazards associated falls and falling objects.

Scope

Applies to Campbell Companies Associates work sites, i.e., Campbell Companies offices, client job sites, etc. in general industry (e.g. offices, shops, warehouses, etc.) with exposure to heights greater than or equal to four (4) feet

Definitions

Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices that is capable of supporting 5,000 lbs. per employee or two times the intended impact load, whichever is greater, or for a positioning system, 3,000 lbs. without failure.

Approved means, for the purpose of this section, authorized by the Branch Safety Officer, tested and certified by the manufacturer or any recognized national testing laboratory to possess the strength requirements specified in this section.

Catenary Line – see **Horizontal Lifeline**.

Competent Person means an individual knowledgeable (through experience and/or training) of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance; who is capable of identifying existing and potential fall hazards; who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this section regarding the erection, use, inspection, and maintenance of fall protection equipment and systems.

Controlled Access Zone means an area in which certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.
Deceleration Device means a device manufactured (fall) shock-absorbing device whereby the forces of the fall are rapidly reduced to meet acceptable levels.

Drop Line means a vertical lifeline secured to an upper anchorage for the purpose of attaching a lanyard or device.

Employee means every laborer regardless of title or contractual relationship.

Fall Arrest System (Personal) means the use of multiple, approved safety equipment components such as body harnesses, shock absorbing lanyards, deceleration devices, droplines, horizontal and/or vertical lifelines and anchorages, interconnected and rigged to ones body as to arrest a free fall.

Fall Protection Work Plan means a written planning document in which the employer identifies areas in the work area where a fall hazard of 4 feet or greater exists, whereby conventional Fall Restraint and Fall Arrest Systems cannot be utilized.

Fall Restraint System means an approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level.

Fall Distance means the actual distance from the employee's work platform (area) to the level where a fall would stop (ground level or otherwise).

Full Body Harness means a configuration of connection straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard, lifeline, positioning rings, or deceleration devices.

Full Body Harness System means a Class III full body harness and shock absorbing lanyard attached to an anchorage or attached to a horizontal or vertical lifeline which is properly secured to an anchorage(s) capable of withstanding the forces specified in the applicable sections.

Hardware means snap hooks, D-rings, buckles, carabiniers, and adjusters used to attach the components of a fall protection system together.

Holes (floor, roof or walking surface) means any opening in the floor greater than two inches whereby falling objects or an employee fall equal to, or greater than six foot is possible.

Holes (wall) – see **Wall Opening**.

Horizontal Lifeline means an approved rail, rope, or synthetic cable installed in a horizontal plane between two anchorages and used for attachment of a employee's lanyard or lifeline device while moving horizontally.

Lanyard means a flexible line of webbing, rope or cable (usually in two, four or six foot lengths) used to secure a harness to a lifeline or an anchorage point.

Leading Edge means the advancing edge of a floor or roof, where a fall of more than four feet is possible to the ground or to another level.

Lifeline (vertical or horizontal) means an approved vertical line from a fixed overhead anchorage or horizontal line between two horizontal anchorages, independent of walking or working surfaces, to which a lanyard or device is secured.

Restraint Line means a line from a fixed anchorage or between two anchorages to which an employee is secured in such a way as to restrict the employee from reaching a point where falling to a lower level is possible.

Safety Line – see **Lifeline**.

Shock Absorbing Lanyard means a flexible line of webbing or rope used to secure a harness to a lifeline or anchorage point that has an integral shock absorber of either a rip-stitch or retractable configuration.

Snaphook – means a 'locking' hook at the end of a lanyard or restraining/positioning line that has a double-action locking mechanism intended to eliminate unintentional unhooking from the D-ring of a body harness. Non-locking snaphooks are prohibited.

Standard Guardrail means a toprail at 42 inches high (plus or minus three inches), a midrail installed midway the top edge of the guardrail system and the surface.

Static Line – see **Lifeline**.

Toeboard means a barrier at the base of the guardrail system to prevent material and objects from falling off the surface. They are at least four (4) inches of nominal height with no less than one (1) inch clearance from the surface.

Unprotected Sides and Edges means any side or edge (except at entrances to points of access) of a floor, roof, ramp, or runway where there is no wall or guardrail system.

Walking/Working Surface means for the purpose of this section, any area whose dimensions are 45 inches or greater in all directions through which employees pass or conduct work, and can include scaffolding and aerial lifts regardless of surface dimensions.

Wall Opening means a gap in a wall where the outside bottom edge is 6 feet or more above lower levels, and the inside bottom edge (e.g. parapit wall) is less than 39 inches above the walking/working surface.

Work Area means that portion of a walking/working surface where work activities are being performed.

Requirements

Training

Fall Protection training requirements shall include:

1. New employees with work responsibilities requiring the use of fall protection will be oriented to the Campbell Companies Fall Protection Program (and any local addendums) as part of the 'new employee orientation program'.

2. At new worksites, i.e. Campbell Companies offices, client job sites, etc., during the pre-job meeting to describe specific fall protection requirements of the job.

3. Thereafter, every foreseeably exposed employee will be trained at least annually, and include the following:
   - The nature of fall hazards in the typical work area
   - The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems
   - The use and operation of conventional and non-conventional fall protection systems
   - The role of each employee in the safety monitoring system when such a system is in use
   - The limitations on the use of mechanical equipment during the performance of roof work on low-slope roofs
   - The correct procedures for equipment and materials handling and storage, and the erection of overhead protection
   - The correct fit, maintenance and use of (personal) fall arrest system components, as determined by the manufacturer(s)
   - Rescue procedures in the event an individual falls
   - All other details in this section (local addendums)

Toolbox talks for related issues of this manual section shall be covered periodically.

Retraining shall also occur whenever deficiencies in the training program are identified, standard requirements change or are modified or new fall protection systems are introduced.

Any employee who has not received orientation or annual training (as previously outlined) shall not be allowed to work at heights identified by this section.

Training provided shall be documented and maintained in a training file at the Salt Lake Branch Office. Training will include dates of training, instructor's name, material covered and attendee names.

Conventional Fall Arrest and Fall Restraints Systems shall be utilized where the exposure to falls greater than 4 foot and from falling objects as is reasonably foreseen. The following systems shall be utilized:

Guardrail System (fall restraint and potentially from falling objects)

Toprails and midrails of guardrail systems constructed of wood shall be at least ¼ inch diameter or thickness to prevent cuts and lacerations.

If wire rope is used for toprails, it shall be flagged at not more 6 feet intervals with high-visibility material. Steel and plastic banding are prohibited for use as toprails or midrails.

The top edge height of toprails, or (equivalent) guardrails shall be 42 inches, plus or minus 3 inches, above the walking/working level.

When employees are using ladders in distance proximity equivilent to the maximum use-length of the ladder, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the maximum use-length height of the ladder, **or** see **Special Control Procedures** (5.4.5) portion (for ladders) of this manual section for other options.

Screens, midrails, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches high. When midrails are used, they shall be installed at a height midway between the top edge of the guardrail system and the walking/working level. When screens and mesh are used, they shall extend from the top rail to the walking/working level. Intermediate members, such as balusters, when used between posts, will not be more than 19 inches apart.

The guardrail system shall be capable of withstanding a force of at least 200 pounds of force applied within 2 inches of the top edge in any outward or downward direction. When the 200 pounds is applied in a down-ward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches above the walking/working level.

Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members will be capable of withstanding a force of at least 150 pounds of force applied in any downward or outward direction at any point along the midrail or other member.

Guardrail systems shall be free of sharp edges and burrs to protect against punctures or lacerations and to prevent clothing from snagging.

The ends of top rails and midrails shall not overhang terminal posts, except where such an overhang does not constitute a projection hazard.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

At uncovered holes, guardrail systems shall be set up on unprotected sides or edges. When holes are used for the passage of materials, the hole shall have not more than two sides with removable guardrail sections. When the hole is not in use, it shall be covered or provided with guardrails along unprotected sides/edges.

If guardrail systems are used around uncovered holes that are used as access points (such as ladderways), gates shall be used or the guardrail shall be offset at a 45 degree angle to prevent accidental walking into the hole. Toeboards shall be utilized around the edges not utilized as the actual access point.

If guardrails are used at unprotected sides or edges of ramps and runways, they shall be erected on each unprotected side/edge.

When guardrail systems, in combination with netting, is used to prevent materials from falling from one level to another, openings shall be small enough to prevent passage of potential falling objects.

Covers for Holes (fall restraint and from falling objects)

Covers (or a guardrail system with toe boards…see Guardrail Systems within this section) shall be installed over holes equal to or greater then 2" in floors, roofs and walkways that are more than 4 feet above lower levels.

Hole covering material shall support at least two times the potential weight that will cross over it. If plywood is chosen as the cover material, it shall be of at least ¾ inch in thickness.

Hole covers shall be secured in place in such a manner as to not easily be displaced. Examples of securing methods include, but are not limited to: nailing, attached cleats, wire, etc.

Such covers shall have the word 'HOLE' or 'COVER' predominately marked on the top surface. Where covers are too small for such marking, they shall be painted or significantly marked in the color orange.

Restraining/Positioning System (fall restraint)

Only full body harness systems with positioning rings are to be utilized with any restraining/positioning system.

Restraint line (rope) length shall not exceed the distance to fall exposure, and shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Requirements for body harness systems, snaphooks, D-rings, and other connectors used with positioning device systems shall meet the same criteria as those for fall arrest systems (5.2.4) of this section.

No makeshift fall protection equipment may be utilized.

Body belts are prohibited.

(Personal) Fall Arrest System (fall arrest)

(Personal) Fall Arrest Systems shall do all of the following:

- Limit maximum arresting force on an employee to 1,800 pounds. Note: total body weight including tools cannot exceed 310 lbs. to stay under arresting force limit
- Be rigged so that an employee can neither free fall more than 6 feet nor contact any lower level
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet
- Have sufficient strength to withstand 5000 lbs. (excluding horizontal lifelines which require a safety factor of at least two times the potential impact energy)
- All components of the (personal) fall arrest system (lanyards, body harness and attached hardware, and shock-absorbing devices) shall meet the design specifications of OSHA 1926.502 Subpart M

The following items/actions are prohibited for use with (personal) fall arrest systems:

- body belts
- non-locking snaphooks
- lanyards without shock absorbers
- tying back to the lanyard (once around another object) for a means of an anchorage point, unless the lanyard was designed for this purpose by the manufacturer, the object tied around can support the anticipated fall force and the object does not have sharp edges or burrs

(Personal) fall arrest systems shall be utilized in the following manner:

Pre-Use Inspection

All components shall be inspected prior to each use for wear damage, and other deterioration in accordance with manufacturer's requirements (see equipment inspection and maintenance procedures of this section).

General Proper Body Harness Fit Guidelines (two employees are usually required to completely fit each other)

The body harness type and size shall meet the physical needs of its user (male/female or small, medium, large, etc.).

Follow the manufacturer's guidelines on proper fit.

Shoulder, thigh, button and chest straps shall be fit snugly whereas it is slightly difficult to slide the hand underneath.

Loose straps ends shall be folded back under.

D-ring placement should be between the shoulder-blades.

Chest straps should be positioned across the mid-chest area.

Sufficient Anchorage Points Utilized

Anchorages shall be used under the supervision of a competent person, as part of a complete (personal) fall arrest system that maintains a safety factor of at least two (i.e., capable of supporting at least twice the weight expected to be imposed upon it).

Anchorages used to attach (personal) fall arrest systems will be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting at least 5,000 pounds of force per person attached.

Anchorage points can include:

- Lifelines (horizontal and vertical)
- Designed anchorage points on aerial lifts
- Eye-bolts listed for use by the manufacturer
- Specially designed anchorage tools specifically designed to meet fall force requirements, including:
- Wrap-around lanyards as approved by the manufacturer
- I-beam clamps designed specifically as an anchorage point

Prohibited anchorage points include, but are not limited to:

- Standard guardrails and railing
- Ladders/rungs
- Scaffolding, unless approved by the manufacturer or/with anchorage points
- Light fixtures, ductwork, conduit, pipe vents, wiring/duct/piping harnesses, other roof stacks, vents or fans
- C-clamps
- Piping (unless capable of meeting the criteria of an anchorage point)
- To a lanyard (around a solid object), unless the lanyard and hardware is manufactured for that purpose

Lifeline/Lanyard Applications

Lanyards shall only be attached to anchorage points sufficient to meet the fall force requirements.

Shock-absorbing lanyards are required to limit the fall force to less than 1800 pounds.

Self-retracting lanyards (retractables) capable of withstanding the tensile load of 3,000 lbs. that limit the free fall distance to two (2) feet or less are always recommended and **are required when the fall distance is less than nineteen and one-half (19.5) feet**.

Lanyards that do not limit free fall distance to 2 feet or less, such as ripstitch lanyards and tearing/deforming lanyards will be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Horizontal lifelines will be designed, installed, and used under the supervision of a Competent Person, as part of a complete (personal) fall arrest system. Lifelines shall be protected against being cut or abraded. Horizontal lifelines cannot exceed sixty feet in length.

Vertical lifelines shall be utilized with leading edge work, shall reach the ground, and the method of anchorage attachment shall be of proper design (i.e. no knots).

Safety Net System (fall arrest and potentially from falling objects)

When utilized, safety nets shall be installed as close as practicable under the walking/working surface on which employees are working and never more than 30 feet below such levels.

Safety nets will be inspected at least once a week for wear, damage, and other deterioration. The maximum size of each safety net mesh opening will not exceed 36 square inches nor be longer than 6 inches on any side, and the openings, measured center-to-center, of mesh ropes or webbing, will not exceed 6 inches.

Defective/unfit nets are not to be used and are to be taken from service and immediately destroyed by cutting into unuseful sizes and properly disposed.

Mesh crossings will be secured to prevent enlargement of the mesh opening. Each safety net or section will have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

Connections between safety net panels will be as strong as integral net components and be spaced no more than 6 inches apart.
Safety nets shall extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net surface.	Minimum required horizontal distance of outer edge of net from edge of working surface.
Up to 5 feet	8 feet
More than 5 feet up to10 feet	10 feet
More than 10 feet	13 feet

Safety nets shall be tested at the beginning of each workday and shall be capable of absorbing an impact force of a drop test consisting of a 400-pound bag of sand 30 inches in diameter dropped from the highest walking/working surface at which workers are exposed, but not from less than 42 inches above that level. Employees shall not be allowed in work areas controlled with safety nets until this test is complete.

If safety nets are utilized for the dual purpose of employee fall protection and the protection of other workers from fall objects, the net webbing opening shall be small enough to prevent passage of potential falling objects.

Items that have fallen into safety nets, such as materials, scrap, equipment, and tools, shall be removed as soon as possible and at least before the next work shift.

Where conventional fall restraint and fall arrest methods cannot be utilized (or utilized safely), the following <u>non-conventional</u> methods can be utilized

A written work plan shall be developed when a project or task possesses a fall exposure whereby these systems are utilized. A sample written plan format can be found in 29 CFR 1926 Subpart M Appendix E.

A Competent Person will develop and implement a written Fall Protection Work Plan including each area of the work place where the employees are assigned and where fall hazards of 6 feet or more will exist. The Risk Assessment for this project/task should be reviewed for this document.

The written Fall Protection Work Plan shall include:

- Identification of fall hazards in the work area
- Describe the non-conventional method (or in combination with conventional method) of fall protection to be provided
- Describe the correct procedures for the assembly, maintenance, inspection, and disassembly of any fall protection system to be used
- Describe the correct procedures for the handling, storage, and securing of tools and materials
- Describe the method of providing overhead protection for workers who may be in or pass through the area below the work site
- Describe the method for prompt, safe removal of injured workers

- Describe the method for destruction of personal fall arrest system equipment subjected to the forces of any fall
- Be available at all times on the jobsite

Controlled Access Zone System

Controlled access zone systems shall be set up as follows:

- Zone shall be established no closer than six (6) feet or further than twenty-five (25) feet from any leading edge
- Control line shall extend parallel along the entire length of the unprotected or leading edge
- Only trained employees are allowed in the Zone
- The Zone shall have signage marking it as a 'Controlled Access Zone'

Warning Line System (pitches of ≤4:12 and flat surfaces only)

Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot intervals with high-visibility material
- Rigged and supported so that the lowest point including sag is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface
- Stanchions, after being rigged with warning lines, will be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge
- The rope, wire, or chain will have a minimum tensile strength of 500 pounds, and after being attached to the stanchions, shall support without breaking the load applied to the stanchions as prescribed above
- Line will be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over
- Warning lines will be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line will be erected not less than 6 feet from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation

When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet from the roof edge.

The warning line system shall be used in conjuction with one of the following:

- safety monitoring system (most common); or
- (personal) fall arrest system; or

- safety net system; or
- guardrails

Safety Monitoring System

A competent person will appoint the 'safety monitor' and will ensure that the safety monitor:

- Is competent in the recognition of fall hazards
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices
- Is operating on the same walking/working surfaces of the employees and can see them
- Is close enough to work operations to communicate orally with the employees and has no other duties but the monitoring function
- Has the authority to stop work
  Only employees engaged in roof/surface work and the safety monitor shall be allowed in an area where an employee is being protected by a safety monitoring system.

Specific Fall Hazard Procedures

Aerial Personnel Lifts

Employees utilizing aerial personnel lifts (e.g. scissor lifts, genie lifts, cherry-pickers, boom-lifts, etc.) shall use a restraint/positioning system or (personal) fall arrest system, even though a guardrail system is in place. Refer to Aerial Personnel Lifts section (8) for specific information on operating this equipment.

Attachment points for these systems shall be capable of withstanding 5,000 pounds and shall be maintained in the floor of the lift or where designed by the manufacturer.

Rails of such lifts shall not to be used as attachment points unless designed for that purpose by the manufacturer.

Excavations

Employees who work at the edge of an excavation 4 feet or more deep will be protected from falling into the excavation by guardrail systems or covers. Refer to Excavation & Trenching section (16) for specific information.

Where walk-ways are provided to permit employees to cross over excavations, guardrails are required on the walkway if the fall would be 6 feet or more to the lower level.

Hoist Areas

Each employee in a hoist area will be protected from falling 4 feet or more by guardrail, restraint/positioning or (personal) fall arrest systems. Refer to Equipment section (15) for specific information on utilizing this equipment.

If guardrail systems (or chain gate or guardrail), or portions thereof, must be removed to facilitate hoisting operations, as during the landing of materials, and a worker shall lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee shall be protected by a (personal) fall arrest system.

Falling Objects (additional protection from)

Except for scaffolding and aerial lifts, no materials or equipment shall be stored within 6 feet of working edges.

When canopies are used as protection from falling objects, canopies shall be strong enough to prevent collapse and to prevent penetration by any objects that may fall onto them.

When **toeboards** are used as protection from falling objects, they shall be erected along the edges of the overhead walking or working surface for a distance sufficient to protect persons working below. Toeboards will be capable of withstanding a force of at least 50 pounds of force applied in any downward or outward direction at any point along the toeboard. Toeboards will be a minimum of four (4) inches tall from their top edge to the level of the walking/working surface, have no more than one (1) inch clearance between its bottom and the surface.

Ladders (where work height (due to leaning out) exposure is equal to, or exceeds six foot and/or the maximum ladder height is within the distance to a leading edge)

If work is performed outside the rails of a ladder equal to, or exceeding 6' ; or if three-point contact on the ladder cannot be maintained, a (Personal) Fall Arrest Systems shall be utilized if anchorage points are available.

If anchorage points are not available or other traditional fall control systems are not feasible, a non-conventional system can be utilized (see 5.3 of this manual section).

Leading Edge Work

Employees working near a leading edge 6 feet or more above lower levels shall be protected by guardrail, safety net, restraint/positioning, or (personal) fall arrest systems. If these systems are not feasible the systems under 5.3 of this manual section can be utilized.

Roadway/Vehicular Passage Covers

Covers located in roadways and vehicular aisles shall be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected, and secured/marked as indicated in 5.2.2 of this manual section.

Roofs (work from or on)

Low-sloped (<4:12 pitch)

Employees engaged in roof activities on low-slope roofs with unprotected sides and edges feet or more above lower levels will be protected from falling by guardrail systems, safety net systems, (personal) fall arrest systems or a combination of a warning line system and guard-rail system, warning line system and safety net system, warning line system and (personal) fall arrest system, or warning line system and safety monitoring system.

Steep Roofs (>4:12 pitch)

Employees on a steep roof with unprotected sides and edges 6 feet or more above lower levels will be protected by either guardrail systems with toeboards, a safety net system, or a (personal) fall arrest systems.

Wall Openings

Employee working on, at, above, or near wall openings (including those with chutes attached) shall be protected from falling by the use of either a guardrail system, a safety net system, or a (personal) fall arrest system.

Equipment Inspection and Maintenance Procedures- Inspection, Replacement and Destruction

All equipment hereafter noted shall be visually inspected before each use, replaced immediately if any of the defective conditions are found, tagged 'out of service' and sent back to the Branch for destruction.

Body Harness Inspection

Beginning at one end, holding the body side of the harness toward you, grasp one area of the harness with your hands six to eight inches apart. Bend the strap in an inverted "U". Follow this procedure the entire length of the belt or harness. Watch for frayed edges, broken fibers, pulled stitches, cuts, burn marks or chemical damage. Special attention should be given to the attachment of buckles and D-rings to strap webbing. Inspect for frayed or broken strands. Broken webbing strands generally appear as tufts on the webbing surface.

Rivets should be tight and unmovable with fingers. Body-side rivet base and outside rivet burr should be flat against the material. Bent rivets will fail under stress. Especially note condition of D-ring rivets and D-ring metal wear pads (if applicable). Discolored, pitted, or cracked rivets indicate chemical corrosion.

The tongue or billet of bolts receives heavy wear from repeated buckling and unbuckling. Inspect for loose, distorted, or broken grommets. Harnesses using punched holes without grommets should be checked for torn or elongated holes causing slippage of the tongue buckle.

Hardware (Buckles, D-Rings, Snaps and Thimbles)
Buckle tongues should be free of distortion in shape and motion. They should overlap the buckle frame and move freely back and forth in their socket. Roller should turn freely on frame. Check for distortion or sharp edges.

Inspect the friction buckle for distortion. The outer bars and center bars must be straight. Pay special attention to corners and attachment points of the center bar.

Inspect the sliding bar buckle frame and sliding bar for cracks, distortion, or sharp edges. The sliding bar should move freely. Knurled edge will slip if worn smooth. Pay special attention to corners and ends of sliding bar.

Inspect the forged steel D-ring for cracks or other defects. Inspect the assembly of the D-ring to the body pad or D-saddle. If the D-ring can be moved vertically independent of the body pad or D-saddle, the harness should be replaced. Check D-Rings and D-Ring metal wear pad (if any) for distortion, cracks, breaks, and rough or sharp edges. The D-Ring bar should be at a 90 degree angle with the long axis of the belt and should pivot freely.

Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seal into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper.

The thimble must be unmovable in the eyes of the splice, and the splice should have no loose or cut strands. The edges must be free of sharp edges, distortion, or cracks.

Lanyard (shock-absorbing)
Begin at one end and work to the opposite end. Slowly rotate the lanyard so the entire circumference is checked. Factory spliced ends require particular attention.

Lanyard (Webbing) Retractable
Bend the webbing over a non-lacerating edge, observe each side of the webbed lanyard. This will reveal any cuts or breaks. Swelling, discoloration, cracks, and charring are obvious signs of chemical or heat damage. Closely observe for any breaks in the stitching.

Rope
Rotation of the rope lanyard while inspecting from end to end will bring to light any fuzzy, worn, broken, or cut fibers. Areas weakened by extreme loads will appear as noticeable change in original diameter. The rope diameter should be uniform throughout, following a short break-in period. Strands should be separated and inspected since the rope may wear on the inside if grit or moisture becomes embedded.

Storage/Cleaning
Storage areas shall be maintained as clean, dry and free of exposure to fumes or corrosive elements.

Cleaning methods established by the manufacturer shall be followed for all components. Generally, the following applies for body harnesses:

- Wipe off surface dirt with a sponge dampened in plain water. Squeeze the sponge dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thick lather with a vigorous back and forth motion
- Wipe the belt dry with a clean cloth. Hang freely to dry but away from excessive heat
- Bolts and other equipment should dry thoroughly without close exposure to heat, steam, or long periods of sunlight
- Mildly dirty cotton may be cleaned normally. For heavy dirt or grease, soak belts in a solution of one tablespoon of grease cutter to one gallon of water. DO NOT USE A STRONGER SOLUTION. After soaking, rinse again, then hang to dry
- Fall protection, which is not in the original package, shall be stored in a clean, dry area

Post-Fall or Near-Miss Incidents

Fall incidents and near-misses shall be thoroughly investigated to determine root causes and facilitate corrective measures to prevent reoccurences.

Employees involved in a fall equal to, or greater then 6' shall be required to receive an immediate medical evaluation.

All components of a (personal) fall arrest system involved in any fall with a fall distance of over six feet shall be immediately and completely replaced. Such equipment shall be tagged 'out of service' and sent back to the Branch for destruction.

Fire Protection Program

PURPOSE:

Fire Prevention/Protection Policy is intended to provide compliance with all related regulation and standard safe work practice. The purpose of the policy is to prevent fires and to provide guidelines for action in the event that a fire does occur.

Fire prevention program combines the following policies:

- PPE Policy
- Electrical Safety Policy
- Emergency Action Plan

These policies encompass methods used for incidence avoidance, incident response and specialized training required in the event of a fire.

Issues addressed in the above policies include, but are not limited to:

- Evacuation Procedure
- Extinguisher Training
- Basic Process Safety Training (if applicable)
- Hot Work Safety Training (if applicable)
- Confined Space Entry Safety Training (if applicable)
- Emergency Life Support Training
- Respiratory Protective Devices Training (if applicable)
- Assured Grounding Programs

POLICY:

Employees shall be informed of the proper actions to take in the event of a fire. This includes, but is not limited to; notification and evacuation procedures. It is STRESSED that at no time does the task of fighting fire supersede an employee's primary duties of:

- Ensuring their own personal safety and the safety of others.
- Reporting the incident to the proper authority and ensuring personnel accountability for yourself and all subordinates at the jobsite, in accordance with company and client policy.

PROCEDURE:

- All employees are responsible for good housekeeping practices to enhance fire prevention methods. Supervisors will be held accountable for the housekeeping of their job sites.
- If applicable, welding machine mufflers will be equipped with an approved spark arresting muffler.
- Only approved containers will be used during fueling operations. These shall be of the self-closing type.
- Flammable material shall be kept under the control. It shall be stored in compliance with

applicable OSHA and client regulations. The quantity of flammable/combustible material shall be kept to a minimum on the job site.

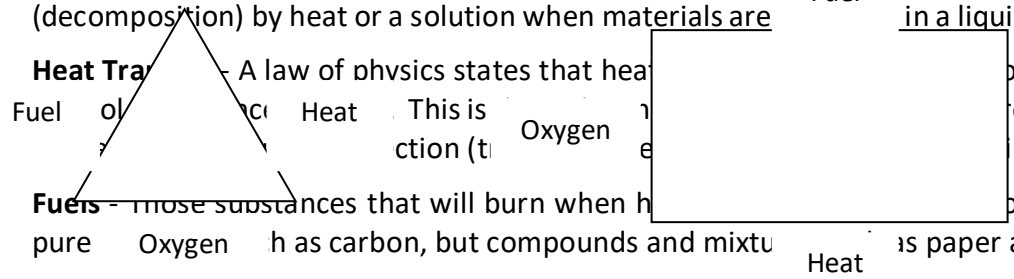
- Welding, cutting and grinding sparks shall be contained.
- Hot work areas shall be kept wetted down, and a fire extinguisher and hose maintained on each jobsite.
- Oily rags shall be immediately disposed of in designated hazardous waste containers.
- No hot work is to be performed without a Hot Work Permit.
- All vehicle entry into process areas requires a permit or permission from the operator.
- Use bonding straps to discharge and prevent static charges during transfer of flammable liquids from one container to another.
- Report all spills or suspicious odors immediately.
- Fire extinguishers are to be kept in areas easily accessible to employees. Only approved fire extinguishers are to be used. They must have an inspection tag attached. Extinguishers are to be maintained in a fully charged, ready to operate state. Extinguishers are to be inspected before each use and documented annually. Training is provided to all employees who use or may use fire extinguishers.
- **NEVER** put yourself or others a risk while attempting to extinguish an incipient fire.
- **DO NOT USE** any fire hoses larger than 1-3/4", unless fully trained as an industrial firefighter.
- **NEVER** attempt to extinguish a pressurized-fuel fed fire.
- **DO NOT** direct a fire nozzle with a straight stream at any type of LPG fire. This action could extinguish the fire, producing an LPG vapor cloud capable of detonation.
- **DO NOT USE** fire monitors as the force can damage small equipment and certain high chrome alloy equipment cannot have water applied as cracking could occur.
- **DO NOT APPLY** water to any acid or caustic release as it can cause a violent reaction. Additionally, low concentration acids or caustics become extremely corrosive, causing an increasing leak condition.

IN THE EVENT OF A FIRE:

- Remain calm
- Only extinguish a fire when it is clearly within your abilities and the equipment available
- Know the location of the nearest alarm and how to activate the emergency system
- Know the evacuation routes and collection points
- If the fire cannot be extinguished, leave the area immediately and report to your evacuation area
- Await further instructions from the Incident Commander, or designated responsible personnel

BASIC FIRE SCIENCE:

- The combination of fuel, heat, oxygen equals the well-known fire triangle. To understand fire better, a fourth factor is added, a molecular chain reaction. This is due to the fact that fire results from a series of reactions in which complicated molecules "crack" into easily oxidized fragments. Disruption of this chain, along with the removal of fuel, heat or oxygen, is recognized as a method of fire extinguishment through the use of dry chemical extinguishers.
- **Heat Energy** - Can be produced by building up molec nposition) or breaking apart (decomposition) by heat or a solution when materials are in a liquid, or by combustion.
- **Heat Tra** – A law of physics states that heat ot ace
- **Fuels** – Those substances that will burn when h ot not pure as carbon, but compounds and mixtu as paper and wood.
- **Oxyg** up a major portion of the oceans a s crust and one-fifth of our atmosphere. Atmospheric oxygen is the major source of oxygen that supports combustion. Oxygen itself does not burn, however, without it, combustion is impossible. Normal burning is the combination of fuels with oxygen under the influence of heat.
- **Combustion** - A rapid oxidation or chemical combination accompanied by heat.
- **Oxidation** - The ability of materials to produce oxygen during a chemical reaction.
- **Spontaneous Combustion** - When oxidation is allowed to occur, enough oxygen is available, heat is produced, molecules become more energetic and combine with oxygen at an increasing rate, temperatures rise and visible heat (flames) are produced.

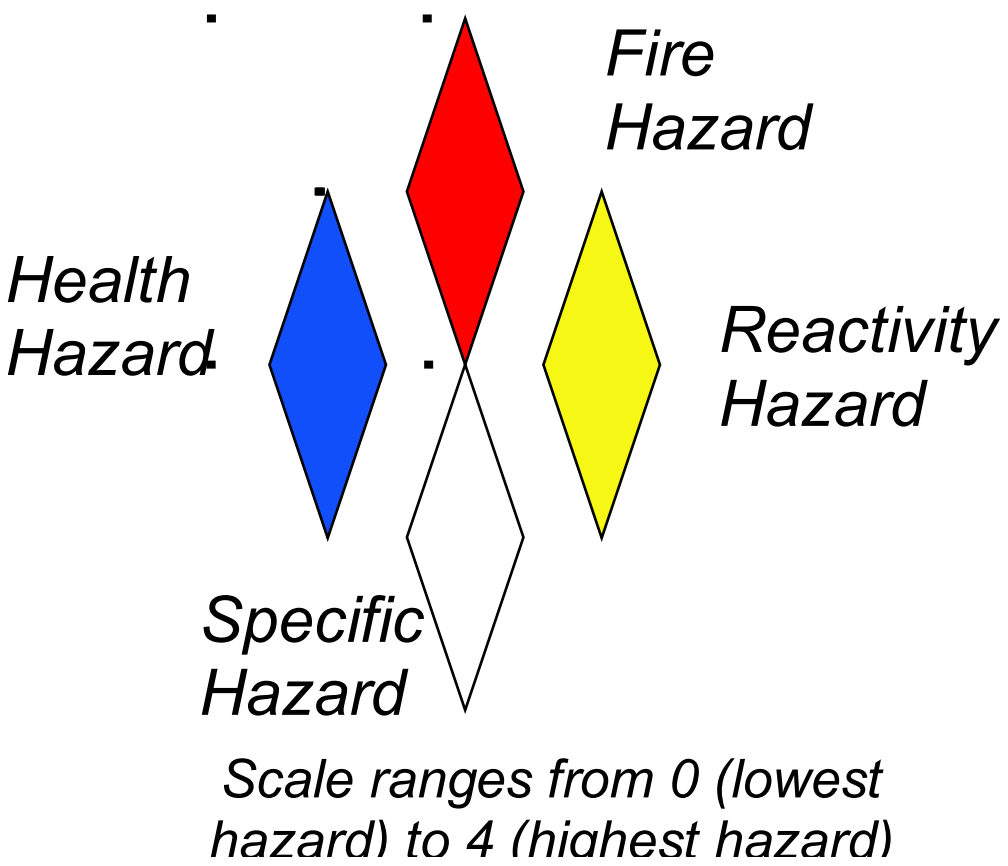


CLASSES OF FIRES:

- Class A - **Ordinary combustibles (wood/paper/textiles)**
- Class B - **Flammable liquids (gasoline/oils/grease)**
- Class C - **Live electric (wiring/generators/motors)**
- Class D - **Combustible metals (finely divided form/chips, turnings)**
- Class K – **Kitchen (oils/grease)**

TYPES OF FIRE EXTINGUISHERS:

- **Water** - extinguisher for ordinary combustible fires
- **Dry Chemical or CO2** - extinguisher for electrical equipment fires and for flammable liquid fires
- **Multipurpose Dry Chemical** - extinguisher for ordinary combustible fires, liquid fires, and electrical equipment fires
- **Foam** - extinguishing agent for hydrocarbon fires



NFPA Diamond:

Fire Hazard (Red)	**Health Hazard (Blue)**	**Reactivity (Yellow)**	**Specific Hazards (White)**
Flash Points 4 below 73^0 F 3 below 100^0 F 2 from 100 - 200^0 F 1 above 200^0 F 0 will not burn	4 Deadly 3 Extreme Danger 2 Hazardous 1 Slight Hazard 0 Normal Material	4 may detonate 3 shock and heat, may detonate 2 violent chemical change 1 unstable if heated 0 stable	Oxidizer = OX Acid = ACID Corrosive = COR Use no water = W Radioactive =

HAZCOM Program

PURPOSE

The purpose of this plan is to establish a program and procedures for the safe use of hazardous chemical substances at Campbell Companies.

The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 29 CFR 1910.1200 (General Industry) and 29 CFR 1926.59 (Construction Industry) call for the development of a hazard communication program when employees may be exposed to any chemical in the workplace under normal conditions of use or in a foreseeable emergency. In

2012, OSHA revised the HCS to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). As a result, this program has been revised to comply with the requirements of the OSHA HCS 2012. The written hazard communication program will include and address the following criteria in order to satisfy the minimum requirements of the OSHA HCS 2012:

• List of all hazardous chemicals known to be present in the workplace or individual work area

• Methods used to ensure that all containers, including pipes and holding tanks, are labeled, tagged or marked properly

• Methods used to obtain and maintain safety data sheets (SDSs)

• Methods used to provide employees with information and training on hazardous chemicals in their work areas

• Methods used to inform employees of the hazards of non routine work practices

• Methods used to provide the employees of other employers (e.g., consultants, construction contractors and temporary employees) on-site access to SDSs for each hazardous chemical that the other employer's employees may be exposed to while working in the workplace

• Methods used to inform the employees of other employers of precautionary measures that need to be taken to protect themselves during the workplace's normal operating conditions and in foreseeable emergencies

• Methods used to inform the employees of other employers of the labeling system used in the workplace

The hazard communication program will identify the following:

- Key personnel responsible for the program
- Location of chemical inventory list and SDSs
- Workplace labeling system
- Good work practices and procedures to minimize exposures

- How training will be performed
- Procedures to maintain the program and update the required information
- How records will be maintained

RESPONSIBILITIES

The Safety & Compliance Manager is responsible for administering the hazard communication program.

This person is also responsible for:

- Reviewing the potential hazards and safe use of chemicals
- Maintaining a list of all hazardous chemicals and a master file of SDSs
- Ensuring that all containers are labeled, tagged or marked properly
- Providing new-hire and annual training for employees
- Maintaining training records
- Monitoring the air concentrations of hazardous chemicals in the work environment
- Properly selecting and caring for personal protective equipment
- Directing the cleanup and disposal operations of the spill control team
- Identifying hazardous chemicals used in non-routine tasks and assessing their risks
- Informing outside contractors who are performing work on company property about potential hazards
- Reviewing the effectiveness of the hazard communication program and making sure that the program satisfies the requirements of all applicable federal, state or local hazard communication requirements

The purchasing agent is responsible for:

• Contacting chemical manufacturers and/or distributors to obtain SDSs and secondary labels for hazardous chemicals used or stored in the workplace

The receiving department is responsible for:

• Reviewing incoming hazardous chemicals to verify correct labeling

• Holding hazardous chemicals in the receiving area until receipt of the SDS for the product

Employees are responsible for the following aspects of the hazard communication program:

• Identifying hazards before starting a job

• Reading container labels and SDSs

• Notifying the supervisor of torn, damaged or illegible labels or of unlabeled containers

• Using controls and/or personal protective equipment provided by the company to minimize exposure

• Following company instructions and warnings pertaining to chemical handling and usage

• Properly caring for personal protective equipment, including proper use, routine care and cleaning, storage, and replacement

• Knowing and understanding the consequences associated with not following company policy concerning the safe handling and use of chemicals

• Participating in training

LABELS AND OTHER FORMS OF WARNING

Each container of hazardous chemicals received from the chemical manufacturer, importer or distributor will be labeled with the following information:

• Product identifier

• Signal word

• Hazard statement(s)

• Pictogram(s)

• Precautionary statement(s)

• Name, address and telephone number of the chemical manufacturer, importer or other responsible party

Campbell Companies will use the GHS labeling system for secondary containers. When a chemical is transferred from the original container to a portable or secondary container, the container will be labeled, tagged or marked with a GHS label containing the following information:

• Product identifier

• Signal word

• Hazard statement(s)

• Pictogram(s)

• Precautionary statement(s)

Portable containers into which hazardous chemicals are transferred from labeled containers and that are intended for the immediate use of the employee who performs the transfer do not require a label. If the portable container will be used by more than one employee or used over the course of more than one shift, the container must be labeled. Food and beverage containers should never be used for chemical storage.

Signs, placards, process sheets, batch tickets, operating procedures or other such written materials may be used in lieu of affixing labels to individual, stationary process containers as long as the alternative method identifies the containers to which it is applicable and conveys the information required for workplace labeling.

Where an area may have a hazardous chemical in the atmosphere (e.g., where extensive welding occurs), the entire area will be labeled with a warning placard.

Pipes that contain hazardous chemicals should be labeled in accordance with ANSI/ASME A13.1 and indicate the direction of flow. (Please note that this not a requirement of the OSHA HCS but a best practice or requirement of local jurisdiction.)

Workplace labels or other forms of warning will be legible, in English and prominently displayed on the container or readily available in the work area throughout each work shift. If employees speak languages other than English, the information in the other language(s) may be added to the material presented as long as the information is presented in English as well.

Note: After Dec. 1, 2015, distributors may not ship containers labeled by the chemical manufacturer or importer unless the label on the container meets GHS labeling requirements.

SAFETY DATA SHEETS

An SDS will be obtained and maintained for each hazardous chemical in the workplace. SDSs for each hazardous chemical will be readily accessible during each work shift to employees when they are in their work areas.

SDSs will be obtained from the chemical manufacturer, importer or distributor. The name on the SDS will be the same as that listed on the chemical inventory list. SDSs for chemicals or process streams produced by the company will be developed and provided by the Safety Coordinator.

The Safety Coordinator will maintain the master file of all original SDSs.

SDSs for new products or updated SDSs for existing products will be obtained by the purchasing agent and forwarded to the safety coordinator. The Safety Coordinator or Safety & Compliance Manager will then update the master file with new and/or updated SDSs.

If problems arise in obtaining an SDS from the chemical manufacturer, importer or distributor, a phone call will be made to request an SDS and to verify that the SDS has been sent. The phone call will be logged and a letter will be sent the same day. The company will maintain a written record of all efforts

to obtain SDSs. If these efforts fail to produce an SDS, the local OSHA office will be contacted for assistance.

EMPLOYEE INFORMATION AND TRAINING

Employees included in the hazard communication program will receive the following information and training prior to exposure to hazardous chemicals and when new chemical hazards are introduced to their work area:

• Requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 (General Industry) or 29 CFR 1926.59 (Construction Industry)

• Operations in the work area where hazardous chemicals are present

• Location and availability of the hazard communication program, chemical inventory list and SDSs

• Methods and observations used to detect the presence or release of a hazardous chemical in the work area, such as monitoring devices, visual appearance or odor of hazardous chemicals when being released

• Physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified of the chemicals in the work area

• Measures employees can take to protect themselves from hazards, such as appropriate controls, work practices, emergency and spill cleanup procedures, and personal protective equipment to be used

• Explanation of the labels received on shipped containers

• Explanation of the workplace labeling system

• Explanation of the SDS, including order of information and how employees can obtain and use the appropriate hazard information

Note: To facilitate understanding of the new GHS system, the OSHA HCS requires that employees be trained regarding the new label elements and SDS format by Dec. 1, 2013. Employers are required to update the hazard communication program and to provide any additional training for newly identified physical or health hazards no later than June 1, 2016.

NONROUTINE TASKS

The Safety Coordinator and the immediate supervisor of an employee performing a nonroutine task, such as cleaning machinery and other process equipment, is responsible for ensuring that adequate training has been provided to the employee on any hazards associated with the nonroutine task. Employees share in this responsibility by ensuring that their immediate supervisor knows that the nonroutine task will be performed.

Special work permits are required for the performance of certain nonroutine tasks, such as entry to confined spaces, breaking and opening piping systems, and welding and burning. For some special

tasks, employees are required to follow special lockout/tagout procedures to ensure that all machinery motion has stopped and energy sources are isolated prior to and during the performance of such tasks.

RECORDKEEPING

Records pertaining to the hazard communication program will be maintained by the Safety Coordinator. The Safety Coordinator will keep the following records:

• Chemical inventory list

• Hazardous material reviews

• Copies of phone call logs and letters requesting SDSs

• Employee training records

- Warnings issued to employees for not following the hazard communication program

Heat and Cold Stress Prevention Program

The company has developed this program to address the hazards associated with heat- and cold-related illness.

PREVENTING HEAT-RELATED ILLNESSES (HEAT STRESS)

Heat Stress

Heat stress takes place when your body's cooling system is overwhelmed. It can happen when heat combines with other factors such as:

- hard physical work;
- fatigue (not enough sleep);
- dehydration (loss of fluids); and
- certain medical conditions.

Heat stress can lead to illness or even death. The company has a duty to take every precaution reasonable in the circumstances to protect their workers.

Heat stress symptoms

Heat rash: itchy red skin.
Heat cramps: painful muscle cramps.
Heat exhaustion: high body temperature; weakness or feeling faint; headache, confusion or irrational behavior; nausea or vomiting.
Heat stroke: no sweating (hot, dry skin), high body temperature, confusion, or convulsions. Get immediate medical help.

Precautions when working in hot, humid conditions

- Increase the frequency and length of rest breaks.
- Provide **cool drinking water** near workers and remind them to drink a cup every 1/2 hour.
- Caution workers about working in direct sunlight.
- Train workers to recognize the signs and symptoms of heat stress. Start a "buddy system" because it's unlikely people will notice their own symptoms.
- Tell workers to wear light summer clothing to allow air to move freely and sweat to evaporate. They should always wear shirts to protect themselves from direct sunlight.

Cold Stress

When you're cold, blood vessels in your skin, arms, and legs constrict, decreasing the blood flow to your extremities. This helps your critical organs stay warm, but your extremities are at risk for frostbite.

Frostbite means that your flesh freezes. Blood vessels are damaged and the reduced blood flow can lead to gangrene.

The first sign of frostbite is skin that looks waxy and feels numb. Once tissues become hard, it's a severe medical emergency.

Wind chill accelerates heat loss—sometimes to a dramatic extent. For example, when the air temperature is –30°C,

- with no wind, there is little danger of skin freezing;
- with 16 km/h wind (a flag will be fully extended), your skin can freeze in about a minute; and
- with 32 km/h wind (capable of blowing snow), your skin can freeze in 30 seconds.

When your core temperature drops, you're at risk for hypothermia. Early signs of hypothermia are shivering, blue lips and fingers, and poor coordination. Soon your breathing and heart rate slow down, and you become disoriented and confused. Hypothermia requires medical help.

Precautions to prevent cold stress

- Wear several layers of clothing rather than one thick layer.
- Wear gloves if the temperature is below 16°C for sedentary work, below 4°C for light work, and below –7°C for moderate work.
- Take warm, high-calorie drinks and food.
- If your clothing gets wet at 2°C or less, change into dry clothes immediately to prevent hypothermia.
- If you feel hot, open your jacket but keep your hat and gloves on.
- Give workers warm-up and rest breaks in a heated shelter. Ensure work is not conducted only within allowable exposure limits, as per provincial OHS Regulations.

Electrical Safety Program

PURPOSE

To establish a program meeting or exceeding minimum acceptable standards for electrical safety-related work practices. The program includes requirements for the comprehensive training of qualified and unqualified workers relating to the use of personal protective equipment, proper use of tools while working near electrical apparatus, testing procedures, working with specialized fixed equipment for various job functions, understanding working clearance, determining nominal voltages and identifying exposed energized parts. More detailed information for site or job-specific procedures is given to employees through additional classroom and on-the-job training. National Fire Protection Association (NFPA) Standard 70E, Occupational Safety & Health Act (OSHA) Regulations 29 CFR 1910.269, Subpart S and other pertinent standards or local laws are incorporated in this program by reference.

OBJECTIVE

- To avoid injuries related to electrical contacts and arc flash events.
- To provide guidance in determining the level of protection needed by various electrical exposures.
- To determine the training required by employees who work on or near electrical equipment.

SCOPE

This program applies to qualified electrical workers with exposure to electricity through the operation of switches, controls, lockout procedures, power supply installations or maintenance-like activities with direct exposure to energized parts. It is not the intent of this program to detail procedures required to protect equipment, apparatus or wiring systems.

1.0 RESPONSIBILITIES:

1.1 Safety Department or Designee

1.1.1 Assure the requirements of this policy are followed.
1.1.2 Annual review of and, if necessary revise, the Electrical Safety Policy.
1.1.3 Ensure training and retraining is made available to qualified employees.

1.2 Supervisors

1.2.1 Conduct periodic inspection using the ***Worksite Observation Form*** (Attached Form B) to ensure safe work practices are followed.
1.2.2 Ensure that protective equipment is available and tested as required.
1.2.3 Obtain documented arc flash and shock hazard levels from facilities personnel and from the host employers for remote work.

1.3 Employees

1.3.1 Attend and understand Electrical Safe Work Practices training before working on or with electrical equipment or apparatus.
1.3.2 Have a full understanding of the construction and operation of the equipment before work is started.

1.3.3 Perform a daily job briefing to determine hazards and associated risk levels, work procedures, arc flash and shock boundaries, energy source controls, protective equipment needed, and any special precautions such as lighting, battery issues or pedestrian traffic, energy source controls (LOTO), and immediately remove unsafe equipment from operation.

1.3.4 Immediately report all potentially unsafe conditions to management. Should any employee observe any unsafe act or situation which could endanger equipment, structures, or employee safety, the employee has the authority and the responsibility to stop the work or procedure which is being performed.

2.0 DEFINITIONS:

2.1 Approach Distances – Must be established whenever work is to be conducted on electrical systems or components not in an electrically safe work condition.

2.1.1 Flash Protection Boundary – Distance beyond which appropriate flash protection equipment is required to prevent a 2nd degree burns (1.2 cal/cm²) or greater.

2.1.2 Limited Approach Boundary – Shock protection boundary designed to keep nonqualified persons at a safe distance away from exposed electrical components. Only qualified workers are allowed within this boundary.

2.1.3 Restricted Approach Boundary – Secondary shock protection measure whereby accidental movement can put a body part or conductive object in contact with live parts. Approach distances listed in Table 1 represent minimum distances required between energized parts to an unprotected person or equipment. Only qualified personnel with proper protective equipment (i.e. rubber gloves) is allowed within this boundary. This boundary is also known as the OSHA Minimum Approach Distance. OSHA explains this boundary as "arms reach plus the minimum approach distance".

2.2 Arc Flash Hazard- A dangerous condition associated with the possible release of energy caused by an electric arc.

2.3 Disconnecting means – A device by which the conductors of a circuit can be disconnected from their source of electrical supply. As an energy isolation control, it shall have the capability of being locked out.

2.4 Enclosure – A case or housing of apparatus surrounding an installation to prevent personnel from accidentally contacting energized parts. If the enclosure is conductive it must be grounded or bonded to a grounding system.

2.5 Energized Electrical Work Permit – a document used for working on electrical parts that may not be de-energized because a greater hazard may exist. The permit provides a guideline for working safely with approvals to agree on safe work practices. The permit does not apply to troubleshooting, testing, or inspecting electrical apparatus.

2.6 Exposed – Capable of being inadvertently touched or approached nearer than a safe distance by a person. Not insulated.

2.7 Grounding system – A conducting connection to the earth.

2.8 Guarded – Covered, shielded, fenced, enclosed to otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats or platforms to remove the likelihood of approaching exposed electrical parts to a point of danger or contact by persons or objects.

2.9 Isolated – Not readily accessible to persons unless special means for access are used.

2.10 Non-Qualified Worker – One who is not exposed to hazards and will not approach exposed parts of electric circuits operating at 50 volts or more to ground.

2.11 Outlet – A point on the wiring system at which the current is taken to supply utilization equipment.

2.12 Qualified Worker – One who has skills and knowledge related to the construction and operation of the equipment and installations and has received safety training to recognize and avoid the hazards involved.

3.0 WORK PROCEDURES:

The following procedures apply to qualified electrical workers.

3.1 Job Briefing – Before starting each job involving exposed live equipment, the employee in charge shall conduct a Risk Assessment and Job briefing with the employees involved. The briefing shall cover the following:

- 3.1.1 Hazards associated with the job. This includes identifying the exposures of shock (nominal voltage) and arc flash hazards. Once determined, assess the risk level by analyzing the probability of an incident occurring and the severity if it does. If unknown, use Table 2 in this program.
- 3.1.2 Work procedures
- 3.1.3 Special precautions include: unshunted CTs, draining capacitors for 5 minutes, adequate lighting and gradient potential issues.
- 3.1.4 Energy source controls includes all lockout tagout points
- 3.1.5 Personal protective equipment

3.2 Additional job briefings shall be conducted if significant changes that might affect the safety of the employee occur during the course of the work.

3.3 Qualified worker shall also consider emergency procedures during this briefing to be prepared in the event of an electrical emergency.

3.4 If working alone, the items listed above shall be carefully considered before working on or near energized systems.

3.5 The ***Worksite Observation Form*** (Form B) may be used as a pre-work hazard assessment tool.

3.6 Engineers/Technicians should receive information from the client associated with voltage and arc flash hazards before beginning work on exposed energized parts.

4.0 SELECTION AND USE OF SAFE WORK PRACTICES:

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from electrical contacts.

4.1 A thorough inspection of all equipment shall be done to evaluate for potential hazards. Ensure the integrity of all enclosures and insulation to reduce the risk of injury or equipment damage.

4.2 Live parts to which an employee may be exposed shall be de-energized by a qualified worker as specified in the Lockout Tagout Program before the employee works on or near them unless a greater hazard is introduced. Only qualified workers are allowed to complete tasks such as testing, voltage measuring, and troubleshooting within the limited approach boundary. The qualified worker shall test to ensure that the previously energized part is de-energized using a UL listed meter rated for the voltage being tested.

Testers shall be verified in good condition by testing before and after the test at a known source. Conductors and parts of electrical equipment that have been de-energized but not been locked or tagged out shall be treated as live parts.

4.3 If it is not feasible to de-energize exposed live parts, other safety-related work practices shall be used to protect the exposed employees. Only qualified personnel are allowed to work where exposed to energized equipment rated greater than 50 volts. Procedures utilized to perform this work shall include special precautionary techniques such as use of personal protective equipment, insulating and shielding material or insulated tools. An ***Energized Work Permit*** (Attached Form A) shall be completed when working on electrical exposed parts before beginning this work with approvals from the supervisor or on-site authority. This work includes moving, cleaning, or attaching other parts to exposed energized parts. The form is not required for inspection, troubleshooting, or testing processes.

4.4 No work on or near exposed live parts is permissible without proper illumination.

4.5 Maintenance shall be performed on electrical equipment in all facilities as recommended by the manufacturer or maintenance standards such as NFPA 70B.

4.6 Personnel working in confined or enclosed spaces shall de-energize or effectively barricade with protective shields or barriers any exposed live parts. Doors or hinged panel shall be secured to prevent swinging freely.

4.7 Conductive materials and ladders shall be handled in such a manner that will prevent them from encroaching clearances as specified in Table 1. Only non-conductive ladders are allowed for use near energized parts.

4.8 Conductive apparel such as a chain, watch or ring shall not be worn while working within the limited approach boundary.

4.9 Interlocks shall not be bypassed unless a qualified person is temporarily working on equipment rated at less than 600 volts. For energized equipment rated at more than 600 volts, interlocks shall NEVER be bypassed.

4.10 Work on exposed energized systems greater than 600 volts is not permitted unless specifically trained. Two qualified workers are required to open/close, rack out/in, test, and install temporary grounds on medium voltage equipment. Before grounding and working on medium voltage parts as de-energized, the parts must be tested using a proper tester rated for the voltage with a hot stick only.

4.11 Unqualified personnel are restricted from access to exposed energized parts of voltages greater than 50 volts. Barricades shall be installed at the limited approach boundary or arc flash boundary (whichever is greater) to prevent non-qualified personnel from encroaching electrical hazards.

4.12 Blind reaching is not allowed in any electrical panels or equipment.

4.13 All Troubleshooting (and or) Testing above 50 Volts, require voltage insulating gloves when exposed to conductive electrical parts until tested de-energized.

4.14 Inform the host employer if a hazardous condition is introduced or identified including corrective measures taken or required to make the condition safe.

4.15 All personnel shall maintain 10 feet from overhead power lines including handheld equipment and vehicles. (see Table 1 limited approach movable column for non-qualified personnel). Approach boundaries listed in Table 1 as defined in Section IV shall be adhered to by all qualified personnel.

4.16 An arc flash boundary shall be determined before the working near exposed energized parts. This information should be provided by the customer. Use information in Table 2 for guidance where no arc flash data is available. First determine arc flash PPE category

to determine the PPE required for protection, then the arc flash boundary (point where the arc flash will drop to 1.2 cal/cm²).

Table 1. Approach Boundary to Live Parts for Shock Protection

VOLTAGE RANGE Phase to Phase	LIMITED APPROACH BOUNDRY		RESTRICTED APPROACH BOUNDRY
	Movable	Fixed	
0 - 50	Avoid Contact	Avoid Contact	Avoid Contact
51 - 150 volts	10 ft. 0 in.	3 ft. 6 in.	Avoid Contact
151 - 750 volts	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.
751 - 15,000 volts	10 ft. 0 in.	5 ft. 0 in.	2 ft 2 in.

USE OF PORTABLE ELECTRIC EQUIPMENT

This section applies to cord and plug connected equipment.

5.1 This equipment shall be handled in a manner which will not cause damage. Avoid raising and lowering the equipment using flexible cords. Do not fasten cords with staples or other fasteners that may damage the outer jacket.

5.2 Portable cord and plug equipment shall be inspected before use. If damage is detected it shall be removed from service. Extension cords shall periodically be given a continuity test along with the inspection to determine open points or short circuits (test for full continuity on each wire and zero continuity from wire to wire).

5.3 Grounded type tools or equipment shall have the grounded-type plug and shall be inspected to ensure compatibility with the receptacle. Adapters may only be used in conjunction with GFCI protection.

5.4 Ground Fault Circuit Interrupter (GFCI) devices shall be used for all cord and plug activities related to maintenance and while performing any work outside or in damp locations. Permanent GFCI installations are required for wet or damp locations such as vehicle maintenance shops. Devices may include GFCI receptacles, receptacles protected by GFCI breakers, or field operations - portable cord-connected GFCI.

6.0 POWER CIRCUITS

This section includes the use of circuit breakers and fuses.

6.1 Load rated circuit breakers shall be used for opening and closing circuits. Fuses, terminal lugs and cable splice connections shall not be used to make or break load.

6.2 After a circuit has been de-energized by a circuit protective device, the circuit shall not be reenergized until it has been determined safe to do so by a qualified employee.

6.3 Only qualified workers may perform testing work on electrical circuits. Test equipment shall be rated for the voltage to which they will be connected. A hot stick applied voltage tester is required to test voltages greater than 600 volts.

6.4 Electrical equipment capable of igniting a spark shall not be used near flammable or ignitable material.

6.5 Electrical apparatus shall be maintained as per manufacturer requirements or industry standards.

SAFETGUARDS FOR PERSONAL PROTECTION

This section includes the use of Personal Protection Equipment (PPE).

7.1 Selected employees will be furnished with and shall use PPE when a hazardous condition exists.

7.2 The level of PPE used is determined by conducting a hazard assessment and choosing a level of protection that significantly reduces or eliminates the risk of injury related to the hazard. Conducting a job briefing and consulting the information in this program prior to performing any work will determine the hazards associated with the job. This process in conjunction with information on the Tables within this program will assist in determining the level of protection needed to work with or near electrical apparatus. See Table 2 to determine the Arc Flash PPE Category. A PPE guide is included at the end of this program for technicians/engineers for determining PPE types.

7.3 If equipment has a greater available fault current or clearing time than listed, further analysis is required to determine adequate protection.

Table 2. Arc Rated PPE Category Classification

TASK	PARAMETERS Fault Current Clearing Time	ARC FLASH PPE CATEGORY	ARC FLASH BOUNDARY At Work Distance
Electrical work on systems rated 240 volts or less including: operate single phase circuit breakers if maintained, or fused switches and disconnects with doors closed, cable trough or tray cover removal, work on control circuits 50 volts or less, and battery maintenance (less than 1 kA), meggar testing or similar diagnostics.	NOT APPLICABLE	NOT APPLICABLE (Safety Glasses, cotton clothing)	NOT APPLICABLE
Working on electrical systems rated at 240 volts or less including: opening hinged covers on control circuit enclosures and voltage testing.	≤25 kA & Max 2 cycles	**1** (Glasses, ear plugs, leather boots, Arc Shield 4 cal/cm² clothing)	19 in. Work 18 in.
Working on or near exposed energized parts rated at 600 volts or less where exposed to electrical parts, but no physical work is performed that may cause a serious arc flash and that is not listed in PPE 3 category. Work on 125 VDC systems 4 kA or less.	≤65 kA & Max 2 cycles or ≤42 kA & Max 30 cycles	**2** (Glasses, ear plugs, leather boots, Arc Shield Balaclava hood, 8 cal/cm² clothing)	5 ft. Work 18 in.
Working on or near exposed energized parts rated at 600 volts or less including removing bolted covers on exposed 480 volt cabinets with generator running, open cover to exposed parts of	≤35 kA &	**3** (Glasses, ear plugs, leather boots,	20 ft.

an ATS or UPS enclosure, racking in or out 480 volt breakers on an energized bus or working on a 480 volt MCC.	Max 30 cycles	25 cal/cm² Arc Suit w/hood)	Work 18 in.
Exposing energized parts rated at greater than 600 volts nominal including pad-mounted transformers and main switchgear, racking in or out the generator breaker and transfer switches, and opening doors to load bank connection points for test if connected to the generator side of breaker, phasing or other energized work, testing and grounding with a hot stick.	≤35 kA & Max 15 cycles	**4** (Glasses, ear plugs, leather boots, 25 cal/cm² Arc Suit w/hood)	40 ft. Work 36 in.

Note: The hazards may be identified on an equipment label or arc flash data sheet where an arc flash engineering study has been conducted. This data will take precedence over information in Table 2.

7.4 Personal protective equipment shall be used to protect from electrical hazards that have not been eliminated by de-energizing or guarding. All personal protective equipment shall be inspected prior to each day's use and immediately following any incident.

7.4.1 Eye Protection – Plastic rimmed safety glasses with side shields meeting Z87 standards shall be used at all times while working on or near exposed live parts.

7.4.2 Face Protection – A tinted arc shield with a balaclava-style hood shall be worn when working where there is a danger of flying objects from an electrical arc. Safety glasses shall be worn in conjunction with the shield. A full arc rated hood shall be used for high incident energy levels on Category 3 &4.

7.4.3 Head Protection – Non-conductive hard hats shall be worn for shock protection where employees are exposed to electrical conductors that could contact the head.

7.4.4 Hearing Protection – Arc-rated hearing protection is required for all electrical switching of devices or where exposed to energized electrical parts rated greater than 50 volts.

7.4.5 Rubber Gloves (rated for the voltage) shall be worn when avoiding contact with voltages over 50 volts where restricted approach boundary distances are encroached (e.g. OSHA "arms reach plus minimum approach distance"). Rubber gloves shall be air tested before each days use and dielectrically tested every 6 months (or every month if used in mine facilities governed my MSHA, Title 30 of the code of Federal Regulations). Class 0 rubber gloves may be used on voltages up to 750 VAC or 1000 VDC. Class 2 rubber gloves are required for voltages greater than 750 volts but less than 15,000 volts, however direct contact with energized parts using rubber gloves with voltages exceeding 750 volts from a ground position is prohibited.

7.4.6 Insulated Rubber Barrier Material approved for use on energized equipment may be used to isolate the employee from the energized parts in lieu of using rubber gloves to avoid contact on lower voltages. Rubber gloves are required to install the barrier material. When exposed to voltages greater than 150 volts, insulated mats shall be placed on the floor surrounding the generator. (PPE CAT 1-4)

7.4.7 Clothing – Arc rated clothing shall be used on the outermost layer at a minimum while working near exposed live parts. Natural fiber undergarments are suggested to avoid melting into the skin in the event of an arc flash. In addition, if conditions dictate that a significant flash may result, arc rated (AR) clothing may be required.(See Table 2 for PPE Category levels and Table 3 for calorie/cm² ratings where the actual arc flash hazard is unknown)

Table 3. Protective Clothing Requirements

ARC FLASH PPE CATAGORY	CLOTHING DESCRIPTION	Minimum ATPV*
1 and 2	AR shirt and AR pants or AR Coveralls over cotton	8
3 and 4	AR switching coat and pants, Arc Hood	40

* ATPV – Arc Thermal Performance Exposure Value
AR – Arc Rated

7.4.8 Hot-Line Tools – Hot line tools shall be used to test voltages or place protective grounds on systems greater than 600 volts. An approved hot-line voltage tester connected to a hot-stick shall be used to verify that all circuits to be worked on are de-energized. The tester shall first be brought into contact with a live source (if possible) to ensure it operates correctly, then it shall be put into contact on all phases of the previously energized parts and then again to an energized source. If no source is available, a self-test method shall be utilized by engaging the test mechanism on the tester.

7.4.9 Grounding for Protection – No work may be performed on any electrical components rated at greater than 600 volts without first testing to ensure parts are de-energized (USING ONLY A VOLTMETER RATED FOR THE VOLTAGE), then installing grounds to all previously energized parts. Effective barricades shall be in place to avoid contact with any other source of electrical energy before attempting to install grounds. Temporary grounding equipment shall be tested every 3 years.

7.4.10 Foot Protection – Safety-toe leather boots shall be utilized as needed. Electrical-rated boots should be considered to provide additional resistance for protection of the worker. Extreme care shall be maintained in the immediate area where hazardous step potential or voltage gradients on the earth may be present from medium or high voltage exposures. Short heel-to-toe steps will minimize gradient potential should be used when a fault occurs on medium voltage equipment.

8.0 ADDITIONAL SAFETY REQUIREMENTS

This section includes the use of signs and barriers or other means to protect non-qualified workers.

8.1 Safety symbols or signs shall be prominently displayed to warn employees about electrical hazards. This may include warning signs on panel doors, doors to electrical rooms or any hazardous location which may endanger employees. If signs are not in place on customer-owned equipment and voltage is unknown, covers or doors shall not be opened until these voltages are determined.

8.2 Protective shields, protective barriers, or insulating material shall be used to protect employees from shock, burns or electrically related injuries while the employee is working near exposed energized live parts. Conductive barricades shall not be used. Barricades i.e. “Danger Tape” placed waist high, shall be used to prevent non-qualified workers from entering an electrical exposure boundary. A second qualified worker may

serve as an attendant in lieu of barricade to ensure non-qualified workers do not approach closer than the limited approach boundary.

9.0 TRAINING

9.1 The training requirements contained in this section apply to qualified workers who face a risk of electric shock that is not reduced to a safe level by electrical installation requirements. Employees that face such a risk are required to be trained. Other employees who may reasonably be expected to face comparable risk of injury due to electric shock or other electrical hazards must also be trained.

9.1.1 Type of training – The training required by this section may be of the classroom or on-the-job type. The degree of training must be determined by the risk to the employee.

9.1.2 Content of Training – Qualified employees shall be trained in and familiar with the safety-related work practices that pertain to their respective job assignments.

9.1.3 Frequency of Training – Training shall be conducted upon assignment and every 3 years at a minimum thereafter. For the purposes of this document a person must have the above training in order to be considered qualified. Qualified persons whose work on energized equipment involves either direct contact or contact by means of tools or materials shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials and insulated tools. New hires shall be trained upon assignment. Training shall be documented.

9.2 Each qualified electrical worker shall be instructed in CPR techniques, use of AED, and methods to safely release victims from contact with electrical parts.

9.3 A demonstration of employee's knowledge shall be documented. This can be via written test, documentation of successful completion of training, and by on-site demonstration of understanding through workplace observations. Each qualified employee should be evaluated at least annually to ensure continued understanding by using ***Worksite Observation Form*** (Form B).

9.4 A qualified employee shall also be knowledgeable of the construction and operation of equipment and specific work methods associated with the electrical task. Employees who are not qualified persons shall also be trained in and familiar with any electrically related safety practices not specifically addressed in this document but which are necessary for their safety. Qualified persons (i.e. those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following:

9.4.1 The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment by identifying exposed conductive parts that are isolated from ground and performing a voltage test.

9.4.2 The skills and techniques necessary to determine the nominal voltage of exposed live parts by examining labels, nameplates, one-line diagrams, or for medium voltage, the construction and spacing. Colored tape may be an indicator but should not be relied upon to determine nominal voltage.

9.4.3 The approach boundaries specified in Table 1 and the corresponding voltages to which the qualified person will be exposed.

9.4.4 The proper inspection, donning and use of personal protective equipment including EH hardhat, arc protection equipment and clothing, rubber gloves and insulating materials and tools.

9.4.5 Understand the hazards associated with the work to be performed before work begins and methods of protection needed to perform the work safely.

9.5 Retraining will be conducted when:

9.5.1 An employee is not in compliance with the company's safe work practices.

9.5.2 There is a change in the workplace that requires different safe work practices than those an employee would normally use.

10.0 COMPLIANCE:

10.1 All electrical work shall be done to N.E.C. (National Electrical Code) standards. No short cuts are permitted. Electrical work will be performed by qualified personnel only. On-site training will be conducted by qualified personnel.

10.2 Contractors shall abide by all rules set forth in this program.

10.4 Engineers/Technicians should obtain documented information on shock and arc flash levels from the client prior to starting work as outlined in NFPA 70E standards.

10.3 Conscientious observance of electrical safety procedures is expected of all qualified and nonqualified personnel; neglect of such responsibilities may subject the individual to serious injury. Failure to follow these procedures may result in corrective action.

10.4 Workplace Safety Observations shall be conducted for each affected employee at least once annually using ***Workplace Observation Form*** (Form B).

Energized Work Permit

Person Requesting the Work: _____Date: _____

Circuit/Equipment/Job Location: _____

Description of Equipment and Location: _____ Voltage:_____
Justification for Working Energized:
_____
_____

Qualified Person(s) Assigned to Energized Work:
_____

☐ Job Briefing included:

_____

☐ Describe Safe Work Practices:_____

☐ Approach Boundaries: Restricted: _____ Limited: _____ Flash:_____

☐ Personal Protective Equipment: ☐ Rubber Gloves ☐ Insulated Tools ☐ Arc Hood ☐ 100% cotton clothing ☐ AR Clothing ____ cal/cm² ☐ Arc Shield ☐ Safety Glasses ☐ Hearing Protection ☐ Rubber Mat ☐ Rubber Barrier Material ☐ Barricade Tape ☐ Lockout Tagout Equipment ☐ Other _____

☐ Provisions to Restrict Access of Unqualified Persons:

_____

☐ Safe Work Procedures:

_____

☐ I believe the work can be performed safely. If not, return to requester.

Electrically Qualified Person other than requester:
_____

Sign: _____ Date: _____

_____ _____
Supervisor or Customer Authority Safety Department or signee
Date: _____ Date: _____

Work Place Safety Observation

Name of Observer:_____ Time: _____ AM/PM Date: _____

Worker Observed: _____

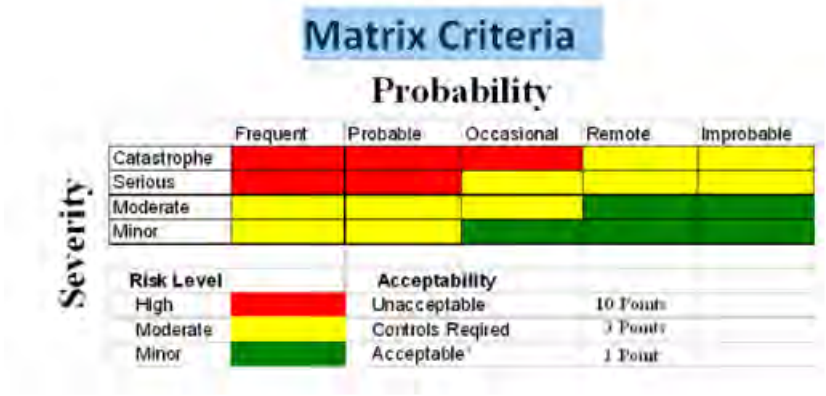
Please check the boxes below including a brief description of the discrepancy related to each "No" checked, in the comment section or back side of form.

Job and Location: _____

I. PERSONAL SAFETY	OSHA Ref. 29 CFR 1910	Worker 1 Yes	Worker 1 No	Worker 1 NA	Worker 2 Yes	Worker 2 No	Worker 2 NA	Specify	Score
AR Clothing On	.132/.335							_____ Cal/cm²	
Face and Eye Protection Used	.133								
Hard Hat Used	.135								
Arc Shield Used	.132/.335								
Hearing Protection Used	.95								
Rubber Gloves Tested and Used	.137								
Leather Gloves Used	.138								
Insulated Tools Used	.335								

II. PROPER WORK METHODS	OSHA Ref	Yes	No	NA	Score
Job Briefing Conducted (or if alone, all 6 topics considered)	NFPA 70E				
Can Identify Potentially Energized Parts Y/N ___, Nominal Voltage: _____volts	.335				
Can State Approach Boundaries: Limited: ____ Restricted: ____ Arc Flash:____	.335				
Accurately Determined the Arc Flash Hazard at 18" Working Distance ____	NFPA 70E				
Lockout/Tagout Equipment and Procedures Used Properly	.147				
Fire Extinguisher Available and Charged	.157				
Proper Illumination Available (minimum 10 ft candles)	.333				
Testing properly with CAT III Meter to Determine all Parts De-energized	.335				
Ladder and Aerial Lift Safety Practices Used	.25 .67				
Barricade or Barriers Installed if Working Near Exposed Energized Parts	.333				
Housekeeping Clean and Neat on Job Site	.333				
Visually Inspect Equipment, PPE, Meters, Cords and Test Leads	.334				
Equipment Enclosure Adequately Grounded	.304				
GFCI Equipment Tested and Used for Extension Cords	.304				
Precautions Used for Working Near Ignitable Material	.334				
Medium Voltage: Visual Open Point Properly Verified	.269				
Tested Using HV Tester with Hot Stick	.269				
Temporary Grounds Installed with Hot Stick	.269				
Demonstrate Knowledge of Construction and Operation of Equipment	.335				

Total Deductions _____ **SCORE (100-Deductions)** _____



The purpose of a field audit is not only to assess safe work procedures, but also to assess the effectiveness of training and provide support to field personnel. This system is designed to provide a generic system of scoring eliminating as much subjectivity as possible. The scoring totals are based on 100 so that the auditor, upon completion can provide a number to the crew that will have meaning to them. The scores will also provide a means to track continuous improvement and trends that will alert the user to trouble areas where special emphasis may prevent future injuries.

The chart above is based on Severity and Probability. To make a determination of probability, it may work better to assess frequency and Likelihood on a 1-5 scale. The average of the 2 will be the probability level. Below are examples of infractions of different levels:

Minor infractions

An infraction that is not a violation of OSHA regulations, and is not likely to cause harm (i.e. not wearing safety glasses while working with no eye hazard).

Moderate infractions

An infraction that is not in compliance with OSHA regulations and may cause minor physical harm if continued (i.e. not using PPE, not inspecting equipment before use, first aid supplies not adequate, fire extinguisher not inspected).

Serious infractions

An unsafe practice or violation of a regulation which may cause a serious injury or death (i.e. not wearing rubber gloves near energized parts, not enough guarding of live parts, etc.). This infraction would require an immediate shutdown of the work.

PPE Guide for Qualified Electrical Workers

Class 0 Glove Kit (Salisbury)

Insulated Glove

Leather Protector

Glove Bag

12 cal/cm2, Arc Flash Protection Faceshield Unit For Full Brim Hard Hats

Protective Bag

Orange Chin Guard

Transparent Chin Guard

Replacement Faceshield Window 12 cal/cm2

AR Attachable Task Light (1)

Attachable Task Light Clip (1)

Attachable Task Light (1) & FLCLIP

Class 2, 14" Gloves

Leather Protector

Glove Bag (GB116)

Oberon AK-LCI4B-T3 +HVS 40 Cal Suit With Hood and Fan With Kit Bag

Class 1 Rubber Roll Blanket

Maximum working Voltage 7,500 Volts- AC 3' x 30' Roll (Cut 3' x 3' per technician)

Plastic Blanket Fastener (4 per blanket)

Folded Shotgun (Hastings)

Salisbury Shotgun Case

Three Leg (4' each)

Fourth Single Leg, T-Handle (6' each) - MacLean

http://www.macleanpower.com/products/item.asp?ITEM_ID=1360

Voltage Detector Kit

Tester 240V to 230kV

Case

Shotgun Adapter

White Cotton Knit Glove Liners

Summer

Winter

 Ideal Bag	 20 Cal Navy Blue Hood Sock Oberon	 Reusable ARC Ear Plugs
 Premium Flame Resistant Solid Vest	 Double-Ended Starting Driver 12" Phillips / Straight	 3/16 Slotted Screw Driver 1/4 Slotted Screw Driver #1 Phillips (3") #2 Phillips (6")
 7" Needle Nose Pliers	 Ideal Breaker Lockout	 Breaker Lockout Toggle
 IDEAL Fuse Puller	 Breaker Lockout Large Breaker	 110 Volt Plug Lockout
 Plug Lockout 220/500 Volt	 Multi-Pole Breaker Lockout	 Wall Switch Lockout
 Gate Valve (1" – 2½")	 Red Master Pad Lock	 Tags (25 count)
 Hasps (2) Lobster Claw	 Red "Danger" Barricade Tape	 Black Marking Pen

Assured Grounding Program

PURPOSE:

The purpose of this policy is to specify procedures and guidelines to eliminate all injuries resulting from possible malfunctions, improper grounding and/or defective electrical tools.

GROUND FAULT PROTECTION

The company will use ground fault circuit interrupters or assured equipment grounding conductor program to protect employees on the job site. These requirements are in addition to any other requirements for equipment grounding conductors.

Ground-fault circuit interrupters (GFCI) - All 120 volt, single phase, 15 and 20 ampere Receptacle outlets on the job site, which are not part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground fault circuit interrupters for personnel protection. Receptacles on a two wire, single phase portable or vehicle mounted generator rated not more than 5kw, where the circuit conductors of the generator frame and all other grounded surfaces, need not be protected with ground fault circuit interrupters.

Assured equipment grounding conductor program - The company has established the following assured equipment grounding conductor program on the job site covering all cord sets, receptacles which are not part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This program will comply with the following minimum requirements:

(A) A written description of the program, including the specific procedures adopted by the employer, shall be available at the job site for inspection and copying by and any affected employee.

(B) The manager and/or designated employee have been designate to implement the program as defined by OSHA 1926.304(f).

(C) Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indications of possible internal damage.

Equipment found damaged or defective shall not be used until repaired. Damaged or defective items shall be tagged "DO NOT USE" and removed from service until repaired and tested.

(D) The following tests shall be performed on all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and cord and plug connected required to be grounded:

(1) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous

(2) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

(E) All required test shall be performed:

(1) Before first use;

(2) Before equipment is returned to service following any repairs;

(3) Before equipment is used after any incident which can be reasonably suspected to cause damage (for example, when the cord set has been run over; and

(4) At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

(F) The company will not make available or permit the use by employees on any equipment which has not met the above requirements.

(G) Tests performed as required will be recorded. This test record shall identify each receptacle, cord set, and cord and plug connected equipment that passed the test and shall indicate the late date it was tested or the interval for which it was tested. The equipment will be identified with a nonconducting tag or other means of identification. This record shall be kept by means of logs, color coding, (example – colored plastic tape writer tape) or other effective means and shall be maintained until replace by a more current record. The record shall be made available on the job site for inspection by any affected employee.

(H) The company will use a different color plastic tape for each quarterly inspection. Red 1st Quarter, Blue 2nd Quarter, Green 3rd Quarter, and Yellow 4th Quarter. A plastic tape writer will be used to identify each cord set by a number (SP01, 02, 03 etc.). A written record will be maintained on all cords sets and news sets as they are added. A Volt/OHM meter will be used to test continuity of each set.

Energy Control (Lockout/Tagout) Program

Purpose

This Energy Control (Lockout/Tagout) Program aims to ensure that, before any employee performs any servicing or maintenance on a machine or piece of equipment where the unexpected energization or start-up of the machine or equipment, or the release of stored energy, could occur and cause injury, the machine or equipment is isolated from the energy source and rendered inoperative. It is our intent to comply with OSHA requirements.

CARDINAL RULE #3 Unauthorized by-pass of a LOTO tag or lock is NOT permitted.

- No by-pass is permitted except under extenuating circumstances under the direction of a supervisor, manager and safety department representative by following our abnormal lock removal process.
- The person who placed the lock or tag will be required to remove it.

Administrative Duties

The Safety & Compliance Manager, our company's Energy Control (Lockout/Tagout) Program Administrator, is responsible for establishing and implementing the written program. This person has full authority to make necessary decisions to ensure the success of this program. The Safety & Compliance Manager is also qualified by appropriate training and experience that is commensurate with the complexity of the program to administer or oversee our program and conduct the required evaluations of program effectiveness. Copies of the written Energy Control (Lockout/Tagout) Program may be obtained in the Salt Lake Branch or via our internal web site at www.mywheeler.net.

If after reading this program, you find that improvements can be made, please contact The Safety & Compliance Manager. We encourage all suggestions because we are committed to the success of our written Energy Control (Lockout/Tagout) Program. We strive for a comprehensive, integrated prevention system that obtains clear understanding, safe behavior, and involvement in the program from every level of the company.

Machine/Equipment Hazard Analysis Procedure

Our procedure for analyzing the energy source hazards of a machine or piece of equipment is listed below. This procedure will be performed by the team leader, supervisor or safety department member.

1. We ensure that those who make machine or equipment analysis decisions are equipped with appropriate information and knowledge about the following before making any

machine or equipment analysis decisions: recognize and understand energy sources and how to control them.

2. We assess the following to identify the hazards of each machine or equipment initially, after changes/modifications or if an accident, incident or injury occurs: We will assess energy sources, control methods employed and standard operating procedures.

3. We determine potential hazardous energy sources for each machine or piece of equipment, the location of the source(S) and the location of the device(s).

4. All findings and determinations are documented along with the date and filed in the Safety Department.

5. The findings and determinations are used to create or update all energy control (lockout/tagout) procedures and perform employee training.

Energy Control (Lockout/Tagout) Procedures

Our energy control (lockout/tagout) procedures meet the OSHA requirements. We have electronic and paper copies available in the Safety Department and have provided them in an electronic format to our employees.

Training

As soon as the first day is scheduled for a new or transfer employee, we make arrangements with department management and the trainer(s) to schedule lockout/tagout training session(s) to ensure that employees who need training receive it prior to using energy control procedures or conducting lockout/tagout activities.

Our online Learning Management System and Tyfoom presents general training according to specifications in the OSHA regulations. Our Training Department Technical trainers presents employees with workplace-specific training in individual energy control procedures, energy control devices, and lockout/tagout devices, as necessary. Training is done either online in the Learning Management System or in a classroom instructor lead training combined with hands on demonstration.

Retraining - We identify the employees who will need lockout/tagout retraining at the following times: When there is a change in job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures. Retraining will also be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of energy control procedures.

We make arrangements with department management and the trainer(s) to schedule lockout/tagout retraining session(s) to ensure that employees who need retraining receive it prior to using energy control procedures or conducting further lockout/tagout activities.

The supervisor, technical trainers or Safety Department presents retraining according to specifications in the OSHA regulations. Retraining will be done either at the Salt Lake Branch or at the other various branch stores as needed. Retraining will be either an online or classroom format combined with hands on demonstration

Training/Retraining Certification

We certify all lockout/tagout general and specific training and retraining. We use Tyfoom and LMS to maintain training records. Certification records contain the trainee's name, date of training and knowledge check score

Periodic Inspections

Authorized employees review the energy control procedures with each authorized employee (and also each affected employee when tagout is used) according to the following:

Machine/Equipment:	**Authorized employees who perform the inspection:**	**Frequency of inspection and how inspection is implemented:**	**Location of inspection records:**
Caterpillar Heavy Equipment	Supervisor, Team Leader, Safety Department	Annually	Safety Department
All Other Types of Equipment	Supervisor, Team Leader, Safety Department	Annually	Safety Department
Facilities Equipment	Supervisor, Facilities Department	Annually	Safety Department

These inspections provide for a demonstration of the procedures. We determine whether steps are being used and followed, whether the procedures are adequate and effective to provide protection, and what changes, if any, are necessary.

Any necessary changes and corrections of deviations or inadequacies identified during periodic inspections are made by: The Safety Department. The supervisor, technical trainers or Safety Department retrains all affected, authorized, and other employees in any procedure changes in accordance with the Retraining subsection of this program.

Contractors

Our company ensures that we exchange energy control procedures with outside contractors prior to service or maintenance on our machines and equipment. Before these contract employees are allowed access to their work areas, The Safety or Facilities Department provides the contract employer with our written Energy Control (Lockout/Tagout) Program and related procedures. These are provided via paper copies.

We ensure that our contract stipulates that the contractor must provide The Safety or Facilities Department with the energy control program and procedures to be used by its employees at our facility. If a contractor fails to provide the energy control program and procedures, they will be asked to discontinue work until they are provided and followed.

The Safety & Compliance Manager then reviews any contractor energy control program and procedures and determines their impacts on our employees and whether the contractor program and procedures are at least as protective of our facility employees as the written Energy Control (Lockout/Tagout) Program and related procedures used by our own facility. If they are not as protective, we provide our employees with any necessary training and/or protection prior to contractor lockout/tagout activity.

Also, prior to contractor lockout/tagout activity, the supervisor, team leader or Safety Department trains our employees in the restrictions and prohibitions of the contractor's energy control program, as well as the lockout and tagout devices used by contractors and the means of identifying those devices. We certify all training using Contractor Energy Control Awareness Training Form and file this certification the Safety Department. Certification documents contain the trainee name, date of training and the trainer's name.

We encourage the contract employer to review our written Energy Control (Lockout/Tagout) Program and its procedures and determine their impacts on its employees and whether our program and procedures are at least as protective of contractor employees as its own program and procedures. If our program and procedures are not as protective, then we encourage the contractor to provide their employees with any necessary training and/or protection prior to contractor lockout/tagout activity.

We ensure that the contract employer signs a provision in the contract acknowledging that it has received our written Energy Control (Lockout/Tagout) Program and its procedures, understands them, and agrees to comply with restrictions and prohibitions of our program, procedures, and any other agreements. If the contractor fails to meet our restrictions, prohibitions, and agreements, they will be asked to discontinue work until items are addressed. If items cannot or will not be addressed, they will be asked to leave the facility.

Hot Work Program

PURPOSE:

The purpose of this policy is to establish cutting and welding safety procedures and to ensure that all cutting, and welding operations are performed in the safest manner possible, and in compliance with applicable regulations.

POLICY:

All cutting and welding operations shall be performed in compliance with OSHA standards and all other applicable state, local and client regulations, policies, procedures and standard safe work practices. Welding is restricted to areas or situations where adequate fire prevention, welder protection and passerby protection can be assured.

PROCEDURES:

This safety standard is intended as a guide to safe practices in welding, burning, brazing and related operations. The precautions and protective measures outlined are recommended minimum requirements. Welders should exercise judgment in applying these precautionary measures in such matters as length of work periods, poor ventilation, unusual work locations, and specialized operations. Additional protective measures may be required in certain instances.

TRAINING:

- Fire Watch Training – At a minimum the fire watch will be trained to the following standards: A “Fire Watch” is a person specifically trained and assigned to warn others of hazards associated with flammable materials, and when capable to prevent incipient stage fires.
    - Ensure proper “Hot Work” permit is on site

- Ensure permit is signed by all appropriate personnel
- Ensure adequate means of access and egress are provided to the work site
- Read and understand all permit provisions, and maintain the conditions of the permit at all times
- Wear an identification vest (made of flame retardant material)
- Maintain appropriate sewer drain coverage (if applicable)
- Maintain a charged fire hose to the end nozzle, and/or a charged dry chemical fire extinguisher with current inspection tags
- Maintain spark containment by using approved fire blankets
- Prevent the taking of samples, venting, or opening of piping or equipment in the immediate area of the hot work
- Must be able to communicate in English so that you can inform others in the event of emergency conditions
- Determine the exact location of firefighting equipment in the immediate area
- Ensure proper barricading and warning signs are used
- Continuously monitor the work area during and for 30 minutes after hot work has finished to ensure no smoldering embers or slag exist
- During actual hot work, keep area wet when possible
- Continuously monitor the work area and surrounding area for any unsafe conditions, or potentially hazardous conditions
- In the event of a hazardous condition, emergency, or changing environment, the fire watch will stop all work until it is safe to resume
- Never leave the work site unless the work has stopped, or until you are relieved by another employee with equal or greater training and knowledge
- Ensure surrounding conditions are inspected and precautions are taken with consideration given to wind direction
- Ensure equipment such as welding machines, hoses, tools, etc., are located so as not to impede access or egress, or access to firefighting equipment
- In the event of a fire - Remain calm

  - Only extinguish a fire when it is clearly within your abilities and the equipment available
  - Know the location of the nearest alarm and how to activate the emergency system
  - Know the evacuation routes and collection points
  - If the fire cannot be extinguished, leave the area immediately and report to your evacuation area
  - Await further instructions from the Incident Commander, or designated responsible personnel

- Only trained and qualified personnel may operate or maintain welding, cutting or brazing equipment Welders/Cutters will be trained per this policy and will possess the appropriate certifications for their work scope.
- Craft who perform any of the functions covered by this policy will be required to complete training including:
  - A test or other method to determine competency
  - All training records shall be documented and kept on file with Human Resources

General Rules

Initial Assessment – Fire is a primary focus and the assessment for fire protection guide should be used:

A dedicated fire watch is required for all hot work. If the object to be cut, burned or brazed cannot be moved and if all fire hazards cannot be removed, then guards shall be used to confine the heat sparks and slag and to protect the immovable fire hazards. If these steps cannot be taken to prevent fire, then the hot work will be stopped until a safer alternative is available to perform the work safely.

Supervisor/qualified personnel will inspect the area prior to work beginning, and authorize the work. The competent person will be trained to perform his/her job functions and to identify substandard conditions/acts. The competent person shall ensure all oxygen-fuel gas supply equipment is suitable, safe to use, and in good working condition for the hot work.

Inspections and certification records will be kept for recordkeeping.

If	And	Then
The object to be welded, cut or heated can be moved	A fire-resistant, safe workspace is available	Welding, cutting or heating shall be done in that space.
The object to be welded, cut or heated cannot be moved	All fire hazards can be moved to a safe distance	Welding, cutting or heating can be done once fire hazards are taken to a safe place.
The object to be welded, cut or heated cannot be moved	All the fire hazards cannot be removed	Guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

1. Before doing any welding or burning, outside of an area approved for routine hot work, be certain the necessary Hot Work Permit has been issued. All hot work will be approved by the client and the site supervisor. The crew responsible for the equipment will ensue all is suitable and in good working order. All equipment is inspected prior to beginning work and all crew members using the equipment will be familiar with “American Welding Society Standard A6-1-1966”. Any equipment that is not ready for service or needs repair shall be red-tagged and repaired by qualified personnel.

2. Whenever it is necessary for hoses, lines or cords to cross walkways or work areas, they must be strung overhead or protected by planks laid on both sides of the hose. All hoses, cord and leads and other welding equipment must be maintained in a safe and serviceable condition, with no fraying or exposed copper permitted. They should be deployed in a manner that does not create tripping hazards.

3. Contain all sparks with fire blanketing.

4. Before each use, hose must be inspected for leaks, burns, worn places, loose connections, or other defects which may render the hose unfit for service. Hose burned by a flash back must be discarded.

5. Welding machine ground connections must be made on or as close as possible to the object being worked upon to assure a good ground and prevent damage to valves, pump bearings, etc.

6. Welding machine grounds shall not be made to handrails, stairs, or to projections from steel power or lighting towers, or on any active oil, gas, steam, air, or chemical line.

7. Temporary power lines to portable arc welding machines should be carried overhead whenever practical, or laid on the floor or ground suitably protected so that they cannot be damaged or interfere with safe passage.

8. Necessary precautions must be taken to protect against electrical shocks when working in wet or damp places.

9. In electric welding, all parts of the body should be covered to prevent skin burns from ultra-violet rays or molten metal. The feet and ankles are particularly vulnerable to burns, and care should be taken to see that they are properly protected.

10. Do not use ear cotton when welding. Sparks or slag may ignite the cotton.

11. Welding rod shall not be stored in its original container once the container has been opened. When an original container is opened, the rod shall be immediately transferred to either a rod oven or an approved container, such as the plastic “rod guard” container. The original container shall then be crushed and properly disposed of.

12. Full spark containment is required and any exposed equipment or small bore piping must be protected from damage. A trained fire watch must be present at all times hot work is in progress.

13. Two sets of Flash Back arrestors must be installed on oxyacetylene system; one set installed at regulators and one set at torch handle (unless torch is equipped with arrestors).

14. Welders must wear Z-87 Safety Glasses with side shields under their welder’s hoods.

15. Grinders are required to have OSHA approved guards in place at all times. Exceptions must be approved by the Safety Department.

16. Only pipe stands that are designed to prevent pinch points at the center tube locking washer, and a stop at the base of the center tube to prevent crushing type injuries shall be used.

17. All welding rigs must be in safe operating condition and be properly identified.

18. Welding rigs must have emergency brake set and transmission in park or low gear when parked. If there is any slope the wheels must be chocked. When exiting a welding rig, welders must wear all required PPE.

19. The work area must be kept clean and materials including used weld rod removed when job is complete.

20. All welding rigs shall have a fire extinguisher.

21. Approved spark arrestors are required on all welding machines.

22. Always inspect grinders before each use. Grinders must have ground fault circuit interrupters (GFCI's)

23. Welding hoods must be equipped with the proper shaded lens for protection against radiant energy. (According to chart)

24. Make sure all sewers, drains, pits, pipe trenches, confined spaces; enclosed spaces have been tested for flammable vapors and/or hydrocarbons. Cover all openings per client policy.

25. **When a welding hood is not required and you will be grinding, buffing, sanding, deburring or steam cleaning a face shield in addition to safety glasses must be worn.**

Filter Lens Shade Numbers for Protection against Radiant Energy

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

5 or 6	Gas welding (light), up to 1/8-in.
6 or 8	Gas welding (medium), 1/8-in. to 1/2-in.
	Gas welding (heavy), over 1/2-in.

Gas Cylinders

1. Compressed gas cylinders are to be shut-off at the bottle when not in use or unattended for short periods of time. At the end of the shift the bottles are to be shut off and gauges and hoses detached and properly stored and protective caps installed.

2. Compressed gas cylinders shall have gauges removed and be capped prior to transportation. Cylinders shall only be transported or stored in the up position.

3. Use approved storage racks or dollies to store compressed gas cylinders. Chain or #9 wire may also be used. Never use rope for this purpose.

4. On welding rigs compressed gas cylinders shall be securely stored in vertical racks.

5. Oxygen and acetylene cylinders must be stored at a distance of 20 feet apart or be separated by a fire wall that is 5 feet or higher and has a fire rating of 60 minutes or more. These cylinders must be kept at least 20 feet away from combustibles or separated by a fire wall.

6. Do not use a choker or chokers to haul cylinders.

7. Keep cylinders away from work so sparks, slag, or flame cannot reach them. If cylinders cannot be isolated, fire resistant shields must be provided for them.

8. Cylinders shall always have the gauges removed and cylinder caps installed prior to being moved.

9. Acetylene shall never be exposed to unalloyed copper except in a torch.

10. Compressed gas cylinders shall be equipped with connections that conform to ANSI B57.1-1965.

11. Cylinders shall be marked to identify contents.

12. No more than 15 psi of acetylene shall be used at any time.

13. Bottles shall be slightly opened then closed just prior to attachment of the regulator.

14. Torches shall be lighted by friction lighters, not matches or other hot work.

15. Welders must insure that lines have been adequately purged prior to working on them.

16. Equipment shall be inspected for leaks daily. Unserviceable/non-approved equipment may not be used.

17. All welders shall possess current certifications.

18. Hot work area shall be kept damp at all times.

19. Unattended/unused welding machines shall be turned off.

20. Fire Watches shall remain on site for 1/2 hour after job.

21. MOST IMPORTANTLY: NO HOT WORK PERMIT = NO WELDING.

Ventilation

The following are ventilation requirements for welding.

1. Ensure that adequate ventilation is provided for employees working with welding and cutting equipment. Confined space work will have a plan to address securing of cylinders, lifelines, and warning systems that will be utilized by the safety attendant (Fire Watch/Confined Space Attendant).

2. Ensure that contaminated air exhausted from a working space is discharged into the open air or otherwise clear of the source or intake air.

3. Do not use oxygen for ventilation, comfort cooling, blowing dust from clothing, or for cleaning a work area.

4. Ensure that all necessary precautions are taken to prevent the accumulation of gases when cutting torches are used.

5. Do not take compressed gas cylinders into confined areas.

6. Ventilation equipment consists of air siphons (air movers), and/or exhaust blower (copus air mover).

7. When using blowers or siphons to exhaust fumes, exhaust inlet must be kept as close as possible to the work. Air siphons use large amounts of compressed air. The following safety procedures shall be followed:

- Keep connecting air hoses as short as possible.
- Do not attempt to operate more than one siphon off a single air hose or outlet.

- If used to exhaust a vessel, be sure to seal the bell of the inlet side around the manhole or vessel opening.
- A daily inspection of the safety screens' condition should be accomplished on the blowers. Repair or replace if broken. The use of a blower hinge is also recommended.

Planning Hot Work Welding

In planning or carrying out hot work, certain factors should be considered besides the obviously important hot work permit, gas test and hazard analysis. Those factors include, but are not limited to:

1. The base metal and its health effects. The MSDS on the metal is available and will address this issue.

2. The welding or burning process to be used and its special health problems, if any.

3. The location of the work: Is the work to be done in the open or in a confined space?

4. Ventilation required: Is special ventilation equipment needed?

5. Position of the work: Is the work overhead or below? Can it be positioned to allow fumes to be carried away without entering the welder's breathing zone?

6. Presence of other employees near the job: Is eye protection needed against ultraviolet radiation? Are other workers in the path of the welding fumes?

7. Cleanliness of the metal surface: Are harmful or flammable materials present beneath patches or in seams?

8. Respiratory protection: Are fume respirators adequate, or are air-supplied respirators needed? Protection must be appropriate to the circumstances and must meet the minimum requirement of the permit, but also may be upgraded.

9. Ensure adequate first aid supplies are available before beginning work. All injuries will be reported immediately.

Welding and Burning Safe Practices

The following information is the recommended minimum precautionary measure to be followed in performing the types of hot work listed in Table 13-1. If, in the opinion of the supervisor,

additional protection is required for a particular welding or burning job, such added protective measures should be used.

Open Area includes most outside work, the mechanical shop (except vessels or partitioned areas inside the building) and well-ventilated large rooms, buildings or tanks. Confined Spaces include work areas such as inside small tanks, drums, towers, or other vessels, whether indoors or out, as well as small rooms, deep excavations, and manholes.

Table 13-1 - Welding and Burning Stick Electrode Welding

Electrode	Basic Elements	Byproducts	Precautions
AWS E-6010	Iron		A
AWS E-6011	Iron		A
AWS E-6012	Iron		A
AWS E-6013	Iron		A
AWS E-6020	Iron		A
E-316 Stainless 18-12	Chromium, Nickel, Iron	Chromium, Nickel	B
E-310 Stainless 25-20	Chromium, Nickel, Iron	Chromium, Nickel	B
e-308 Stainless 18-8	Chromium, Nickel, Iron	Chromium, Nickel	B
E-610 12% Cr	Chromium, Iron	Chromium	B
E-502 5% Cr	Chromium, Iron		A
E-605 9% Cr	Chromium, Iron	Chromium	B
E-7018 Low Hydrogen	Iron	Fluorides	C
E-8018 B-2 (1-1/4% Cr)	Chromium, Iron		A
E-9018 B-3 (2-1/4% Cr)	Chromium, Iron		A

E-8108 C-2 (3-1/2% Ni)	Nickel, Iron	Chromium	
Stoody 6	65% Cobalt, 45% Tungsten, 28% Chromium Cobalt		B
		Chromium, Nickel	
Eutectic 680	High Chromium, Nickel	Nickel	B
Inco-A	68% Nickel	Nickel	B
Inconel 182	65% Nickel	Nickel, Copper	B
Monel 190	60% Nickel, 23% Copper	Nickel	B
Ni-Rod 55	60% Nickel		B
Carpenter 20	36% Nickel, 20% Chromium		B

Precautions:

A. No special precautions are needed in open or well-ventilated areas. Work in poorly ventilated areas will require respiratory protection. Work in confined spaces may require fume filter-type respirators or supplied air. Adhere to or upgrade permit requirements. Consult the Welding Supervisor.

B. Moderate amounts of fumes generated:

1. Use exhaust blowers or air siphons to remove fumes from breathing zone in open areas.

2. Work in confined spaces will require high efficiency particulate respirators.

C. Fumes and gases generated:

1. Use exhaust blowers or air siphons to remove gases and fumes from breathing zone in open areas.

2. Work in confined spaces will require air-supplied respirator.

D. Intense arc. Large amounts of metal fumes and gases generated:

1. Provide adequate ventilation of work. Use fume exhausters to remove fumes and gases from breathing zone in open areas. Do not direct exhaust air toward other employees. Use fume filter-type respirators in open areas.

2. In confined areas, adequate ventilation must be provided and air-supplied respirator must be worn.

E. Use only in metalizing hood. If necessary to metalize in other locations, use air-supplied respirator and protect other workers in the vicinity. Do not use any lead alloys in open shop area.

Table 13-1

Tungsten Arc Welding, Gas Shielded (Heliarc)* (TIG)

Rod	Basic Elements	Harmful Byproducts	Precautions
Evedur 1010	05.6% Copper Silicon	Copper, Ozone	C
Oxweld 372 Copper	98% Copper	Copper, Ozone	C
AWS ER 4043	Aluminum, Silicon	Ozone	C
AWS ER 5356	Magnesium, Aluminum	Ozone	C
Oxweld 28	18% Chromium, 8% Nickel, Iron	Chromium, Nickel Ozone	C
Steel	Steel	Ozone	C
1-1/4% Chromium	Chromium, Iron	Ozone	C
2-1/4% Chromium	Chromium, Iron	Ozone	C

*High levels of ultraviolet light produced. Avoid eye flash with side shield goggles. Avoid skin burns with proper clothing.

C. Fumes and gases generated:

1. Use exhaust blowers or air siphons to remove gases and fumes from breathing zone in open areas.
2. Work in poorly ventilated areas will require respiratory protection.
3. Work in confined spaces will require air-supplied respirator.

Short Arc Consumable Electrode Gas Shield* (MIG)

Wire	Basic Elements	Harmful Byproducts	Precautions*
18-8 Stainless	18% Chromium, 8 % Nickel, Steel	Chromium,Nickel,Ozone	B
25-20 Stainless	25% Chromium, 20% Nickel, Steel	Chromium,Nickel,Ozone	B
Oxweld 63	98% Copper	Copper, Ozone	B
Airco 110	98% Copper	Copper, Ozone	B
Oxweld 62	91.5% Copper, Aluminum	Copper, Ozone	B
Type 316 Stainless	18% Chromium, 13% Nickel, Steel	Copper, Nickel, Ozone	B
Aluminum	Aluminum	Ozone	B
Hastelloy B	Nickel, Molybdenum	Nickel, Ozone	B
Inconel 62	Chromium, Nickel	Nickel, Ozone	B
Oxweld 65	Iron		B

*High levels of ultraviolet light produced. Avoid eye flash with side shield goggles. Avoid skin burns with proper clothing.

B. Moderate amounts of fumes generated:

1. Use exhaust blowers or air siphons to remove fumes from breathing zone in open areas.

2. Work in confined spaces or poorly ventilated areas will require high efficiency particulate respirators.

Acetylene Welding and Brazing

Wire	**Basic Elements**	**Harmful Byproducts**	**Precautions**
Hastelloy D	Silicon, 90% Nickel	Nickel	A

Oxweld 5M	Copper, Zinc, Tin	Copper, Zinc	B
1 Oxweld	Steel		A
Aluminum	Aluminum		A
Everdur 1010	Copper, Silicon	Copper	A
Arcosil J	56% Silver, 22% Copper	Copper, Zinc	B
	17% zinc, 5% Tin		
Oxweld 28	18% Chromium, 8% Nickel, Steel	Chromium, Nickel	B
18-8 Stainless	18% Chromium, 8% Nickel, Steel	Chromium, Nickel	B
Easy-Flo	45% Silver, 15% Copper	Copper, Cadmium	B
	25% Cadmium, 16% Zinc	Zinc	
Sil-Fos	15% silver, 80% Copper	Copper	B
	5% Phosphorus		
Oxweld 372	98% Copper	Copper	B
Colmonoy 6	65% Cobalt, 28% Chromium	Cobalt, Chromium	B
Chromium	Tungsten		
Stoodite	Iron, 30% Chromium	Chromium	B
Borod	Tungsten Carbide, Iron		

A. No special precautions are needed in open or well-ventilated areas. Work in confined spaces or poorly ventilated areas may require fume filter-type respirators. Consult the mechanical welding and metals supervisor.

B. Moderate amounts of fumes generated:

1. Use exhaust blowers or air siphons to remove fumes from breathing zone in open areas.

2. Work in confined spaces will require high efficiency particulate respirators.

Silver Soldering and Soldering

Rod, Wire	Basic Elements	Harmful Byproducts	Precautions*
1801 Super	Silver, Copper, Cadmium, Zinc	Copper, Cadmium, Zinc	B
1602	Silver, Copper, Tin	Copper	B
18 FC	Copper, Tin Zinc	Copper, Zinc	B
16 FC	Silver Copper, Nickel	Copper, Nickel	B
15 Phoson	Silver Copper Phosphorous	Copper	B
11 Allstate	Copper, Zinc, Nickel	Copper, Zinc, Nickel	B

B. Moderate amounts of fumes generated:

1. Use exhaust blowers or air siphons to remove fumes from breathing zone in open areas.
2. Work in confined spaces will require high efficiency particulate respirators.

Air Arc Cutting and Gouging (Carbon Rod)*

Material Worker	Basic Elements	Harmful Byproducts	Precautions*
Steel	Iron	Iron Oxides	D
Cast Iron	Iron	Iron Oxides	D
Monel	Copper, Nickel	Copper, Nickel	D
Stainless Steels	Chromium Nickel, Iron	Chromium, Nickel	D
Chrome Steels	Chromium, Iron	Chromium	D
Brass	Copper, Zinc	Copper, Zinc	D
Copper	Copper	Copper	D
Aluminum	Aluminum	Nickel Oxides	D
High Nickel	Nickel	Nickel Oxides	D

Cofined Space Policy

The purpose of this program is to inform interested persons, including employees, that Campbell Companies is complying with the OSHA Confined Space Standard, Title 29 Code of Federal Regulations 1910.146. We have determined that this workplace needs written procedures for the evaluation of confined spaces, and where permit-required spaces are identified, we have developed and implemented a permit-required confined space entry program. This program applies to all work operations at Campbell Companies where employees must enter a permit-required confined space as part of their job duties.

Safety and Compliance Manager has overall responsibility for coordinating safety and health programs in this company. Safety and Compliance Manager is the person having overall responsibility for the Permit-Required Confined Space Program. Safety and Compliance Manager will review and update the program, as necessary.

Copies of the written program may be obtained from Safety and Compliance Manager in the Safety Department in the Salt Lake Branch or via our internal website www.mywheeler.net.

Under this program, we identify permit-required spaces in Campbell Companies, and provide training for our employees according to their responsibilities in the permit space. These employees receive instructions for safe entry into our specific type of confined spaces, including testing and monitoring, appropriate personal protective equipment, rescue procedures, and attendant responsibilities.

This program is designed to ensure that safe work practices are utilized during all activities regarding the permit space to prevent personal injuries and illnesses that could occur.

If, after reading this program, you find that improvements can be made, please contact Safety and Compliance Manager or Safety and Compliance Manager. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a safe and effective permit-required confined space entry program is an important component of our overall safety plan. We strive for clear understanding, safe work practices, and involvement in the program from every level of the company.

Hazard Evaluation for Permit Spaces

To determine if there are permit-required confined spaces in Campbell Companies, The Safety and Compliance Manager has conducted a hazard evaluation of our workplace. This evaluation has provided us with the information necessary to identify the existence and location of permit-required confined spaces in our workplace that must be covered by the Permit-Required Confined Space Entry Program. This written hazard evaluation is kept in the Safety Department in the Salt Lake Branch.

Preventing Unauthorized Entry

To provide a safe work environment and to prevent exposed employees from accidentally entering a permit space, we have implemented the following procedures to inform all employees of the existence, location, and danger posed by permit spaces in Campbell Companies. To inform employees of the existence of a permit space, we use signs, barriers, guards and email text or other electronic notification as deemed appropriate. To ensure that unauthorized employees do not enter and work in permit spaces, we post signs to notify of the danger and that a permit is required.

Safe Permit Space Entry Procedures

The supervisor or team leader is the Entry Supervisor responsible for authorizing entry and issuing entry permits for work in our permit spaces. The file of permits and related documents are kept in the Safety Department.

Pre-Entry Evaluation

To ensure the safety and health of our employees, before allowing authorized workers to enter a permit space, we evaluate conditions in that space to determine if the conditions are safe for entry. Any employee who enters the space, or that employee's authorized representative, has the opportunity to observe the pre-entry and any subsequent testing. The authorized entrant or that employee's representative also has the option of requesting a reevaluation of the space if they feel that the evaluation was not adequate.

Alternate Entry Evaluation

Our company follows the procedures to evaluate each permit space before entry according to 1910.146(c)(5)(ii)(C). This includes testing the internal atmosphere with a calibrated direct-reading instrument for oxygen content, flammable gases and vapors, and potential toxic air contaminants. We also periodically test the atmosphere of the space to ensure that the continuous ventilation is preventing the accumulation of a hazardous atmosphere.

Certification

Alternate Entry Procedure Certification

According to 1910.146(c)(5)(ii)(H), our company verifies that the space is safe for entry and that the pre-entry measures required by 1910.146(c)(5)(ii) have been taken, through a written certification that contains the date, location of the space, and signature of the person providing the certification. At our company, the supervisor or team leader is responsible for verifying these

procedures. The certification is made before entry and is available to each employee entering the space.

Reclassification as Non-permit Space Certification

According to 1910.146(c)(7)(iii), our company documents the basis for determining that all hazards in a permit space have been eliminated, through a certification that contains the date, location of the space, and signature of the person making the determination. At our company, the supervisor or team leader is responsible for documenting this information. The certification is available to each employee entering the space.

Equipment

To ensure the safety and health of our employees, Campbell Companies provides appropriate equipment to all employees who work in or near our permit spaces. According to 1910.146(k)(3)(i), each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which Campbell Companies can establish presents a profile small enough for the successful removal of the entrant. Wristlets may be used instead of the chest or full body harness if Campbell Companies can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

We maintain all equipment in excellent working condition, train the entrants in the correct usage of this equipment, and ensure that all equipment, including that used for personal protection, is used properly.

We follow these procedures to ensure that the appropriate equipment is being used by entrants through documented training and supervisor or team leader verification before signing a permit.

Duties: Authorized Entrants

Those persons who have completed the training and are authorized to enter our permit spaces (authorized entrants) are assigned specific duties and responsibilities that they must perform when they work in the permit space. Their duties and responsibilities include: must recognize and understand the hazards of entering a confined space as well as the signs and symptoms and possible consequence of exposure. They must use the equipment properly, be able to communicate to the supervisor or team leader if evacuation is needed and evacuate immediately if any warning sign or symptom of a dangerous situation and activate an alarm. The elements covered in the training program for authorized entrants include: hazard recognition, signs and symptoms or exposure, proper use and dawning of equipment, communication with the supervisor or team leader throughout the entry and if any dangerous situation requires evacuation as well as our rescue plan.

Duties: Attendants

Those persons who have completed the training and have been designated as permit space attendants are assigned specific duties and responsibilities that they must perform in permit space job duties.

Their duties and responsibilities include: the supervisor or team leader must know the hazards in the entry space, signs, symptoms and consequences of exposure as well as behavior effects of hazard exposure. They must also continuously maintain an accurate count of authorized entrants and positively identify those individuals. They must remain outside the permit space and only leave if replaced by another attendant. They must communicate to entrants and verify their status and alert entrants if an evacuation is necessary. They will also monitor the space outside the entry space to ensure it is safe for the entrants to remain in the space as well as prevent unauthorized entrants or conditions that would make the space unsafe for the authorize entrants.

The elements covered in the training program for permit space attendants include: hazard recognition, signs symptoms and consequences of an exposure, behavior of entrant exposure, signs of a dangerous situation inside or outside of the space that would require evacuation, controlling access, communication with entrants and our rescue plan procedures.

Duties: Entry Supervisors

Those persons who have completed the training and have been designated as permit space entry supervisors are assigned specific duties and responsibilities that they must perform in permit space job duties. Their duties and responsibilities include: must recognize hazards that may be faced, signs, symptoms and consequences of exposure. They must verify all testing is done and all necessary equipment is in place before signing the permit and allowing entry. They also terminate entry and cancel the permit as required. They must verify that rescue services and equipment are available and in working order. They are responsible to remove any unauthorized individuals who attempt to enter the space. They must also determine when responsibility for a permit space is transferred and the schedule as dictated by the hazards and operations performed in the space as well as the entry operations are followed and are consistent with the terms of the permit.

The elements covered in the training program for permit space entry supervisors include: hazard recognition, signs, symptoms, consequences and behavior of exposures, permit procedure and requirements, controlling access and our rescue plan and procedures.

Training Program

Every employee at Campbell Companies who faces the risk of confined space entry is provided with training so that each designated employee acquires the understanding, knowledge and skills necessary for the safe performance of the duties assigned to them. The training department or Safety and Compliance Manager conducts our permit-required confined space

training. All training related materials, documents, and signed certificates are kept in the Safety Department in the Salt Lake Branch or via our internal website at www.mywheeler.net.

When we conduct the training, we use classroom, hands on and online learning management audio visual tools. New employees are always trained before their initial assignment of duties. When changes occur in permit-required confined space areas of our company, we provide training. If we have reason to believe that an employee has deviated from a previously trained upon procedure or that their knowledge seems inadequate, we provide re-training.

Upon successful completion of Campbell Companies permit-required confined space training program, each participant receives a certificate which they sign verifying that they understand the material presented, and that they will follow all company policies and procedures regarding permit space entry.

Annual refresher training is conducted or more frequently as deemed necessary.

Rescue and Emergency Services

Campbell Companies utilizes its own employees to perform rescue services in the event of a permit space emergency. This group of employees has been trained, at a minimum, to:

1. Perform the assigned rescue duties;
2. Correctly use personal protective equipment (PPE) required for the job;
3. Establish proficiency as an authorized entrant, as provided by 1910.146(g) and (h); and
4. Perform basic first-aid and cardiopulmonary resuscitation (CPR).

Campbell Companies also ensures that at least one member of the rescue team holds a current certification in first-aid and CPR, and that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces will, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

Rescue training is conducted by a third party from the local fire/rescue department and/or fire fighter paramedics on staff.

PIT or Forklift

Introduction

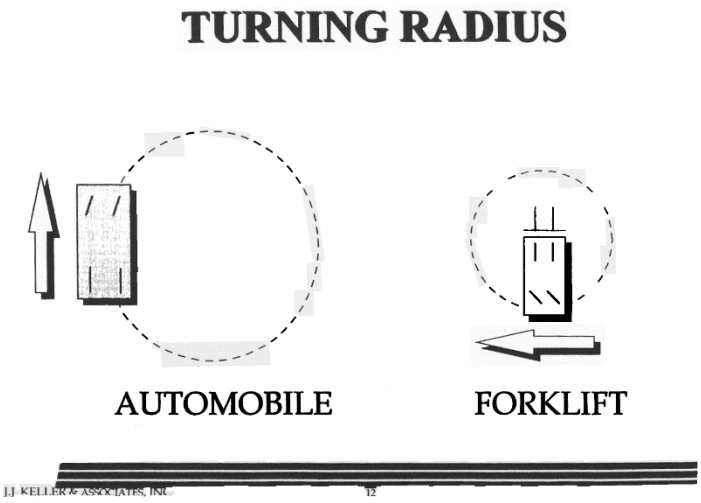
Campbell Companies employees operate a variety of Powered Industrial Trucks (Referred to in this program as PIT), these are

- High-Lift Counter Balanced Cantilever Rider Forklift
- High-Lift Order Picker Forklift
- Motorized Walk Pallet Truck
- Electric Carts

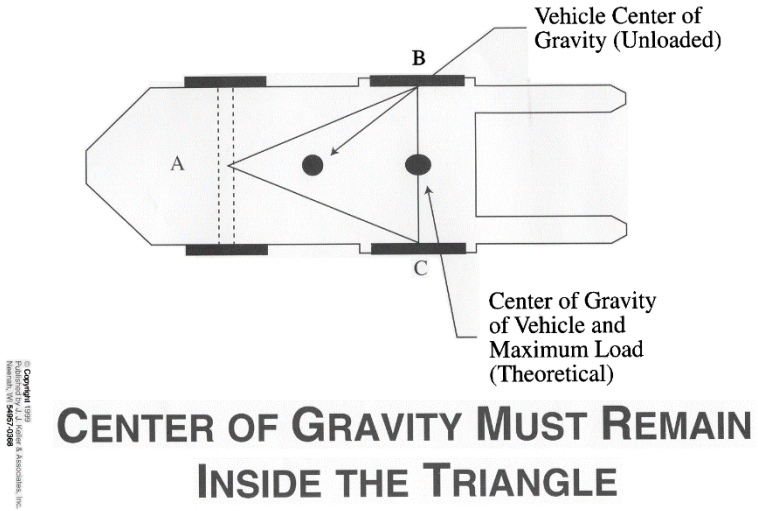
These PITs are classified in several categories:

- D – Diesel Powered
- E – Electrical
- LP – Liquefied Petroleum (Propane)

It is a misconception to feel that because you know how to operate an automobile, you can operate a PIT. There are several differences between automobile controls and those of a PIT. For example, steering on a PIT turns the back wheels as opposed to the front which gives the PIT a tighter turning radius. However, it also causes the tail end to swing out. Refer to the following:



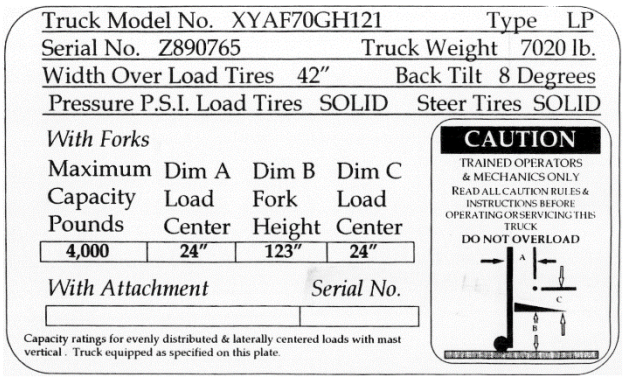
Another difference is in the suspension. Automobiles have a four-point suspension system while a forklift has only three points. This three-point suspension affects how the center of gravity of the forklift is balanced. A forklift's center of gravity looks like this:

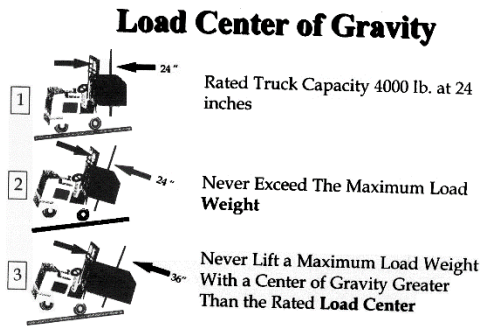


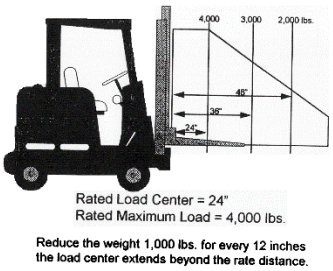
The center of gravity must remain inside the triangle to keep the lift truck from tipping over. Excessive speeds, heavy loads, and sudden stops are all causes of a shift in the center of gravity.

Another important factor to consider when operating a forklift is the load's center of gravity. The load's center of gravity is the horizontal distance from the load's edge to the line of action (or an imaginary line through an objects center of gravity) through the load's center of gravity. In other words, the spot on the forks where an object should be placed to ensure it stays within the truck's and the object's center of gravity. To determine the PIT's weight capacity as well as its load center and fork height, refer to the PITs Truck Capacity Plate (located on the PIT).

In this example, we see that the truck's max weight it can safely lift is 4,000 lbs and that the load's center of gravity should be 24" out on the forks. We also know that its max height is 123". If we don't follow these ratings, we risk tilting or even rolling a PIT. If a load must be picked up that has a center of gravity beyond its registered load center, the weight the PIT can safely lift is reduced. A good rule of thumb to remember is to reduce the weight 1,000 lbs. for every 12 inches exceeding the load's center of gravity. (See the following two tables.)







2. Pre-Operation

Training

Before an employee may be allowed to operate any type of PIT, he/she must first undergo **Campbell Companies Forklift Safety Training** held by the Safety/Training Department or through our online LMS, Campbell Companies University. This training will cover all operational and safety aspects of operating a PIT. The employee will also undergo a hands-on evaluation of the PIT he/she has been assigned by his/her supervisor. A PIT Performance Evaluation Form will be completed by the supervisor to prove the employee's demonstrated ability.

Every three years, or as determined by the Safety department on a case-by-case basis, all operators of PITs must undergo a refresher training course. During this time a PIT Performance Evaluation will be completed to evaluate the operator's knowledge and to detect any additional skills needed to operate the PIT safely.

Employees who are found to lack adequate knowledge and skills necessary to operate a PIT safely will need to go through the Forklift Safety Training program. If they are still found to be unable to operate the PIT safely they will not be allowed to operate it.

Pre-Shift Inspections

OSHA Rule 1910.178(q)(7)
Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.

Area managers and supervisors have the responsibility of ensuring that all the PITs in their area(s) are inspected before and after the day shift to ensure the PIT is in good working order with no defects or any other problem effecting the safety of the PIT. If a defect is found, the machine is to be placed out of service until repairs can be made.

The following items should be checked during each inspection:

- Fluid Levels
- Tires
- Hoses/Belts/Cables
- Mast and Forks
- Fuel or Battery Level
- Safety Equipment
- Gauges and Controls
- Horn and Back up alarm
- Steering
- Brakes
- Leaks

3. Operation

While operating a PIT at Campbell Companies, the following rules must be kept at all times:

- Seatbelts are to be worn at all times.
- When operating any open-ended order pickers, fall protection including a full-body harness must be worn.
- While driving without a load, forks should remain within 4" of the floor
- 5 mph is the maximum speed of a forklift operating inside a company facility. (This is comparable to a slow jogging speed.)
- Forklifts operating outside a company facility must follow all posted speed limits. 15 mph in the yard and cross walks.
- Extra caution and lower speeds shall be maintained in the yard where the pavement is worn, bumpy, and unstable. 5 mph is the suggested speed.
- When operating near other operating PITs, communicate effectively with other operators, always yield right of way, and let others know what you are about to do.
- Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck—loaded or empty.
- No arms or legs may be placed between the uprights of the mast or outside the running lines of the truck.
- When a PIT is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the PIT is parked on an incline.
    i. A PIT is considered unattended when the operator is 25 ft. or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.
- Brakes shall be set on the PIT whenever the operating employee has dismounted the PIT.
- A safe distance shall be maintained between the operating PIT and ramps or platforms like the docks in the warehouse.

- Forklifts cannot be used for opening freight doors.
- Brakes should be set, wheel chocks in place, or the dock lock set on all trailers parked with the intent of being entered by a PIT. Fixed jacks may also be necessary when entering trailers after the tractor has pulled away.
- All floors of trailers should be inspected and checked for cracks, breaks and weakness before they are driven on.
- Never raise a mast before checking for sufficient head room between overhead utilities and the masts' final destination.
- When using a PIT as an elevated work platform for fellow employees, a safety basket with handrails, guard rails, and foot guards should be used, and should be attached firmly to the mast of the PIT.
    i. Employees in an elevated lift platform must have means to shut off power from the platform.

4. Load Handling

- Preparing a Load
    i. Only stable and safely arranged loads shall be handled. Extra caution should be used when handling off centered loads that cannot be centered.
    ii. Only loads within the rated capacity of the truck shall be handled, **standing on the back of the forklift to add to the counter weight is absolutely forbidden.**
    iii. When carrying loose boxes or other objects, a pallet, e-container is required.
- Picking up a Load
    i. Make sure the load does not exceed the capacity of the forklift.
    ii. Center the forks to evenly distribute the weight of the load.
    iii. Make sure the load is balanced and secure.
    iv. Check for overhead obstructions.
    v. Drop the forks to the floor.

vi. Drive into the load as far as possible.

vii. Tilt the load back slightly and then lift it.

viii. Back out slowly to clear racks or other obstacles.

ix. Lower the load to the safe traveling height before moving / 2-4 inches above the floor.

x. The forklift should be completely stopped before the load is raised or lowered.

- Traveling with a Load

  i. Remember that pedestrians always have the right of way.

  ii. Keep the load tilted back slightly.

  iii. Keep the forks low.

  iv. Before moving, always check behind and around the unit for pedestrians and other traffic. (A forklift operator's visibility is restricted, even without a load.)

  v. Travel in reverse if the load is large or blocks the operator's view.

  vi. Drive at a safe speed. Slow down when going around corners.

  vii. Sound the horn when approaching aisles and corners.

  viii. Never allow any riders.

  ix. Drive *loaded* forklifts with the load uphill. Drive forward up ramps or inclines, and back down them.

  x. Drive *unloaded* forklifts with the forks downhill. Drive forward down ramps or inclines, and back up them.

  xi. Avoid sudden braking.

  xii. Lift or lower the load only when completely stopped. Never lift or lower while traveling.

- Placing a Load

  i. Stop the forklift in front of the desired location.

  ii. Slowly raise the load to the required height.

iii. Move forward slowly with the load raised.

iv. Never walk or stand under a raised load.

v. Position the load for placement, tilting the load forward to level it.

vi. Place the load square and straight.

vii. Back up slowly once the load has settled.

viii. Make sure the forks clear the pallet before turning or changing the fork height.

ix. Before backing, check behind and on both sides for pedestrians or other traffic.

x. Pay attention to unusually shaped loads as they may require special stacking considerations.

5. Fueling the Unit

- Gas or Diesel

i. Never fuel the forklift near an open flame or heat source.

(NO smoking is allowed while refueling.)

ii. Turn the unit off while refueling.

iii. Make sure you know which type of fuel to add.

iv. Do not overfill the tank.

v. Check for any leaks.

vi. Clean up any spills.

vii. Replace the fuel cap.

- Propane

i. Never fuel the forklift near an open flame or heat source.

(NO smoking is allowed while refueling.)

ii. Close the fuel line valve, but keep the engine running. This will prevent any propane from being left in the fuel line.

iii. Shut off the ignition when the engine stops.

iv. Handle tanks carefully, wear gloves.

v. Check the condition of all valves and seals before connecting the new tank.

vi. Make sure there is no smell of a leak.

vii. Remove the forklift from use if a leak is detected until it can be repaired.

viii. Store propane tanks in an open area. Tanks are stored outside the shipping area in a locked container.

1. Important facts about propane:

a. Propane is extremely flammable.

b. Propane can cause “freeze” burns if it comes in contact with the skin.

c. Propane is heavier than air and will sink to the floor and spread.

6. Battery maintenance

- Charging Batteries

i. Know the location of the nearest eye wash station.

ii. Make sure that the charging location is well ventilated; (The east end of the warehouse is currently used for charging batteries.)

iii. Uncover the battery compartment to prevent a build-up of heat or hydrogen gas if charging the battery while still attached to the PIT.

iv. Make sure the vent caps are not plugged.

v. Turn off the battery charger before connecting it to the battery.

vi. Make sure that metal objects do not come in contact with the terminals on the battery.

vii. Always use proper safety procedures when cleaning up any spilled battery acid. (Proper absorbent is found in the battery storage area in the warehouse in large blue 55-gallon drums.)

viii. Keep metal objects away from the charging process.

ix. Never smoke while charging batteries.

- Changing Batteries
    i. Stay away from sparks or open flames—no smoking.
    ii. Set the brake.
    iii. Turn off the unit.
    iv. Secure the battery before lifting it.
    v. Stand clear when using a crane to lift the battery.

Aerial & Scissor Lifts

1. Purpose

The purpose of this policy is to provide the minimum requirements for the use of aerial and scissor lifts. This work instruction applies to all aerial lifts, including extensible and articulating boom platforms, forklifts or similar equipment used with manufacturer-approved personnel lifting accessories, and scissor lifts.

2. Scope

This procedure applies to employees and on-site contractors who utilize aerial lifts, employees whose duties require them to operate, service, repair, or maintain aerial lifts and scissor lifts, and supervisors of employees who use aerial lifts and scissor lifts while working on behalf of Campbell Companies.

3. Minimum Requirements

	Minimum Requirements	Supporting Documentation
1.	Only trained persons shall operate an aerial lift.	Section 6.1
2.	Before the aerial lift is used, the worksite shall be surveyed for hazards.	Section 6.1
3.	Employees working in an aerial lift shall utilize appropriate fall arrest or fall restraint systems.	Section 6.2
4.	The lift operator shall visually inspect the aerial or scissor lift prior to each day's use.	Section 7.1

Definitions

Aerial Lift An entire device that is designed and manufactured to raise personnel to an elevated work position on a platform supported by masts or booms. Aerial lifts include: vehicle-mounted elevating work platforms, self-propelled elevating work platforms, and boom-supported elevating work platforms.

Aerial Work Platform The personnel-carrying component of an aerial lift, such as a bucket, basket, stand, or equivalent. The term "Aerial Work Platform" is used interchangeably with "Aerial Platform" in this policy.

Articulating Boom An aerial lift with two or more hinged boom sections.

Competent Person One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate or mitigate the hazards.

Contractors Contractors refer to all third-party groups performing work on CAMPBELL COMPANIES assets.

Extensible Boom Platform An aerial lift (except ladders) with a telescopic or extensible boom.

Fall Arrest Any combination of an anchorage, connectors, body harness, lanyard, deceleration device or lifeline used to arrest a fall from any working level.

Fall Protection Equipment and methods to both guard against the injurious consequences of a fall and to prevent a fall where possible. There are several types of fall protection including fall arrest systems, fall restraint systems, and guardrails.

Fall Restraint A combination of equipment to prevent a user from reaching a point where a fall could occur from an elevated surface.

Insulated Aerial Lift An aerial lift with dielectric components designed and tested to meet the specific electrical insulating rating consistent with the manufacturer's identification plate.

Scissor Lift A self-propelled elevating work platform (mobile scaffold) utilizing a scissor type framework for positioning the platform vertically.

Signal Person (Spotter) A person capable of giving direction to both the lift operator and 3rd parties while the lift is traveling to prevent contact, damage, and injury.

4. Roles and Responsibilities

4.1. The Manager or Supervisor

A. Shall verify that aerial and scissor lifts are inspected prior to use by the operator(s

B. Shall ensure that any aerial or scissor lift identified as unsafe by the operator is not used.

C. Shall verify that the type of fall protection identified is compatible and properly worn and used.

D. Shall stop work if conditions change or the scope of work changes.

4.2. Aerial or Scissor Lift Competent Person

A. Shall perform a documented annual inspection of the aerial or scissor lift.

B. Shall tag equipment out of service if an item is found deficient and cannot be fixed prior to use.

Aerial or Scissor Lift Operator (CAMPBELL COMPANIES Employee and Contractor)

A. Shall not modify aerial or scissor lifts without manufacturer’s prior written approval.

B. Shall test the lift controls each day prior to use to determine that such controls are in safe working condition.

C. Shall perform a visual inspection of the aerial or scissor lift prior to each shift's use (see Appendix I).

D. Shall consider the work area where the aerial or scissor lift will be used identifying any additional hazards and mitigations (see Appendix II).

E. Shall complete the aerial lift-specific or scissor lift-specific operator orientation prior to operating.

F. Shall operate aerial lifts in accordance with training received and manufacturer's recommendations.

G. Shall report defective or malfunctioning equipment and any incident involving the use of aerial or scissor lifts to their supervisor as soon as practical.

H. Shall obey the signals of the Signal Person (if used) and stop the task if contact with the Signal Person is broken.

I. Shall stop work if conditions change or if job scope changes.

4.3. **Signal Person**

A. Shall function as the sole signaler at any given time (but anyone can give the stop signal).

B. Shall have a direct line of sight of equipment movement and make sure contact with anything at ground level or overhead is avoided.

C. Shall adhere to a clear, agree-upon, standard set of signals for communicating with the operator, or if out of the operator's direct line of sight uses agreed-upon verbal commands by radio.

D. Shall control the job site access to prevent other personnel from walking under the elevated work platform.

E. Shall verify that overhead obstructions have been identified and mitigated.

F. Shall stop work if conditions change or if job scope changes.

Procedures

4.4. **General Requirements**

A. Only trained persons shall operate an aerial lift.

B. Before the aerial lift is used, the worksite shall be surveyed for hazards. Appendix II may be used as a list of possible conditions to be considered.

C. Before and during each use, the operator shall:

1. Check for overhead obstructions and electrical conductors.

2. Ensure that the load on the platform and/or load lifting devices are in accordance with the manufacturer's rate capacity.

3. Ensure that outriggers and stabilizers are used if the manufacturer's instructions require their use.

4. Ensure that guardrails are properly installed, and the gates are closed.

5. Use outrigger pads when necessary to provide firm footing.

D. If a vehicle mounted aerial lift has a separate power source to operate the movement of the base (e.g. truck) versus the movement of the aerial platform:

1. The vehicle engine shall be shut off.

2. The wheels shall be chocked if outriggers are not used.

3. The ignition key shall be removed and kept with equipment operator before using the aerial platform.

E. The aerial platform shall not be operated in any manner on grades, side slopes or ramps exceeding those for which the aerial platform is rated by the manufacturer.

F. For aerial lifts, the brakes shall be set and when outriggers are used they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline provided they can be safely installed.

G. When so equipped, outriggers or stabilizers and extendable axles shall be fully extended and placed on firm level surfaces or mats as required by the manufacturer. Stabilizer mats and pads shall be:

1. At least three times larger in surface area than the footprint the mats support,

2. Level where the outrigger or stabilizer contacts the mat to prevent the outrigger from sliding off,

3. Strong enough to withstand the loads imposed by the outrigger(s).

H. Floor protection shall be utilized whenever a lift is to be used inside CAMPBELL COMPANIES buildings on finished floors or where this is potential to damage structure, i.e., tank bottom welded seams.

I. Lift controls shall be operated in a smooth, controlled manner at all times. Avoidance of sudden starts, stops, or changes in direction. Never jam the controls from one travel direction to another.

J. All body parts and equipment shall remain inside the platform while moving the equipment.

K. When boom lifts must be moved on an incline, the boom shall be positioned uphill of the wheels and the wheels chocked if it is parked on an incline.

L. Operators shall maintain a firm footing on the aerial platform floor while working thereon. Operators shall not sit or climb on the edge of the platform or use planks, ladders, or the railings of the platform to gain a work position or as a climbing device to access other work levels.

M. People must not be allowed under a lift. If aerial lifts are going to be used in an area near pedestrians, operators shall isolate the work area by establishing a perimeter and safely diverting the traffic flow (walking & driving). Danger signs, caution tape, barriers, and a worker directing others to stay away are all acceptable means of establishing a work area perimeter.

4.5. **Fall Protection**

A. Employees working in a man lift, bucket truck, boom lift or aerial lift other than a scissor lift shall utilize appropriate fall arrest or fall restraint systems. Operators shall reference the equipment's requirements for the appropriate type of fall protection system to be utilized.

1. Use of Fall Arrest equipment shall be compatible with the aerial or scissor lift and designed for the requirements set by the manufacturer.

2. Use of Fall Restraint systems shall meet the design standards of the aerial or scissor lift.

B. Guardrails shall be in place and access gates properly closed per the manufacturer's instructions while lift is in use.

C. Operators shall be required to wear an approved fall arrest or fall restraint system.

D. It is recommended that lanyards used for lifts be as short as possible to restrain an employee from being thrown from the aerial platform.

E. Employees shall remain tied-off until the work is finished and the platform has been safely lowered to the ground.

F. Tying off to an adjacent pole, structure or other equipment is prohibited while working from the platform.

4.6. **Moving and Traveling**

A. An aerial lift truck shall not be moved when the boom is elevated in a working position with personnel in the platform except for equipment which is specifically designed for this type of operation.

B. Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position except for equipment which is specifically designed for this type of operation.

C. When lowering elevated aerial platforms, the operator shall inspect the area around the machine to ensure that no personnel, equipment, or obstructions are in the path of travel. If the area in the path of movement is not visible, the platform shall not be lowered until determined to be clear by a signal person located at ground level

D. The use of a signal person should be considered when:

1. The operator cannot see the path of travel.

2. A lift is working within 15 feet of live power lines.

3. A lift is traveling within 5 feet of stationary equipment, vehicles, or plant.

E. If aerial or scissor lifts are transported, e.g. on a truck or trailer, or used on a moveable surface, e.g. a marine work vessel, they shall be secured or restrained as appropriate for the task.

4.7. **Use of Lifts near Live Electrical Lines**

A. When an unqualified person, as defined in the Electrical Safety policy, is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

1. For voltages to ground 50kV or below – 10 feet.

2. For voltages to ground over 50kV – 10 feet plus 4 inches for every 10kV over 50kV.

B. Any overhead wire shall be considered to be an energized line unless it has been disconnected and is visibly grounded in the work area. Exact voltage shall be determined prior to working near live electrical lines.

4.8. **Elevated Lift Egress and Access**

A. Exiting and accessing an elevated platform is permissible only when it is determined to be the safest means of access to an elevated work area, and is allowed by the manufacturer.

B. The manufacturer's instructions and the following minimum procedures shall be used to access or exit an elevated platform:

1. 100% fall protection shall be maintained while exiting or entering an elevated aerial platform. The employee shall secure a second lanyard to an anchorage point outside the platform before

disconnecting their lanyard from the platform anchor point and exiting maintaining one point of tie-off at all times.

2. The floor of the platform should be at the same level as the structure to be accessed.

3. At no time shall employees exit or enter over the lift controls.

4.9. **Fueling and Recharging Equipment**

A. The equipment shall be lowered to grade, parked, on a level surface and shut down prior to refueling or battery charging.

B. Fueling and battery charging shall be done in a well-ventilated area free from flame, sparks, or other hazards that may cause a fire or explosion because of the fuel or the hydrogen generated from battery charging.

C. Refueling shall be prohibited in any area where there is any primary source ignition (i.e. capable of igniting flammable vapors) work within 35 feet.

5. **Aerial and Scissor Lift Inspections**

5.1. **Aerial and Scissor Lift Pre-Use Inspection**

A. The aerial or scissor lift operator shall visually inspect the aerial or scissor lift prior to each day's use.

1. Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.

2. Follow the manufacturer's inspection list for other items, or the suggested items listed in Appendix I.

3. Specific documentation of this visual inspection is not required.

4. Any suspected deficient items shall be carefully examined or tested and a determination made as to whether they constitute a safety hazard. All unsafe items shall be replaced or repaired before use. If left unattended, the lift shall be tagged out of service.

5.2. **Aerial and Scissor Lift Annual Inspection**

A. The aerial or scissor lift operator or other competent person shall perform an inspection of each CAMPBELL COMPANIES owned aerial and scissor lift.

1. The inspection shall be performed annually, and after any incident involving the lift.

2. The inspection shall be documented using Appendix III, Aerial and Scissor Lift Annual Inspection Report, or other similar form, and maintained for five years.

Note: Aerial and scissor lift annual inspections for equipment not owned by CAMPBELL COMPANIES is not required to be documented.

3. Any suspected deficient items shall be carefully examined or tested and a determination made as to whether they constitute a safety hazard. All unsafe items shall be replaced or repaired before use. If left unattended, the lift shall be tagged out of service.

6. **Maintenance**

A. Any problems or malfunctions that affect the safety or operation of an aerial or scissor lift shall be repaired and functionally tested before continued use.

B. Maintenance shall be performed on aerial and scissor lifts in accordance with the manufacturer's recommendations.

7. **Training**

A. Only personnel who have received general instructions regarding the inspection, application and operation of aerial lifts, including recognition and avoidance of hazards associated with their operation, shall operate an aerial lift. Such items covered shall include, but not necessarily be limited to, the following issues and requirements:

1. The purpose and use of manuals.

2. That operating manuals are an integral part of the aerial lift and must be properly stored on the vehicle when not in use.

3. A pre-use inspection.

4. Responsibilities associated with problems or malfunctions affecting the operation of the aerial lift.

5. Factors affecting stability.

6. The purpose of placards and decals.

7. Workplace inspection.

8. Applicable safety rules, regulations, and policies.

9. Trained to operate.

10. Operator warnings and instructions.

11. Actual operation of the aerial lift. Under the direction of the trainer, the trainee shall operate the aerial platform for a sufficient period of time to demonstrate proficiency in the actual operation of the aerial platform.

12. **Proper use of personal fall protection equipment**.

B. Personnel who will use aerial or scissor lifts not owned by BP shall be familiar with the specific equipment operation, receive an orientation from the service provider delivering the equipment, or review the instruction manual provided with the equipment.

8. **References**

1. OSHA Regulations, 29 CFR 1926.453 Aerial Lifts.

2. OSHA Regulations, 29 CFR 1926.502 Fall Protection.

3. ANSI / SIA Standard A92.2-2001, “Vehicle-Mounted Elevating and Rotating Aerial Devices”.

4. Equipment Manufacturers Institute, Aerial Platform Safety Manual for Operators and Mechanics, Chicago, Illinois, Revised 1995.

Appendix I – Aerial and Scissor Lift Pre-Use Inspection

Items determined in accordance with the manufacturer's recommendations shall be inspected for defects. The results of this inspection are reported to the ATW PIC who documents the results by answering the ATW question, Are equipment and tools judged to be fit for purpose and intact by the operator(s)? The following lists examples of inspections and tests that may be performed by the operator prior to each day's use in accordance with the manufacturer's recommendations:

1. Operating controls and associated mechanisms for conditions interfering with proper operation.

2. Visual and audible safety devices for malfunction.

3. Hydraulic or pneumatic systems for observable deterioration or excessive leakage.

4. Fiberglass and other insulating components for visible damage or contamination.

5. Missing or illegible operational and instructional markings.

6. Electrical systems of / or related to the aerial lift for malfunction, signs of excessive deterioration, dirt and moisture accumulation.

7. Visual inspection of bolts, pins, and other fasteners for loose, deformed or missing fasteners and other locking devices.

All unsafe items shall be replaced or repaired before use.

Appendix II - Aerial and Scissor Lift Work Area Considerations

The following list is an example of conditions to be considered at the work area:

1. Have the work areas been established and appropriate barriers (e.g. caution tape, concrete "Jersey" barriers, fencing) been used to create a perimeter in pedestrian or vehicle traffic areas if necessary?

2. Are overhead obstructions (e.g. tight working conditions, adjacent structures, pipe racks, ceiling grids, power lines) identified and mitigated?

3. Has the ground or floor surface been evaluated to determine it can support the lift weight, the slope doesn't exceed the manufacturer's rating, or if outrigger pads are needed?

4. Have hazardous energy sources (e.g. electrical power cables or panels, chemical lines, gas lines, drain lines, utilities) been identified and mitigated?

5. Sharp edges have been identified and mitigated? This includes both on the equipment and in the work areas.

6. The size of the aerial or scissor lift does not create any additional hazards.

7. Are wind and weather conditions safe for operation?

8. Does the aerial platform contain only the tools and other loose articles necessary to complete the job and are tools stored to prevent falling?

9. If it is necessary to exit the aerial platform while elevated, has the scenario been evaluated to determine if a Cold Work – Working at Heights permit is required?

10. Is a signal person available if the equipment is travelling, or lowered into an area not visible to the operator?

11. The route of travel and use is free of ground obstructions that would interfere with the safe use of the lift, and has sufficient strength to support the load?

12. Is the intended path of the boom and platform a minimum of 10 feet from power lines or any other dangerous obstacles e.g. mechanical devices, other aerial lifts, structures / beams)?

Appendix III - Aerial and Scissor Lift Annual Inspection Report

Aerial and Scissor Lift Annual Inspection

Manufacturer and Type of Lift:

Model or Equipment Number:

Date:	**Hours on machine:**
Inspector's Name Printed:	**Inspector's Signature:**

Inspection Item & Description **Pass (P), Fail (F), or Not Applicable (N/A) Status**	**P/F/ NA**	**Comments and / or Repairs Made:**
Operating controls and associated mechanisms operate properly, including all boom / platform movements?		
Visual and audible safety devices functioning?		
No deterioration or excessive leakage of hydraulic or pneumatic systems?		
No visible damage or contamination to fiberglass and other insulating components?		
Operational and instructional markings present and legible?		
Electrical systems function properly and do not show signs of excessive deterioration, dirt, or moisture accumulation, including those not readily visibly on a pre-use inspection?		
Bolts, pins, and other fasteners are not loose, deformed, or missing?		
Structural members, including welds, are not deformed, cracked or corroded?		
Parts such as pins, bearings, shafts, dears, rollers, locking devices, chains, chain sprockets, wire and synthetic ropes do not show signs of excessive wear, cracks, or distortion?		
Hydraulic and pneumatic relief valve settings are per the manufacturer?		
Hydraulic system has proper oil level?		
Hydraulic and pneumatic fittings, hoses, and tubing do not show signs of leakage, abnormal deformation, or excessive abrasion?		
Compressors, pumps, motors, and generators do not have loose fasteners, leaks, unusual noises or vibrations, loss of operating speed, or excessive heating?		
Hydraulic and pneumatic valves do not show signs of malfunction, cracks in the external valve housing, leaks, or sticking spools.		
Vacuum prevention systems on Category "A" aerial lifts function properly?		
Hydraulic and pneumatic cylinders and holding valves function properly and are not visibly damaged?		
Hydraulic and pneumatic filters are clean and do not show foreign material in the system indicating other component deterioration?		
If the aerial lift is rated as an insulated lift, the electrical insulating components and system(s) are clean and do not show other conditions that compromise insulation?		(Enter date of last test if lift is used for bare- hand electrical work)

Ladder Safety

PURPOSE:

The Ladder Safety Policy is intended to provide employees with safe guidelines for the use of portable ladders, while complying with applicable Regulatory Compliance Standards.

POLICY:

Under no circumstances are portable ladders to be used unless conditions are considered safe, secure and in compliance and company procedures and safe work practices.

PROCEDURES:

1. The use of ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction is prohibited. All rungs, cleats, and steps will be parallel, level and uniformly spaced when the ladder is being used. All ladders will be inspected prior to use by a competent person. When ladders with such defects are discovered they must be immediately removed from service and tagged as such.

2. Employees will face the ladder while ascending or descending keeping three points of contact at all times.

3. Ladders will not be loaded beyond the maximum intended load for which they were built or beyond the manufacturer's rated capacity.

4. All ladders shall be placed on secure footing, and the area around the top and bottom will be kept clear of work materials, tools and debris.

5. Planks will not be used on the top step of stepladders.

6. Portable ladders will be placed and used at a pitch that places the horizontal distance, from the top support to the foot of the ladder, at about one-quarter of the working length of the ladder. Ladders will not be used in a horizontal position as a platform, runway or scaffold.

7. Ladders shall not be placed in front of doors, unless door is blocked open, and/or a barricade or guard is provided.

8. Ladders shall not be placed on scaffold, boxes, boards, barrels, or other unstable bases.

9. Ladders shall not be spliced together.

10. Employees will not stand on the top cap or the step below the top cap of a stepladder.

11. Any ladder splashed with caustic or acid shall not be used until thoroughly cleaned and inspected for possible corrosive damage.

12. There shall be ample clearance and clear access at the top and bottom of portable ladders.

13. Portable rung ladders shall only be used with the metal supports on the under-side.

14. No ladder shall be used to gain access to a roof unless it extends at least 3 feet above the point of highest support with the building. Side rails must extend not less than 36” above any landing. When this is not practical, grab rails will be provided to facilitate employee movement to and from the point of access.

15. Portable metal ladders will not be used for electrical work or where they may contact electrical conductors.

16. All ladders shall be equipped with non-slip bases when a hazard of slipping exists.

17. All ladders will be tied off on top, blocked or otherwise secured to prevent movement before work is performed from them.

18. All ladders must have a minimum width of 12 inches. All ladders must have a distance of 12" between rungs.

19. The company prefers not to use or issue chain ladders, however if a client provides or mandates chain ladder usage, a thorough pre-use inspection of the ladder(s) must be performed. When there is a need for this type of ladder, wire rope ladders are preferred.

20. Stepladders shall not exceed 20 feet in length.

21. Extension ladders shall be equipped with positive stops.

22. Ladders shall be maintained in good condition.

23. Only one employee is to work on or climb a ladder at the same time.

24. All work done from a ladder shall be within an individual’s normal reach and with no overextending allowed.

25. All work done from a ladder that exposes a worker to a fall potential of 4feet or more requires the worker to wear a harness and be tied off per the Fall Protection Policy. Employees are not permitted to stand or work off of the top two rungs or cleats of a ladder unless there are members of the structure that provide a firm handhold, or the employee is protected by personal fall protection.

Personal Protective Equipment

Personal protective equipment (PPE) is the last means of protecting workers from injury. PPE is only employed when administrative and engineering controls are ineffective or insufficient. Hazards should be minimized by ensuring that all jobs are well planned, workers are properly trained, and safe work practices and safe job procedures are followed. PPE provides an additional degree of protection from injury. Hazard assessments of the workplace shall be made to determine if hazards are present, or are likely to be present, which necessitate the use of PPE.

PPE in our safety program generally falls into two categories.

1. **Basic** – The PPE that should be worn at all times by all personnel in the work place. This includes hard hats, safety glasses, safety footwear, and appropriate clothing.
2. **Specialized** – Covers PPE which is used only for specific jobs or for protection from specific hazards. This includes gloves, welder's goggles, respiratory protective equipment, fall arresting equipment and special clothing.

Employees expected to wear Personal Protective Equipment (PPE) will be trained as follows:

- Exposures and how to identify them;
- Types of PPE to wear as protection from each exposure;
- When to wear them and their limitations;
- How to wear PPE properly; and
- How to care for, clean and properly store PPE.

Employees shall inspect all PPE prior to use. Any defects are to be reported to your supervisor. Defected PPE shall be replaced prior to starting any job.

Head Protection-

Hard hats are required on a site-specific basis. All customer safety policies must be followed in addition to our own.

Safety headwear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

Most head protection is made up of two parts:

- The **shell** (light and rigid to deflect blows)
- The **suspension** (to absorb and distribute the energy of the blow)

Both parts of the headwear must be compatible and maintained according to manufacturer's instructions. If attachments are used with headwear, they must be designed specifically for use with the specific headwear used. Bump caps or laceration hats are not considered safety helmets.

Employees shall;

- Replace headgear that is pitted, holed, cracked or brittle;
- Replace headgear that has been subjected to a blow even though damage cannot be seen;
- Remove from service any headgear if its serviceability is in doubt;
- Replace headgear and components according to manufacturer's instruction;
- Consult regulations or your supplier for information on headgear.

Employees must never;

- Drill, remove peaks, alter the shell or suspension in any way;
- Use solvents or paints on the shell (makes the shell breakdown);
- Use any liner that contains metal or conductive material;
- Carry anything in the hard hat while wearing the hard hat.

Eye and Face Protection-

Safety glasses or prescription safety glasses with side shields must be worn in ALL shops, warehouses and yard areas.

- ALL RX SAFETY GLASSES MUST HAVE ADD ON SIDE SHIELDS AT ALL TIMES.

This PPE is designed to protect the worker from such hazards as:

- Flying objects and particles,
- Molten metals,
- Splashing liquids,
- Ultraviolet, infrared, and visible radiation (welding).

There are two types of eye and face protection:

1. **Basic Eye Protection** includes:
    - Eye cup goggles,
    - Mono frame goggles and spectacles with side shields.
2. **Face Protection** includes:
    - Metal mesh face shields for radiant heat or hot and humid conditions,
    - Chemical and impact resistant (plastic) face shields,
    - Welders' shields or helmets with specified cover,
    - Filter plates and lenses.

Hardened glass prescription lens and sport glasses are not an acceptable substitute for proper, required industrial safety eye protection.

Comfort and fit are very important in the selection of safety eye wear. Lens coatings, venting or fittings may be needed to prevent fogging.

Basic eye protection should be worn with face shields. Face shields alone often are not enough to fully protect the eyes from work hazards. When eye and face protection is required, advice from special specialists, information on Safety Data Sheets (SDS) for various chemicals, or your supplier will help you select such protection.

Employees shall;

- Ensure your eye protection fits properly (close to the face);
- Clean safety glasses daily, or more often if needed;
- Store safety glasses in a safe, clean, dry place when not in use;
- Replace pitted, scratched, bent and poorly fitted PPE. (Damages to face/eye protection interferes with vision and will not provide the protection it is designed to deliver.)

Employees must never

- Modify eye/face protection;
- Use eye/face protection which does not have a proper certification. (Various markings or the safety stamp for safety glasses are usually on the frame inside the temple near the hinges of the glasses.) Must meet CSA Z94.3-92: Industrial Eye and Face Protectors.

Foot Protection-

Steel toed boots are required while working in all shops,warehouse and yard areas.

Safety footwear is designed to protect against foot hazards in the workplace. Safety footwear protects against compression, puncture injuries, and impact.

- Choose footwear according to the job hazard and approved standards;
- Lace up boot and tie laces securely (boots do not protect if they are a tripping hazard or fall off);
- Choose a high-cut boot to provide ankle support (fewer injuries).

Employees must never;

- Wear defective safety footwear (i.e., exposed steel toe caps);
- Under protect your feet;
- Modify safety footwear.

Hearing Protection

Hearing protection will be made available to all employees exposed to sources of noise 85 dB or greater, as measured by a sound level meter or identified by the contracting company. In general, anytime someone must elevate their voice to be heard, hearing protection will be worn.

Hand Injury Prevention Program

At Campbell Companies to ensure the greatest possible hand/finger protection for employees in the workplace, the cooperative efforts of both the company and its employees will help in establishing and maintaining a safe and healthful work environment. Hand/finger injury hazards may exist in the workplace in many different forms: sharp edges, pinch points, falling objects, flying sparks, vibratory/impact tool use, chemicals etc. This is why it is important for employees to protect themselves from workplace hazards that can cause hand injuries. The use of TRACK is always the foundation of safety for each task we become involved in. The use of task-specific PPE is vital to controlling these hazards, and must be used properly. Where there is risk of injury from glove entanglement in moving parts of machinery, employees shall not wear gloves and use other methods to protect their hands from injury exposure.

Jewelry, such as rings has caused the loss of many fingers. Be aware that wrist watches, and other jewelry can be caught in moving machinery, or caught on a protruding hook or nail. Never wear metallic jewelry or other objects when working around electrically energized equipment.

General Policy:

Management -

It is the responsibility of all Managers and Supervisors to ensure that:

- All employees have been trained in the care and use of hand protection.
- All hand protection is adequately suited to the task being performed, and for the work conditions.
- Defective equipment is replaced as required.
- This policy is consistently and properly enforced and that the proper hand protection is worn in the required areas or while performing tasks that require the use of hand protection.

Employee –

It is the responsibility of every employee to:

- Complete any required safety training relating to care and use of personal protective equipment (PPE).
- Use the hand protection required for the task, area, or conditions.
- Ensure that hand protection is properly fitted to optimize both functionality and comfort *(loose fitting clothing of ANY kind creates a hazard when working around machinery and equipment).*

- Maintain hand protection in good condition.
- Report any defective, damaged, or missing hand protection to your supervisor.

General Procedures -

1. Appropriate hand protection must be worn by anyone who is performing a task specified in the Table below.

2. Employees will be required to use specific hand protection when performing certain tasks depending on the identified hazards, in order to minimize the risk of hand and finger injuries.

3. The type of hand protection recommended will depend on:

a. The nature of the hazard (vibration, scalds, cuts and scrapes, etc.)

b. The amount of dexterity required (i.e. light assembly of small components that do not pose a risk of injury may be carried out more effectively without the use of gloves).

c. The duration and frequency of the task.

4. All employees will receive training on proper care and usage of hand protection.

5. Any customer or site specific policy that is more stringent than this policy must be followed by Campbell Companies employees.

Hand Protection is encouraged whenever the other methods of control (Elimination, Substitution, Engineering and Administrative) fail to guarantee to control the hazard 100% of the time

The table below specifies when hand protection is **mandatory** and what type is recommended. Please see the sizing chart after the table to assist you in making your selection.

Mandatory Hand Protection		
Task	**Hand Protection Required**	**Recommended Protection**
While using blades: box cutter, scraper, razor knife etc.	Cut Resistant-to protect against cuts/abrasions and puncture.	 Cut/Abrasion and Puncture Resistant Level 6 Or Equivalent in other brand.

While handling chemicals identified by area or suggested by the chemical's Safety Data Sheet. Some examples are solvent, brake clean, mineral spirits, degreaser, red hot etc.	Chemical-resistant gloves (e.g., nitrile, neoprene, rubber, vinyl) to protect hands against hazardous chemicals (when the hazard is chemical, consult the SDS for recommendations about glove selection	 MidKnight Nitrile  Supreno SE Nitrile
While handling or servicing batteries	Chemical-resistant gloves (e.g., nitrile, neoprene, rubber, vinyl) to protect hands against hazardous chemicals (when the hazard is chemical, consult the SDS for recommendations about glove selection	 Ansell AlphaTec 58-435
While steam cleaning	Chemical-resistant gloves (e.g., nitrile, neoprene, rubber, vinyl) to protect hands against hazardous chemicals (when the hazard is chemical, consult the SDS for recommendations about glove selection	 MidKnight SE Nitrile  Supreno Nitrile
Welding Operations	Leather Welding Gloves	

Handling Liquid Nitrogen	Insulated Gloves	
While using/servicing or maintaining parts washers	Chemical-resistant gloves (e.g., nitrile, neoprene, rubber, vinyl) to protect hands against hazardous chemicals (when the hazard is chemical, consult the SDS for recommendations about glove selection	  MidKnight Nitrile Supreno SE Nitrile
While handling G.E.T	Cut Resistant – to protect against cuts/abrasions and puncture.	 Cut/Abrasion and Puncture Resistant Level 6 Or Equivalent in other brand
When handling/cutting banding or handling/cutting or using metal banding.	Cut Resistant – to protect against cuts/abrasions and puncture.	 Cut/Abrasion and Puncture Resistant Level 6 Or Equivalent in other brand

Other Recommended Hand Protection-

Task	Hand Protection Type	Recommended Protection
Vibratory/Impact Tool Use	Anti-Vibration & Impact, Gel Padding, Nitrile Coating. (Vibration & Impact)	
High Force Activity where the risk of your hand slipping due to force being exerted could cause a cut/abrasions.	Cut/Abrasion and puncture resistant with extra coating for grip in greasy/oily conditions	 Cut/Abrasion and Puncture Resistant Level 6 Or Equivalent in other brand
Painting operations	Chemical-resistant gloves (e.g., nitrile, neoprene, rubber, vinyl) to protect hands against hazardous chemicals (when the hazard is chemical, consult the SDS for recommendations about glove selection	  Ansell AlphaTec 58-435 MidKnight Nitrile

Handling Sharp/Abrasive – Parts, components, objects etc. where there is a risk of cut/abrasion.	Cut Resistant – to protect against cuts/abrasions. Leather Work Gloves -	 Cut/Abrasion and Puncture Resistant Level 6 Or Equivalent in other brand 

RESPIRATORY PROTECTION PROGRAM

PURPOSE:

Improper use of or failure to wear respiratory protection when required can have devastating effects on the life and/or health of workers. Lack of a respirator, early removal of a respirator and improperly fitting respirators has resulted in needless worker injury and death.

The purpose of this policy is to establish a respiratory protection program for Campbell Companies that ensures that workers are provided with the necessary information, training, and equipment to protect themselves from respiratory hazards in the workplace, and complies with OSHA, ANSI and other applicable standards and regulations.

POLICY:

It is management's responsibility to implement this program at no cost to the employees and it is the employee's responsibility to comply with all aspects of this program. Any voluntary use of respiratory protection equipment by employees shall be governed by the provisions of this program, also at no expense to the employees.

PROCEDURE:

A. Responsibilities

• Management - Has the responsibility of overseeing the implementation of this policy and assigning program administrators for each site location. These administrators must be suitably trained and have the appropriate accountability and responsibility to fully manage the site respiratory program. The program administrator will report, at least annually, on the effectiveness of the program to management, and be authorized to make appropriate changes to the site program. The administrators will be identified by name in the specific site program.

• Supervisory - It is the responsibility of the supervisor to ensure that all personnel under their control are completely knowledgeable of the respiratory requirements of this program. Supervisors are to ensure that employees have been trained and are medically fit to use respiratory equipment safely. It is the supervisors' duty to monitor the employees' diligence in following procedure and take appropriate action when deficiencies are observed.

• Employees - It is the responsibility of the employee to be aware of and practice the information presented in the training. Specifically, employee responsibilities are to report equipment malfunctions, seal check their respirator before every use, and to report medical or physical changes that could affect respirator use.

Hazard Assessment

Respiratory hazard determination starts at the planning stage of a job. Campbell Companies will identify all known hazards as required by the hazard communication standard. Evaluation of the hazards consists of exposure duration, potential for contact, and known or potential concentrations. When the hazard is a federally controlled substance, that hazard shall be assessed and monitored as dictated by that specific standard. A respiratory hazard may not have an established OSHA permissible exposure limit documented; however, all provisions of this program will be enforced to protect the health of the employees.

Acceptable methods for estimating respiratory hazards include:

- Personal exposure monitoring is the most reliable and accurate method to determine exposure.
- Use of objective data – This is the use of data obtained from industry studies, trade associations or from tests conducted by chemical manufacturers. The objective data shall represent the highest contaminant exposures likely to occur under reasonably foreseeable conditions of processing, use or handling. If objective data is used for assessment, the data must be documented as part of the written program.
- Mathematical Approach – The use of physical and chemical properties of air contaminates, combined with information on room dimensions, air exchange rates, contaminant release rates, and other pertinent data including exposure patterns and work practices to estimate maximum exposure levels in the work place.
- Where employee exposure cannot be identified or reasonably estimated, the atmosphere will be considered immediately dangerous to life and health (IDLH). Also atmospheres that are oxygen deficient will be treated as IDLH conditions.
- Accidental release or emergency response must be a consideration when estimating hazard exposure.

C. Hazard Control

1. Engineering Controls: This should be the first consideration when evaluating hazard exposure.
    - Substitution of a less or non-toxic substance to replace a more harmful one. Example: Sandblasting with black grit instead of silica sand.

- Isolation or encapsulation of the process. Example: To spray asbestos insulation with glue paste to lessen exposure levels.
- Ventilation to remove contamination from the work area before exposure. Example: Mechanical dust collection system installed to capture contaminants and reduce buildup.

2. Administrative Controls:
   - Especially effective for repetitive stress and heat stress control, crew rotation could increase productivity in contaminated atmospheres.
   - Adjust the length of the work shift. Instead of two 12 hour shifts, it may be more effective to have three 8 hour shifts.
   - Change scheduled work to limit the number of employees exposed. The scheduling of other work near the exposure area could be limited until exposure is gone.
3. Personal protective devices for the control of respiratory hazards are to be used as a last resort, and only when other means of control are not practical or feasible. Respiratory protection may be required while implementing engineering controls, or in conjunction with other control methods. Engineering controls may only lessen the exposure, but required to be implemented along with personal protective devices.

D. Respirator Selection

Selecting the proper respirator can be very complex and is critical in having an effective respiratory program. The program administrator must solicit information from all available professional resources concerning exposure controls.

Factors that must be considered include:

- The nature of the hazardous operation or process
- The type of respiratory hazard (including physical properties, oxygen deficiency, physiological effects on the body, concentration of toxic material or airborne radioactivity level, established exposure limits for the toxic materials, established permissible airborne concentration for radioactive material, and established immediately dangerous to life or health concentration for toxic material)
- The location of the hazardous area in relation to the nearest area having respirable air
- The period of time for which respiratory protection must be worn
- The activities of workers in the hazardous area

- The physical characteristics and functional capabilities and limitations of the various types of respirators
- Respirator-assigned protection factors listed in Attachment I, Table 1

Respirators for use under IDLH conditions:

The required respiratory protection for IDLH conditions caused by the presence of toxic materials, or a reduced percentage of oxygen, is a combination full face piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply. For rescue applications, a full face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes is acceptable.

When respirators are worn under IDLH conditions, at least one standby person shall be present in a safe area. The standby person shall have the proper equipment available to assist the respirator wearer in case of difficulty. Communications (visual, voice, signal line, radio, or other suitable means) shall be maintained between the standby person and the wearer. While working in the IDLH atmosphere, the wearer shall be equipped with safety harness and safety lines to permit removal to a safe area, if necessary. Provisions for rescue other than safety harness and lines may be used, if equivalent.

E. Breathing Air Quality

Workers using supplied breathing air equipment shall be thoroughly trained in its use.

Breathing air is typically supplied from cylinders or via a compressor. Appropriate measures shall be taken to ensure that all compressed breathing air meets at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

1. Oxygen content (v/v) of 19.5-23.5%;
2. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
3. Carbon monoxide (CO) content of 10 ppm or less;
4. Carbon dioxide content of 1,000 ppm or less; and
5. Lack of noticeable odor.

Suppliers of breathing air cylinders shall provide Campbell Companies with a certificate of analysis with each delivery certifying that the breathing air meets the requirements for Grade D breathing air; and that the moisture content in the cylinder does not exceed a dew point of -50 deg.F (-45.6 deg.C) at 1 atmosphere pressure. The certificate shall have the name of the breathing air supplier, the testing technician and date of test.

Breathing air cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178).

Breathing Air Compressors

Compressors used to supply breathing air to respirators shall be constructed and situated so as to:

1. Prevent entry of contaminated air into the air-supply system;
2. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (-5.56 deg.C) below the ambient temperature;
3. If required to ensure delivery of Grade D air to the user, provide suitable in-line air-purifying sorbent beds and filters. All filters, cartridges and canisters shall be labeled and color coded with the NIOSH approval label and the label shall remain legible. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions. A tag containing the most recent change date and the signature of the person authorized by the employer to perform the change shall be attached to the equipment.
4. For compressors that are not oil-lubricated, Campbell Companies shall ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
5. For oil-lubricated compressors, Campbell Companies shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.
6. The air shall be routinely tested to ensure that it meets Grade D requirements.

In addition, a stand-by attendant shall be on watch anytime workers are using breathing air supplied directly by a compressor.

Breathing air couplings shall be incompatible with outlets for nonrespirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing airlines.

E. Training

To protect employees from exposure to respiratory hazards using OSHA and ANSI standards as minimum guidelines, all employees who will wear respiratory protection will be trained on this policy. Training will be provided prior to job assignment where respirator equipment is required, and annually thereafter. Additional training is required when there are deficiencies in the employee's knowledge/skills or when there is a change in the work place or respiratory equipment that renders previous training obsolete. The training will include the following:

- Responsibilities of employees and supervisors

- How, why and for what jobs we use respirators
- Hazard assessment including limitations of respirators
- Hazard control
- Respirator selection
- Medical evaluation
- Respirator fit test
- Maintenance, care and storage
- Medical surveillance
- Program evaluation

All training shall be conducted in a way that is understandable to the employee, and is documented.

1. Why use respiratory protection
    - The nature, extent and effects of respiratory hazards
    - Consequences of improper fit, usage and maintenance on respirator effectiveness
2. Limitations and capabilities of the respirator
    - Air purifying respirators that filter either particles, or absorbing vapors and gases
    - Air supplying respirators that supply air from an uncontaminated source
    - Limitations of respirators in IDLH atmospheres and for emergency use only
3. How respirators are inspected, donned, removed, seal checked and worn
    - What to do if respirators have defects
    - Who to report problems to during use
    - Proper technique for donning and removing the respirator, and how to store when not in use
    - How to seal check using the positive and/or negative pressure method
4. Methods of maintenance and storage
    - Visual inspection of parts for worn or defective items

- How to keep the issued respirator clean and sanitary
- Requirement to disinfect and sanitize before reissue to other employees
- Proper storage in a cool, clean and dry location, placing them in a clean, sealed plastic bag after drying

5. Medical signs and symptoms that may limit or prevent the effective use of respirators

- An awareness of physical conditions that may indicate warning signs
- An obligation to report signs and symptoms and the opportunity for medical reevaluation
- Changes in weight (gain or loss)
- Physical changes in facial structure
- Changes in endurance, stability or general health
- Medication for illness

F. Medical Evaluation

All employees whose job classification may require use of respiratory protection shall be evaluated and certified by a physician or a licensed health care professional (PLHCP) as being "medically fit" to wear a respirator. For new hires, the medical evaluation shall be made before any use of respiratory equipment. Thereafter, the evaluation shall occur at a minimum annually. The medical evaluation consists of, at a minimum, the administration of a health questionnaire meeting federal guidelines or provisions for a physical examination by a PLHCP that elicits the same information as the questionnaire. The PLHCP shall be provided with supplemental information by the employer on the description of the job classification, possible work conditions and any additional personal protective equipment that may be required of the employee while using respiratory equipment. Also a copy of this program will be given to the PLHCP for reference along with the OSHA standard.

The administration of the health questionnaire will be done during work hours and at no cost to the employee. The information on the questionnaire shall remain confidential between the PLHCP and the employee. The employee must have access to the PLHCP for discussion and asking questions concerning their medical evaluation. Campbell Companies will only receive a recommendation of the employee's ability to wear respiratory equipment.

If an employee is restricted by the PLHCP from wearing a negative pressure respirator, but otherwise physically able to perform duties with a powered air respirator, then reasonable accommodations will be made by the program administrator not to have this restriction limit the employee's ability to perform his job.

G. Respirator Fit Test

Respirator fit testing is required of all employees prior to using a positive or negative tight fitting respirator. The fit test will be specific for respirator manufacturer, model and size. This test is to be repeated annually, or if there is a change in the respiratory equipment. Some substance specific standards may call for more frequent testing and dictate a specific protocol, which would take precedence over this program. A change in the employee's physical appearance can affect the seal of a respirator and may require re-testing. If the respirator is unacceptable to the employee due to comfort, irritation, or inability to get a seal, the employee will be offered a reasonable selection for an alternate choice of respirators.

The employee will be asked to wear the proposed respirator for a period of time to become familiar with the feel and fit. No obstacles can be between their face and the sealing surface of the respirator, including facial hair of 24 hours or more growth, side burns that extend into the sealing surface or hair that is long enough to prevent proper function of the respirator. Jewelry, caps, hats, scarves and certain safety gear must be evaluated as part of the fit test if the employee is permitted or required to wear them during work. OSHA did not restrict the use of contact lens with respirators, but did mandate that the use of corrective lens shall not interfere with the seal of the respirator. Any adaptive devices for vision correction with respiratory equipment will be supplied at no cost to the employee. The employee will be instructed on how to field check respiratory equipment. The positive and negative seal check methods of verifying a good seal shall be required before each and every entry into a respiratory hazard area. These seal checks are not to be considered a fit test.

<u>Positive Seal Check</u>

A positive seal check is accomplished by effectively sealing the exhalation valve and slowly exhaling. This should create a slight, positive pressure inside the face piece for a short period of time. The participant must be careful not to exhale too fast or small leaks can be nullified and/or large leaks artificially created.

<u>Negative Seal Check</u>

A negative seal check is accomplished by effectively sealing the inhalation ports of the respirator and inhaling slowly. The participant should be able to create a negative pressure inside the respirator and hold it for a short period of time. Inhaling too fast may nullify small leaks and/or artificially create other leaks.

<u>Fit Test (See Attachment V, Table 2 for "Acceptable Fit-Testing Methods")</u>

- Qualitative fit test – a pass/fail test that relies on the subject to detect a challenge agent and is predicated on an individual's sensory response.

- Quantitative fit test – uses an instrument to measure the challenge agent inside the respirator and gives a numerical value to the test data.

If the qualitative testing is used, the employee should be informed of the exposure limitations. A limit of 10 times the permissible exposure level for an 8-hour duration is the maximum exposure for either a half mask, or full face piece negative pressure respirator.

For OSHA guidelines, refer to Attachment V, Table 2 for Acceptable Fit Test Methods.

Irritant Smoke Protocol

Irritant smoke protocol for qualitative fit testing is very effective, since it is the only challenge agent that does not rely on a voluntary response. This type of test requires that the tester be well trained in the correct and safe use of the irritant smoke tubes. The smoke tubes can be a health hazard if not used properly and in a well ventilated room. Specific step by step procedures are referenced in Attachment III.

H. **Maintenance and Care**

Campbell Companies will provide for the cleaning and disinfecting, storage, inspection and repair of respirators that are issued to their employees. There are specific guidelines to follow in Attachment IV to ensure the respirators are clean and disinfected. Respirators designated for the exclusive use of an employee shall be the responsibility of that employee to maintain and keep in a sanitary condition. Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals. Respirators maintained for emergency, training, or fit testing use shall be cleaned and disinfected after every use.

Storage

Respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture and damaging chemicals. They shall be packed or stored to prevent deformation of the face piece. Emergency respirators shall, in addition, be kept accessible to the work area and stored in easily identifiable coverings. Reference the manufacturer's instructions for other recommendations.

Inspection

Respirators are inspected on a regular basis and employees are instructed on how to inspect their respirator. All respirators used on a routine basis shall be inspected before each use and during cleaning. All emergency respirators shall also be inspected at least on a monthly basis. Respirator inspection shall include the tightness of connections and the condition of various

parts including, but not limited to, the face piece, head straps, valves, gaskets, connecting tubes, cartridges, canisters and filters. Also, check all elastic parts for deterioration and pliability. Inspection of self-contained breathing apparatus shall be done only by trained technicians competent with that specific brand, make and model of respiratory equipment. The technician conducting the inspection shall certify the inspection by attaching a signed and dated tag or label to the equipment.

Repairs

Equipment that is defective, broken or otherwise in need of repair shall be identified immediately by attaching a red tag and stating the reason it is out of service. Repairs to respirator equipment shall be made by competent employees and only with the manufacturers' recommended replacement parts. Absolutely no substitution of parts is allowed that is not authorized by the NIOSH approval.

I. Medical Surveillance

Employees should be aware of medical conditions that would prevent or limit their use of respiratory equipment. Supervisors shall be informed when employees experience medical difficulties that may affect or be a result of respirator use. Substance specific hazards may require a specific medical monitoring procedure that requires biological testing. Employees will be required to complete a medical questionnaire initially, and then further evaluation at the frequency determined by the medical evaluator.

J. Program Evaluation

The supervisor will monitor the work site for acceptance of and compliance with the written respiratory program. The supervisor will address issues where employees have had deficient respiratory issues, i.e. cartridge breakthrough and the respirator effectiveness. Employees will be asked questions about the effectiveness of the program and encouraged to offer suggestions for improvement including how the fit test protocol was performed, the maintenance procedures for care and storage of respirators and overall program. Periodic audits will be documented and reviewed by the program administrator. The program administrator will report, at lease annually, to the management on the effectiveness of the total program.

Attachment I - Table 1: Assigned Protection Factors

Type of respirator	Respiratory inlet covering	
	Half Mask [1)]	**Full Facepiece**
Air purifying	10	100
Atmosphere supplying		
SCBA (demand) [2)]	10	100
Airline (demand)	10	100

Type of respirator	Respiratory inlet covering			
	Half mask	**Full Face**	**Helmet/ hood**	**Loose-fitting facepiece**
Powered air purifier	50	1000 [3)]	1000 [3)]	25
Atmosphere supplying airline				
Pressure demand	50	1000	-	-
Continuous flow	50	1000	1000	25
Self-contained breathing apparatus				
Pressure demand	-	[4)]	-	-
Open/closed circuit				

1) Includes ¼ mask, disposable half masks, and half masks with elastomeric facepieces.

2) Demand SCBA shall not be used for emergency situations such as fire fighting.

3) Protection factors listed are for high-efficiency filters and sorbents (cartridges and canisters). With dust filters, an assigned protection factor of 100 is to be used due to the limitations of the filter.

4) Although positive-pressure respirators are currently regarded as providing the highest level of respiratory protection a limited number of recent simulated workplace studies concluded that all users may not achieve protection factors of 10,000. Based on this limited data, a definitive assigned protection factor could not be listed for positive-pressure SCBA's. For emergency planning purposes where hazardous concentrations can be estimated, an assigned protection factor of no higher that 10,000 should be used.

NOTE: Assigned protection factors are not applicable for escape respirators. For combination respirators, e.g., airline respirators equipped with an air-purifying filter, the mode of operation in use will dictate the assigned protection factor to be applied.

Attachment II – Respirator Selection

Logic Guide: Reference ANSI 288.2 – 1992 7.2.2.

Respirator selection involves reviewing each operation to (a) determine what hazards may be present (hazard determination) and (b) select which type or class of respirators can offer adequate protection.

Hazard Determination Steps

The nature of the hazard shall be determined as follows:

- Determine what contaminant(s) may be present in the work place.
- Determine whether there is a published Threshold Limit Value, Permissible Exposure Limit, or any other available exposure limit or estimate of toxicity for the contaminant(s). Determine if the IDLH concentration for the contaminant is available.
- Determine if there is a comprehensive health standard (e.g., lead, asbestos) for the contaminant(s). If so, there may be specific respirators required that influence the selection process.
- If the potential for an oxygen-deficient environment exists, measure the oxygen content.
- Measure or estimate the concentration of the contaminant(s).
- Determine the physical state of the contaminant. If an aerosol, determine or estimate the particle size. Determine if vapor pressure of the aerosol is significant at the maximum expected temperature of the work environment.
- Determine whether the contaminant(s) present can be absorbed through the skin, produce skin sensitization, or be irritating or corrosive to the eyes or skin.
- Determine for a gas or vapor contaminant(s) if a known odor, taste, or irritation concentration exists.

Selection Steps

The proper respirator shall be selected as follows:

- If unable to determine what potentially hazardous contaminant may be present, the atmosphere shall be considered IDLH.

- If no exposure limit or guideline is available and estimates of the toxicity cannot be made, the atmosphere shall be considered IDLH.
- If a specific standard exists for the contaminant, follow those guidelines/requirements.
- If there is an oxygen-deficient atmosphere, the type of respirator selected depends on the partial pressure and concentration of oxygen and the concentration of the other contaminant(s) that may be present.
- If the measured or estimated concentration of the contaminant(s) is considered IDLH, reference “Respirators for use under IDLH conditions” at the end of this guide.
- Divide the measured or estimated concentration of each contaminant by the exposure limit or guideline to obtain a hazard ratio. When two or more substances are present, consideration needs to be given if there is a synergistic or combined effect of exposure rather than considering each substance individually. Select a respirator with an assigned protection factor greater than the value of the hazard ratio, as listed in Attachment I, Table 1.
- If the contaminant(s) is a gas or vapor only, select a device with an assigned protection factor that is greater than the hazard ratio. The concentration shall also be less than the maximum use concentration of the cartridge/canister.
- If the contaminant is a paint, lacquer, or enamel, select a respirator approved specifically for paint mists or an atmosphere-supplying respirator. (Approval label or regulatory provision may preclude use for some paints.)
- If the contaminant is a pesticide, select a respirator and filtration system specifically approved for pesticides or an atmosphere-supplying respirator. (Approval label may preclude use for some pesticides.)
- If the contaminant is an aerosol with an unknown particle size, or less than 2 um (MMAD), a high-efficiency filter shall be used.
- If the contaminant is a fume, use a filter approved for fumes or a high-efficiency filter.
- If the contaminant is an aerosol with a particle size greater than 2 um (MMAD), any filter type (dust, fumes, mist, or high efficiency) may be used.
- If the contaminant is a gas or vapor and has poor warning properties, the use of an atmosphere-supplying respirator is generally recommended.
- When atmosphere-supplying respirators cannot be used because of the lack of a feasible air supply, or the need for worker mobility, air-purifying devices should be used only if:

1. The air-purifying respirator has a reliable end-of-service-life indicator that will warn the user prior to contaminant breakthrough or,

2. A cartridge change schedule is implemented based on cartridge service data including desorption studies (unless cartridges are changed daily), expected concentration, pattern of use, duration of exposure, and the chemical does not have a ceiling limit.

- Respirators for use under IDLH atmospheres:

The required respiratory protection for IDLH conditions caused by the presence of toxic materials, or a reduced percentage of oxygen, is a combination full face piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply. For rescue applications, a full face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes is acceptable.

When respirators are worn under IDLH conditions, at least one standby person shall be present in a safe area. The standby person shall have the proper equipment available to assist the respirator wearer in case of difficulty. Communications (visual, voice, signal line, intercom, radio or other suitable means) shall be maintained between the standby person and the wearer. While working in the IDLH atmosphere, the wearer shall be equipped with a safety harness and lifeline to permit removal to a safe area, if necessary. Provisions for rescue other than harness and lifeline may be used, if equivalent.

- Special considerations for confined space entry into IDLH conditions are not addressed in this policy.

Use and duration of cartridges

Contaminant (1)	Maximum Concentration	Maximum Use Time (2) (Hours)
1,3 Butadiene	50	1
Ammonia	100	4
Benzene	10	8
Benzene	50	4
Chemicals not specified (3)	NA	1
Naphtha	100	4
Naphtha	500	2

Particulates (including dusts, mists, welding fumes)	NA	8
Sulfur Dioxide	50	8
Total Hydrocarbons (as n-hexane)	100	4
Total Hydrocarbons (as n-hexane)	500	1

1. If more than on contaminant is present, use the lowest maximum use time.
2. Cartridges should be changed out if the contaminant can be detected inside the respirator mask, regardless of the maximum use time.
3. Cartridges for chemicals not listed should be used for only 1 hour. This will err on the side of safety. If specific information is needed on a particular chemical, consult with the MSDS or your supervisor.

Attachment III - Fit Testing

If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the face piece several times and to adjust the straps to become adept at setting the proper tension on the straps.

A. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
   1. Position of the mask on the nose
   2. Room for eye protection
   3. Room to talk
   4. Position of mask on face and cheeks

B. The following criteria shall be used to help determine the adequacy of the respirator fit:
   1. Chin properly placed
   2. Adequate strap tension, not overly tightened
   3. Fit across nose bridge
   4. Respirator of proper size to span distance from nose to chin
   5. Tendency of respirator to slip

6. Self-observation in mirror to evaluate fit and respirator position

C. The test subject shall conduct a user seal check, utilizing the negative and positive pressure seal check methods. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the user seal check tests.

D. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel, which interferes with a satisfactory fit, shall be altered or removed.

E. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

F. Exercise regimen: Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercise that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test

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

H. Test exercises: The following test exercises are to be performed for all fit testing methods. The test subject shall perform exercises, in the test environment, in the following manner:

1. Normal breathing: In a normal standing position, without talking, the subject shall breathe normally.

2. Deep breathing: In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

3. Turning head side to side: Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

4. Moving head up and down: Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

5. Talking: The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a person looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

6. Bending over: The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments that do not permit bending over at the waist.

7. Normal breathing: Same as exercise (H,1).

Each test exercise shall be performed for one minute. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

Irritant Smoke Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

A. General Requirements and Precautions

1. The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

2. Only stannic chloride smoke tubes shall be used for this protocol.

3. No form of test enclosure or hood for the test subject shall be used.

4. The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

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

Sensitivity Screening Check

1. The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

2. The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

3. The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties, and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

Irritant Smoke Fit Test Procedure

1. The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

2. The test subject shall be instructed to keep his/her eyes closed.

3. The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the face piece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

4. If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

5. The exercises identified in section H of this attachment shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

6. If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.

7. Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check with the smoke from the same smoke tube used during the fit test, once the respirator has

been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

8. If a response is produced during this second sensitivity check, then the fit test is passed.

Attachment IV - Respirator Cleaning Procedures

These procedures are provided as a guideline when cleaning respirators. They are general in nature, and the administrator as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth (i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user).

Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

A. Wash components in warm water (110° F maximum), with mild detergent or cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

B. Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain.

C. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

   1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 110° F, or,

   2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100cc of 45% alcohol) to one liter of water at 110°F, or,

   3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

D. Rinse components thoroughly in clean, warm (110° F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

E. Components should be hand-dried with a clean lint-free cloth or air-dried.

F. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.

G. Test the respirator to ensure that all components work properly.

Attachment V – Table 2: Acceptable Fit-Testing Methods

	QLFT	QNFT
Half-Face, Negative Pressure, APR (<100 fit factor)	Yes	Yes
Full-Face, Negative Pressure, APR (<10 fit factor) Used in atmospheres up to 10 times the PEL	Yes	Yes
Full-Face, Negative Pressure, APR (>100 fit factor)	No	Yes
PAPR	Yes	Yes
Supplied-Air Respirators (SAR), or SCBA used in Negative Pressure (Demand Mode) (>100 fit factor)	No	Yes
Supplied-Air Respirators (SAR), or SCBA used in Positive Pressure (Pressure Demand Mode)	Yes	Yes

To receive medical testing and fit testing please go to Rocky Mountain Care Clinic for a respirator fitness determination and fit test. Once you receive medical clearance to wear the respirator and a proper size and fit is issued see the Safety Coordinator at Campbell Companies to be issued a respirator and cartridges for your work application.

Hearing Conservation Program

Purpose

The company has established a Hearing Conservation Program to protect worker(s) from the hazards of noise on the job. Provincial OHS Act and Regulations require that each employer implement a hearing conservation program when workers are exposed to noise levels exceeding 85 dB. It is not hard to exceed this level of noise on many of the jobs sites. Typically, noise levels exceeding 85 dB are experienced when working with any type of pneumatic chipper or hammer, metal saw, grinders and heavy machinery. See attachment I for list of some common noise levels.

Responsibility

The Manager of Operations is responsible for the developing a written Hearing Conservation Procedure and overseeing the training of all employees in the company. The Manager of Operations is also responsible for the monitoring and administering this procedure.

Introduction

The OSHA Standard on Occupational Noise Exposure, 29 CFR 1910.95, established the permissible limit of noise as 85 dB(A) (decibels), expressed as an eight-hour (8-hours), time-weighted average, (TWA). This standard allows short-term unprotected noise exposure up to a maximum of 115dB (A), peak sound.

The noise standard requires the identification by personnel monitoring of employees who may be exposed above the 85 db (A), 8-hour, TWA. Hearing protection is also required for specific activities or using certain types of equipment.

Procedures

The company has taken a conservative approach to noise hazards by establishing this program. The following elements establish the program:

- An Audiometric Testing Program
- An Employee Education and Training Program
- Monitoring and Analysis of Workplace Noise Levels
- Providing Suitable Engineering Controls
- Providing Hearing Protectors
- Maintain required Records

Audiometric Testing Program

Each new employee whose work exposes them to “excess noise levels” as defined by the provincial OHS Regulation, will receive an Audiometric test as part of a pre-screening physical examination to establish a baseline audiogram against which subsequent audiograms can be compared.

Annually, all employees who are exposed to noise levels exceeding the 85 dB standard will be given a follow-up Audiometric examination to monitor for any significant changes in their hearing ability. Employees will be formally notified if there is any change in their hearing as the result of the testing. The Standard has defined this shift as a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 200, 3000 and 4000 hz in either ear. In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: “Calculation and Application of Age Correction to Audiograms.” When audiometric testing is required, each affected employee must not be exposed to any workplace noise for at least 14 hours prior to his/her test. This requirement may be met by wearing hearing
protectors which will reduce the employee’s exposure to a sound level of 80 db (A) or below.

Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation, or who has satisfactorily demonstrated competence in administering audiometric examinations, obtaining valid audiograms, and properly using, maintaining and checking calibration and proper functioning of the audiometers being used. A technician who operates microprocessor audiometer does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.

An audiologist, otolaryngologist or physician will review problem audiograms and shall determine whether there is a need for further evaluation. The company will provide tot eh person performing this evaluation the following information:

a. A copy of the 29 CFR 1910.95 Hearing Conservation.
b. The baseline audiogram and most recent audiogram of the employee to be evaluated.
c. Measurement of background sound pressure in the audiometric test room as required in 29 CFR
1910.95 Appendix D.
d. Records of audiometric calibrations as required by 20 CFR 1910.95 Appendix E.

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift as defined by OSHA, the employee will be informed of this fact, in writing, by the company within 21 days of determination.

Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the company will ensure that the following steps are tank when a standard threshold shift occurs:

a. An employee not using hearing protectors will be fitted with hearing protectors, trained their use and care, and required to use them; and
b. An employee already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
c. Refer the employee for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if the company suspect that a medical
pathology of the ear is caused or aggravated by the wearing of haring protectors.
d. Inform the employee of the need for an otological examination if a medical pathology of
the ear which is unrelated to the use of hearing protector is suspected.

If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour
TWA average of 90 decibels indicates that a standard threshold shift is not persistent the company:
a. Will inform the employee of the new audiometric interpretations: and
b. May stop the required use of hearing protectors for that employee.

Employee Education and Training

Employees will be trained on the use of personal hearing protection equipment. Also each employee must know how to clean and maintain the hearing protection equipment.

- The training will cover the following:
- Training will be for all employees who are exposed to noise at or above the 8-hour TWA of 85 dB.
- The training will be repeated annually for each employee included in the hearing conservation program.
- The effects of noise on hearing
- The purpose of hearing protectors, the advantages, disadvantages, and the attenuation of various types and instruction on selection, fitting, use and care
- The purpose of audiometric testing, and an explanation of the test procedures.
- Access to information and training materials.

Monitoring and Analysis of Workplace Noise Levels

The companies will periodically or as necessary, conduct noise level surveys of the workplace. The results of these surveys will be made available to employees.

Any job area or company location found to be in excess of the allowable designated noise levels that cannot be brought into compliance with the noise standard will be designated as an area where hearing protectors are to be worn. When signs are posted employees must wear hearing protection. The signs may read as follows:

NOTICE
EAR PROTECTION
REQUIRED
IN THIS AREA

REMEMBER: A client may determine if a unit or work area is classified as a high noise area. After the determination is made, company employees will be instructed to wear the appropriate hearing protection.

Provide Suitable Engineering Controls

Where appropriate, the company will provide engineering controls to reduce noise exposure. Due to the complexity of most job sites, it is difficult if possible to institute effective engineering controls for most noise exposures. Should this be the case, then employees will be required to wear suitable hearing protection.

Provide Hearing Protectors Where Required

The company will provide the required employees with hearing protectors if his/her 8 hour TWA is above the 85dB (A). The company will also make hearing protectors available to all employees exposed to a TWA above 85dB (A) at no cost to the employee. Any employee who may have a significant threshold shift of hearing level will be required to wear hearing protection if they are exposed to noise TWA of 85dB. The company will ensure all Hearing protectors meet the requirements in CSA Standard Z94.2-02, Hearing Protection Devices – Performance, Selection, Care and Use. The company will make a concerted effort to fine the right protector for each employee, one that offers the right attenuation, is accepted on the terms of comfort, and is used by the employee.

Responsibilities

A CLIENT WILL:
a. Determine all sources of noise at or above 85dD.
b. Determine if personnel have 8-hour TWA exposures at or above fifty-percent (50%) of the OSHA
allowable.
c. Review noise exposures annually for all job classifications with TWA
d. Exposure at or above fifty-percent (50%)

e. Ensure that audiograms are made annually for personnel whose TWA exposures are at or
above fifty-percent (50%) of the OSHA allowable.

JOB SITE SUPERVISION WILL:

a. Will require hearing protection in all area with noise levels at or above the 85dB(A) and for all task which generate such noise level (i.e., grinding, hammering). Ear plug shall be required in an area and/or on tasks with the sound levels exceeding 105dB.
b. To alert employees to possible hazardous noise exposures, Signs shall be posted in work areas in which the sound levels may exceed 85dB. These signs will be posted by the client.
c. Evaluate the need for engineering and/or administrative controls to reduce the noise levels below the 85 dB and, where feasible, develop a plan to reduce all personnel exposures to less than fifty- percent (50%) of the OSHA allowable.
d. Make hearing protection available and enforce its use by all employees with TWA exposures at or above the fifty-percent (50%) of the OSHA allowable and/or by those who must enter or work in areas where the noise level is 85dB or above.

REMEMBER - The client determines if a unit or work area is classified as a high noise area. After the determination is made, the company's employees will be instructed to wear the appropriate hearing protection.

Recordkeeping

All record-keeping for this program will be maintained in the office. Records will include:

a. Audiometric tests
b. Noise surveys
c. Employee training
d. Engineering controls implemented
e. Record of purchase of hearing protector

Work required Hearing Protectors

There are many jobs or types of work that generally produces noise level that intermittently or for short durations exceed the permissible TWA. It is the policy of the company to require all workers who are engaged in these jobs to wear hearing protectors. The attached list is some of those jobs.
See Attachment

Hearing Protectors

Employees may choose the type of hearing protection that best suits their particular assignment and personal preference for among those listed below. Each employee required to wear hearing protection is responsible for carrying hearing protection on his/her person. Hearing protection is furnished at no cost to employees.

EAR PLUGS – Most ear plugs, when worn properly, have a noise reduction rating (NRR) on the package. Most ear plugs have NRR of about 30.

EAR MUFFS – Adjustable muffs can be worn in three positions:

POSITION	NRR
1. Over the head	24 this depends on the NRR of the Ear Muff)
2. Under the chin	20
3. Behind the head	20

COMPUTING THE HEARING PROTECTION LEVEL

To compute the actual hearing protection level under the protector, subtract 7 dB(A) from the Noise Reduction Rating (NRR), then divide the number by 2, and subtract the remainder form the measured noise level dB (A).

For example: NRR of 29 -7 = 22 dB(A)
22 dB(A) ÷ 2 = 11 dB(A)

Noise level of 95 dB(A) – 11 = 84 dB(A)
Therefore, this device offers a protection level of 11 dB(A).

ATTACHMENT I

The following list represents some work activities and equipment which will require the use of hearing protection:

ACTIVITIES AND/OR EQUIPMENT TYPICALLY RESULTING IN HIGH NOISE LEVEL	ESTIMATED AVERAGE NOISE LEVEL dB(A)
1. Air Arc Gouging	115
2. Air compressor	95
3. Chain saw	107
4. Electric Disc Grinder	100
5. Forklift inside a trailer	98
6. Heavy equipment working	100
7. Impact tools	108
8. Pneumatic chipping hammer	110
9. Abrasive blasting	100
10. Welding machines	95

ATTACHMENT II
HEARING CONSERVATION PROGRAM
FOLLOW UP TRAINING RECORD

FROM: _____
Manager or Supervisor

The employee listed below recently was found to have a confirmed significant shift in the hearing
threshold (as defined by OSHA). An investigation and additional training is required. When this
form is completed and reviewed with the employee, please file in the office.

EMPLOYEE NAME:_____
Print or type First, MI, Last Name

_____ _____ _____
Social Security Number or Employee Number **Reported Date**

JOB CATEGORY _____
(Current Assignment)

The Potential for noise exposure and specific requirements for using hearing protection in their area
should be reviewed with this employee within 2 weeks. If hearing protection requirements have not
been established in this work area, it must be done as soon as possible.

The retraining for this employee should include:

* The temporary and permanent effects of noise on hearing
* Established hearing protection requirements
* Any questions the employee may have on the use of hearing protection
* The proper use of hearing protection
* Comments the employee has on potential off-the-job noise exposure

Comments on discussion held:
_____
_____
_____

I have discussed the above items with this employee:

_____ _____ _____
Manager or Supervisors Name (print) Signature Date of Discussion

Scaffolding Policy

Purpose

It is the Company's purpose in issuing these procedures to further ensure a safe workplace based on the following formal, written procedures for scaffold work. These procedures should be reviewed and updated as needed to comply with new regulations, new best practices in scaffolding, and as business practices demands.

Application

This general scaffold plan applies to:

- All employees who perform work while on a scaffold.
- All employees who are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds.

General Procedures

Capacity

- Each scaffold and scaffold component we use will support, without failure, its own weight and at least four times the maximum intended load applied or transmitted to it.
- When we use non-adjustable suspension scaffolds, each suspension rope, including connecting hardware, will support, without failure, at least six times the maximum intended load applied or transmitted to that rope.
- Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.
- Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.
- The stall load of any scaffold hoist shall not exceed 3 times its rated load.

Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.

Platform Construction

Platform – Decks

- Use wooden and metal decks according to job requirements, standards, regulations and manufacturer's instructions.

- Only cleat planks at the ends to prevent lengthwise movement. Wiring down planks can also prevent movement, provided wire does not create a tripping hazard. Where planks overlap, rest the cleated end on the support. Do not use cleats elsewhere on the plank to prevent splitting.
- Ensure that adjoining planks are of uniform thickness for an even platform.
- Lay planks side by side across the full width of the scaffold.
- Check scaffold planks for large knots, worm holes, steeply sloping grain at the edges, spike knots, and splits. Splits wider than 10 mm (3/8 in), lengthwise closer than 75 mm (3 in.) to the edge of the plank, or lengthwise longer than ½ the length of the plank are not acceptable. Discard immediately any planks showing these or other defects.
- Check hooks and hardware of prefabricated platform units regularly for looseness, distortion and cracks. Damage can occur if the platforms are dropped or thrown.
- Clean ice, snow, oil and grease off planks. Platform decks should be slip-resistant and should not accumulate water.
- Inspect planks on a regular basis while on the scaffold. Weather, rot, and general use can deteriorate the planks.
- Do not jump on the planks to test their strength. Jumping can cause undetectable damage.
- Ensure that all working platforms are about 500 mm (20 in.) minimum in width.
- Use a minimum of 50 mm (2 in.) x 250 mm (10 in.) Number 1 Grade spruce-pine-fir (SPF) planking or better.
- Overlap or extend planking 150 mm (6 in.) to 300 mm (12 in.) and cleat at each end to prevent planking from slipping and blowing off.
- Support planks at intervals not exceeding 3m (10 ft) for light work and 2.1 m (7 ft.) for heavy work (bricklaying, masonry).
- Check with officials in your local jurisdiction as recommendations may vary.
- Stack planks on a firm level surface to prevent warping.
- Band the ends of the boards. Do not paint as the paint can conceal defects.
- Do not use scaffold planks as a base to stack materials, or as ramps or temporary roadways.

Supported Scaffolds

- Refer to safety regulations and standards for design and assembly requirements.
- Choose the right scaffold system for the job.
- Erect all scaffold parts according to the manufacturer's instructions.
- Select scaffold according to:
    - height required
    - type and duration of work
    - range of weather conditions
    - weight of workers, materials and equipment
    - location
    - requirements for pedestrian traffic

- Erect scaffold on a base that will support all the loads that will be applied including materials and equipment.
- Make sure the backfill is compact and level. Replace mud and soft soil with gravel or crushed stone.
- Provide adequate sills for scaffold posts and use base plates.
- Set scaffold feet centrally on mudsills consisting of 50x250 mm (2x10 in.) planks. Sills should extend at least 610 mm (2 ft.) beyond the scaffold base and be long enough to extend under at least two scaffold feet.
- Install scaffold with jackscrews (adjusting screws). They allow for minor adjustments to help keep scaffold plumb and level.
- Take extra precautions when erecting scaffold on frozen ground. Thawing soil can become water-soaked and lose its ability to bear weight.
- Brace both sides of every frame for the vertical plane. Install horizontal bracing at the joint of every third tier of frames. This bracing is often attached to the point where the scaffold is tied to the structure.
- Do not force braces to fit. Level the scaffold until a proper fit can be made easily.
- Use coupling devices to join frames to prevent the joints from pulling apart.
- Do not use nails or other devices in the place of proper retention parts as recommended by the manufacturer.
- Tie or brace the scaffold to a solid structure as appropriate.
- Use a debris net, catch platform or similar structure where appropriate to catch falling objects.
- Do not allow the ratio of scaffold height to base width to exceed 3 to 1 unless the scaffold is:
    - tied into a structure
    - stabilized by guy wires
    - secured by outriggers or stabilizers to maintain the ratio

Suspension Scaffolds

- Ensure that platform is installed and maintained according to job requirements, safety regulations, standards and the manufacturer's specifications.
- Inspect all equipment before erecting and before each shift.
- Use a separate safety harness attached to an independent life line for each worker. Maintain lanyard attachment at highest point possible.
- Ensure that suspended platform roof beams and attachments are secure.
- Ensure that the roof or parapet wall is structurally sound to support either outriggers or cornice hooks.
- Check for kinked or damaged ropes.
- Secure all ropes at anchor ends.
- Ensure that all safety equipment, stops, override switches and brakes function properly.
- Prevent contact between welding or grinding equipment and wire safety or suspension ropes.
- Secure hand tools to the platform.

- Ensure that power source is secured and properly grounded.
- Secure platform when not in use.
- Ensure that guardrails and toe boards are in place.
- Extend suspension ropes completely to the ground or terminate with wire rope clips to prevent the stage from running off the end of the ropes.
- Test by raising the fully loaded platform a few feet off the ground before going aloft.
- Do not exceed platform load capacity.
- Do not enter or leave the platform other than at ground level or at other safe access points.
- Do not allow electric cables or connections to lie in gutters or other areas where water can collect.
- Do not work near exposed electrical circuits or equipment.
- Do not join platforms unless they are designed for this purpose.
- Do not use damaged or defective equipment.
- Do not alter, substitute or remove components of platform.
- Do not use life line for raising or lowering tools or materials.
- Do not move work platform unless all workers on it are protected by individual safety belts and lines.

Rolling Scaffold

- Assemble the rolling scaffold according to manufacturer's instructions.
- Ensure that the surface on which the scaffold is moved is level and without holes or obstructions.
- Brace all rolling scaffolds horizontally and diagonally.
- Cleat or secure all planks.
- Prevent joints from separating.
- Secure access ladders.
- Make sure the platform has appropriate guardrails (hand, mid, toe).
- Ensure that each wheel or castor is equipped with brakes to prevent rolling and swiveling.
- Lock the caster brakes before climbing onto scaffold.
- Secure or remove all material, equipment and personnel from platform before moving it.
- Push towards the base when moving.
- Use the built-in access ladders to reach the platform.
- Refer to safety regulations for height stability requirements.
- Do not stay on the scaffold when it is being moved. If a worker must remain on the scaffold, make sure the worker is secured to the building (not the scaffold) with appropriate safety harness and lanyard.

- Do not try to move a rolling scaffold without enough help. Watch out for slopes, holes, debris, and overhead obstructions.
- Do not extend adjusting screws more than the manufacturer recommends.
- Do not allow the working platform height to exceed three times the base width, unless it is guyed and equipped with outriggers or otherwise stabilized.
- Do not use powered devices to move scaffolds.
- Do not lean access ladders against rolling scaffolds.
- Do not over-reach from the scaffold.
- Do not climb using the frame.

Fall Protection Plan

Fall protection planning is critical to the safety and wellbeing of our employees. Our fall protection plan follows certain requirements that are different depending on the type of scaffold we are using. In this plan we address fall protection for our scaffold erectors and dismantlers separately. One fact never changes. We know we must provide fall protection for any employee on a scaffold more than 10 feet above a lower level.

Working Employees

This fall protection plan for our working employees is for the following type(s) of scaffold(s):

- Single- or two-point adjustable suspension scaffold-We will protect each employee on our single- or two-point adjustable suspension scaffolds by a personal fall arrest system. Our personal fall arrest systems:
    - Meet the requirements of your local jurisdiction
    - Are attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member.

NOTE: Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.

When horizontal lifelines are used, they shall be secured to two or more structural

members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.

When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.

Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

Using Scaffolds

Site preparation, scaffold erection, fall protection, and gaining access to the working platform are only some of the requirements for scaffold work. While this all takes concentration and safe work practices, the most dangerous time can be when employees are concentrating on their work and not particularly aware of the hazards of working from scaffolds. It is critical that employees who use scaffolds be trained, among other things, in the recognition of the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. Our competent person will inspect all scaffolds and scaffold components for visible defects before each work shift, and after any occurrence that could affect a scaffold's structural integrity. However, in addition to that, all users of scaffolds in this company will know and understand the following safety rules:

- Scaffolds and scaffold components will never be loaded in excess of their maximum intended loads or rated capacities.
- Debris must not be allowed to accumulate on platforms.
- Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.
- Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately tagged out, repaired or replaced, braced to meet those provisions, or removed from service until repaired. An example of tag used in tagging out scaffolding equipment is provided at the back of this program.
- Scaffolds shall not be moved horizontally while employees are on them, unless they have been designed by a registered professional engineer specifically for such movement or, for mobile scaffolds.
- The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any

conductive material handled on them might come closer to exposed and energized power lines.

- Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.
- Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.
- Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.
- Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.
- Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.
- Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.
- Debris shall not be allowed to accumulate on platforms.
- Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.
- Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:
    - When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder;

    - The platform units shall be secured to the scaffold to prevent their movement;
    - The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection, and
    - The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

- Platforms shall not deflect more than 1/60 of the span when loaded.

- To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:
- An insulated thimble shall be used to attach each suspension wire rope to its hanging support (such as cornice hook or outrigger). Excess suspension wire rope and any additional independent lines from grounding shall be insulated;
- The suspension wire rope shall be covered with insulating material extending at least 4 feet (1.2 m) above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so that it does not become grounded;
- Each hoist shall be covered with insulated protective covers;
- In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure. The size of this conductor shall be at least the size of the welding process work lead, and this conductor shall not be in series with the welding process or the work piece;
- If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off; and
- An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

Prohibited Practices

The following practices will never be tolerated in this company:

- Scaffold components manufactured by different manufacturers will never be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained.
- Unstable objects will never be used to support scaffolds or platform units. Footings must be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
- Cross braces will never be used as a means of access.

Duties of Competent and Qualified Persons

Only qualified and competent personnel are allowed to modify scaffolding systems. Non-qualified personnel may create more hazards. If modifications are attempted by non-qualified personnel they will be subject to disciplinary action up to and including termination of employment.

Tagging

Tags must be placed at each point of entry to the scaffold. This includes access points from ground level and any access points from the structure with which the scaffold is being used.

Doing so ensures that workers are aware of the status and condition of the scaffold, regardless of where they access it. Whatever their color, tags must include:

(a) the duty rating of the scaffold,
(b) the date on which the scaffold was last inspected,
(c) the name of the competent worker who inspected the scaffold,
(d) any precautions to be taken while working on the scaffold, and
(e) the expiry date of the tag.

Scaffolds must be inspected prior to initial use and at least every 21 calendar days thereafter while workers work from the scaffold or materials are stored on it. A scaffold that is erected but not immediately put into service, or not used for more than 21 consecutive calendar days, must be tagged with a red tag until inspected by a competent worker. A scaffold sitting idle may be exposed to weather or other circumstances that could make it unsafe for use. Inspection, just prior to the scaffold being put into service, confirms that it is safe for workers to use.

The tags let workers know that a particular scaffold is safe for use, that a potential or unusual hazard is present, or the scaffold is unsafe for use. The yellow tag is required to describe any precautions to be taken while working on the scaffold. A scaffold being modified on a particular level requires a yellow tag. The tag alerts workers climbing onto the scaffold of the modification work and any special precautions that might affect them.

Color of Inspection Tag	Wording to Appear on Tag
Green	“Safe for Use” or similar wording
Yellow	“Caution: Potential or Unusual Hazard” or similar wording
Red	“Unsafe for Use” or similar wording

Training

Recognizing the need for training for employees who: (1) perform work while on scaffolds, (2) are involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting scaffolds, and (3) have lost the requisite proficiency, training is one of the highest priority of this program.

Employees Who Use Scaffolds

Our employees who perform work on scaffolds will be trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training will include the following areas as applicable:

- The nature of and the correct procedures for dealing with electrical hazards.
- The nature of and the correct procedures for erecting, maintaining, and disassembling the fall protection and falling object protection systems used.
- The proper use of the scaffold, and the proper handling of materials on the scaffold.
- The maximum intended load and the load-carrying capacities of the scaffolds used.
- Tagging of scaffolds.
- Any other pertinent requirements of the local standards and regulations.

Employees Who Erect, Disassemble, Move, Operate, Repair, Maintain, or Inspect Scaffolds

Our employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds will be trained by our competent person to recognize the hazards associated with the work being done. The training will include the following as applicable:

- The nature of scaffold hazards.
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question.
- The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- Tagging of scaffolds.
- Any other pertinent requirements of this subpart.

Employees Who Need Retraining

When we have reason to believe that one of our employees lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, we will retrain the employee so that the requisite proficiency is regained. Retraining will be done in at least the following situations:

- Where changes at the worksite present a hazard about which the employee has not been previously trained.
- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.
- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

Hand Tool Safety

Purpose:

There are various types of tools and equipment used in the workplace for many different purposes. Examples include, but are not limited to, portable hand tools, power tools, pneumatic tools, and powder-actuated tools.

The purpose of this policy is to provide employees with appropriate knowledge relating to the care and use of tools and equipment and to protect employees from hazards associated with improper use of tools and equipment and defective and poorly maintained tools and equipment.

Policy:

Only trained and/or experienced employees may use/operate tools or equipment. Tools and equipment shall not be modified and they are to be used only for their designed purpose. It shall be the responsibility of the employee to inspect tools and equipment prior to use and to use all tools and equipment in a safe manner. Employees observed abusing, altering, modifying or misusing tools or equipment shall be subject to disciplinary action. Employees shall wear all appropriate personal protective equipment while using tools and equipment. Additionally if a tool or piece of equipment is found to be defective, the tool/equipment shall be red-tagged, taken out of service until it can be replaced or repaired by a qualified person.

It shall be the responsibility Project Manager or Site Superintendent to designate a competent person who will be assigned to be responsible for testing/inspecting and repairing all tools and equipment. All periodic inspections, maintenance and repairs of tools or equipment shall be documented.

Procedure:

General Tool Safety:

Many serious injuries have resulted from the improper use of tools and equipment. Many of these injuries could have been prevented if the following rules were followed:

Inspection and Maintenance:

All tools shall be identified and inventoried either individually or by group.

All tools in the inventory shall have a documented inspection at least once every six months. In addition to these periodic documented inspections all tools shall be inspected prior to issue and upon return by the tool room attendants and prior to each use by the user.

All tools will be kept in good working condition with no modifications.

All periodic inspections and all maintenance & repairs shall be documented. Completed forms shall be kept in a binder in the tool room or tool trailer for one year. The binder shall contain a copy of the inspection checklist for the type for tools and/or equipment being inspected.

- **Selection**
  Use the right tool for the task instead of trying to make the wrong one fit.
- **Use**
  Keep control of yourself, the tool, and the job. When applying force with a tool, remember that it may slip, break, or just suddenly do its job. Watch your hands and your balance (body mechanics) to avoid injury.
  Vibration Absorbing Gloves are to be made available to workers using pneumatic impact guns or other vibrating equipment. These gloves are required PPE for worker's operating heavy vibrating tools (i.e. jack hammers, 90 guns, impact guns etc.). The use of these gloves are designed to dampen vibration, dissipate impact and absorb shock, they can assist in the prevention of cumulative trauma injury often associated with operating this type of equipment. They only work if you use them.
  Select the right protective equipment for the task and use it properly.
  Do not use tools and equipment that you have not been trained to use.
- **Care**
  Take proper care of your tools and equipment. Keep them stored where they will not get damaged and will not present a hazard.
  Check your tools and equipment prior to use for defects, wear, or damage. Immediately remove from service and tag any defective tools. Damaged tools shall be turned into the tool room for repair or replacement.
- **Supervision**
  Supervisors shall be responsible for ensuring that employees are trained before using a specific tool. Watch your employees at work. Ask them about their immediate assignment and take an interest in finding the safest way to do the job. Then follow up to insure that the tools and equipment in your area are being used safely.

Hand Tool Safety

Hand tools shall only be used for the purpose for which they are intended.

All appropriate PPE will be worn while using hand tools.

- A face shield is required in addition to safety glasses whenever you are grinding, torching, cutting, brazing, sanding buffing and steam cleaning.

Wrenches, including adjustable, pipe and socket shall not be used when jaws are sprung to the point of slippage.

Pipe wrench parts (i.e., jaws) are not to be removed and used for anything other than the manufactured use.

The use of snipes and cheater bars or double wrenching to gain leverage **is prohibited.**

Always use tool holder while using hammer and knocker wrenches.

Hand tools shall be tagged and removed from service if any of the following defects are present:

- Impact tools, such as hammers, flange wedges chisels, drift pins, pin bars and knocker wrenches with visible signs of mushrooming, cracking or bending.
- Wooden handle tools, such as hammers, picks, shovels, and brooms with visible sign of cracking, loosening or splintering of the handle.
- Wrenches, such as adjustable, combo and pipe with visible signs of bending, cracking, defective handles or other defects that impair their strength.

Electrical Power Tool Safety

All appropriate PPE will be worn while using power tools.

Be sure that the proper permit has been obtained prior to use of electrical power tools.

GFCI's are to be used with all portable electric equipment. GFCI's are to be inspected and tested prior to each use.

Do not connect electrical power unless the operating switch is turned off.

Employee shall avoid loose fitting clothing when operating power tools.

The power source on tools shall be physically disconnected prior to attempting any repairs or attachment replacement.

Protective guards on power tools **shall not** be removed, altered or modified.

Trigger/switch locks on power tools are prohibited.

All electrical tools and power cords must be inspected per the Electrical Equipment Safety and Inspection Policy.

Electrical tools and power cords must display the current inspection color code for the current inspection period to it being placed in service.

Electrical tools **shall not** be hoisted or carried by their power cords.

Cords are tripping hazards. Route them so as to minimize interference in walkways. Overhead is preferred.

Electrical power tools shall be tagged and removed from service if any of the following defects are present:

- Electrical power tool cord does not have current inspection color code.
- Power cord is frayed, cut or damaged. The use of electrical tape to cover damage to cords **is prohibited**.
- Defective or faulty on/off switches.
- Loose or defective components

Air Power Tool Safety

All hoses exceeding 1/2" inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

Chicago fittings shall be pinned.

Attachments on air tools shall be secured by retainer pins and rings.

Do not connect air unless the operating switch is turned off.

Do not disconnect tool until air supply is shut off and air pressure is bled off.

Air power tools **shall not** be hoisted or carried by their hoses.

Hoses are tripping hazards. Route them so as to minimize interference in walkways. Overhead is preferred.

Air power tools shall be tagged and removed from service if any of the following defects are present:

- Air power tools, such as air power grinders, impact wrenches with visible signs of deformities in the body of the tool, improperly functioning actuator, bent or deformed blades, or any signs of obvious damage to the air supply line fittings.

- Hoses must be visually inspected for cracking, signs of aging, worn or damaged connecting fittings, or any other obvious deformities, such as blistering or bulges.

Abrasive Wheels

Abrasive wheels shall be used only on machines provided with safety guards as defined:

- The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard.
- Grinding machines shall be equipped with flanges
- Abrasive wheel machinery guards shall meet the design specifications of the American National Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, ANSI B7.1-1970, which is incorporated by reference as specified in Sec. 1910.6.
- Never exceed the maximum wheel speed RPM. (every when is marked) Check the speed marked on the wheel and compare it to the speed on the grinder.
- When installing the wheel, check for cracks and defects. Ensure mounting flanges are clean and the mounting blotters are used. Do not over tighten the mounting nut.

Metal on Metal Contact and Shard Prevention Policy

Purpose: In August 2014, a team of Campbell Company employees conducted a rapid improvement workshop to analyze injuries caused by shards from striking a hammer to metal in daily work activities.
The results of the workshop led to the following policies and procedures to be followed by all Campbell Company employees when working in a Campbell Company facility or customer jobsite. In June of 2016, a shard related accident occurred causing us to re-evaluate and update the policy.

The following updated policy is effective immediately :

Required PPE when using hard face hammers under 32 oz. or soft face hammers up to 10 lb.

- Safety glasses and/or goggles
- Face shield
- Gloves
- Long sleeves (not rolled up)

Required PPE when using ALL soft-faced hammers 10 lbs. or above

- Company approved protective leather jacket and chaps
- Gloves
- Face shields
- Safety glasses and/or goggles
- Long sleeves (not rolled up)

Required PPE when removing or installing any ground engaging tools (GET) when using any sized hammer and/or pneumatic chisels

- Company approved protective leather jacket and chaps
- Gloves
- Face shields
- Safety glasses and/or goggles
- Long sleeves (not rolled up)

New Rules and Policies (effective June 1st, 2017)

- Whenever possible use manufacturer's approved procedures (using a press, freezer, torch, etc.) rather than a hammer.
- It is the technician's responsibility to inspect and/or dress any and all hammer, punches, chisels, etc. needed for the task.
- Face shields in addition to safety glasses must be worn when grinding, de-burring, buffing, sanding, torching, brazing and steam cleaning.

- All hammers weighing 32oz. and up, must be soft-face hammers. Hammers under 32oz can be the traditional hardened steel type.
- Soft faced hammers 32oz and heavier must meet the Rockwell Hardness C scale (HRC) hardness rating of 30 or lower or a Brinell hardness rating of approximately 286 or lower to be used in our shops and field.
- Campbell Companies will provide all spike mauls, and soft-face hammers weighing 10, 16, and 20 lbs.
- When removing ANY type of wear or ground engaging tool (G.E.T.) with a hammer regardless of size or hardness of hammer the technician will be required to wear a leather jacket, chaps, face shield and gloves. As soon as that portion of the job is complete the technician may remove the additional PPE and resume normal duties.
- Shop technicians will advise/inform/designate their area(s) as high risk for generating metal shards with new high visibility stenciled cones/signage when performing any activity that may generate metal shards (using larger hammers, removing GET, grinding, etc.)
- Never use round bar stock as a temporary support when welding. Use square or rectangle stock only.

Education and Implementation

- To help in the initial adoption of the new policies, Campbell Companies will provide the following:
    - On-line training is available through the LMS and will be required for all new hires.
    - Technicians will be provided (1/yr.) personal goggles, gloves and a face-shield. Replacements will be on an as needed basis, determined by the supervisor.
    - Protective leathers for each department. The required set(s) of protective leathers will be based on a need basis, determined by each department.
    - All Field Service Technicians will be supplied with their own set of protective leathers.

- All company soft-face hammers, leathers, PPE, and appropriate signage will be stored in designated cabinets with shadow boards. Each department/branch location will have their own cabinet. (These cabinets may be the same cabinets used for storage of crane lifting apparatus/tooling.)

Auditing

- The safety department will conduct routine safety audits of company and personal hammers to ensure they meet the required hardness requirements
- Managers and supervisors will ensure technicians are using the required PPE and appropriate hammers.

Ergonomics

1. INTRODUCTION

Ergonomics is the study of people and their interaction with the elements of their job or task including equipment, tools, facilities, processes, and environment. It is a multidisciplinary field of study integrating industrial psychology, engineering, medicine, and design.

In a more practical sense, ergonomics is the science of human comfort. When aspects of the work or workplace exceed the body's capabilities, the result is often a musculoskeletal disorder (MSD). To help avoid MSDs, work demands should not exceed the physical capabilities of the worker. MSDs are also known by several other names including:

- CTDs (cumulative trauma disorders)
- RSIs (repetitive stress or repetitive strain injuries)
- RMIs (repetitive motion injuries)
- Overuse syndrome

The most common, recognizable name for MSDs is cumulative trauma disorders or CTDs. Whatever the name used, these injuries belong to a family or group of wear and tear illnesses that can affect muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels or spinal discs of the body. MSDs do not include slips, trips and falls, cuts, motor vehicle accidents or other similar accidents; although a close look at the reasons for acute injuries often reveals design problems that can be corrected.

2. POLICY

It is the policy of Campbell Companies to provide all employees with a safe and healthy workplace. A proactive ergonomics program is integrated into our company's written safety and health program.

Records documenting the identification, prevention, and control of employee exposure to ergonomic risk factors will be maintained pursuant to all regulations.

This program is a collaborative effort that includes managers, supervisors, and labor. The Ergonomics Program Coordinator is responsible for the program's implementation, management, and recordkeeping requirements.

3. ERGONOMICS PROGRAM

The purpose of an ergonomics program is to apply ergonomic principles to the workplace in an effort to reduce the number and severity of MSDs, thus decreasing workers' compensation claims and, where possible, increase productivity, quality, and efficiency. An ergonomically sound work environment maximizes employee comfort while minimizing the risk of undue physical stress.

A proactive approach focuses on making changes when risks have already been identified, as well as incorporating ergonomics into the design phase of a new facility or process, into purchasing new equipment or tools, and into the contemplation of scheduling changes. Campbell Companies has such a program which includes the following components:

A. Management Leadership. The management of Campbell Companies is committed to the ergonomics process. Management supports the efforts of the Ergonomics Program Coordinator and the Ergonomics Committee by pledging financial and philosophical support for the identification and control of ergonomic risk factors. Management will support an effective MSD reporting system and will respond promptly to reports. Management will regularly communicate with employees about the program.

B. Employee Participation. An essential element to the success of the ergonomics program, employees will be solicited for their input and assistance with identifying ergonomic risk factors, worksite evaluations, development and implementation of controls, and training. Employee participation in the program will occur only during company time.

C. Identification of Problem Jobs. Collecting data that identifies injury and illness trends is called surveillance. Surveillance can be either passive or active. Conducting a records review is an example of passive surveillance, which looks at existing data such as OSHA Logs, workers' compensation claims, trips to the medical facility, and absentee records. Active surveillance uses observations, interviews, surveys, questionnaires, checklists, and formal worksite evaluation tools to identify

specific high-risk activities. Campbell Companies will be using both passive and active surveillance to identify problem jobs.

D. Worksite Evaluations.

(1) Triggers for a worksite evaluation:

(a) When an employee reports an MSD sign or symptom.

(b) Jobs, processes, or work activities where work-related ergonomic risk factors have been identified which may cause or aggravate MSDs.

(c) Any change of jobs, tasks, equipment, tools, processes, scheduling, or changes in work shift hours (for example, going from a traditional 5-day, 8 hour shift to a compressed 4-day, 10 hour shift).

(d) When a safety walk-through or scheduled inspection or survey has uncovered potential MSD hazards.

(2) Work-related risk factors to be considered in the evaluation process include, but are not limited to:

(a) Physical risk factors including force, postures (awkward and static), static loading and sustained exertion, fatigue, repetition, contact stress, extreme temperatures, and vibration.

(b) Administrative issues including job rotation/enlargement, inadequate staffing, excessive overtime, inadequate or lack of rest breaks, stress from deadlines, lack of training, work pace, work methods, and psychosocial issues.

(c) Environmental risk factors including noise, lighting, glare, air quality, temperature, humidity, and personal protective equipment and clothing.

(d) Combination of risk factors such as, but not limited to, highly repetitive, forceful work with no job rotation or precision work done in a dimly lit room.

E. Setting Priorities. Worksite evaluations will be scheduled based upon the following:

(a) Any job, process, operation, or workstation which has contributed to a worker's current MSD;

(b) A job, process, operation, or workstation that has historically contributed to MSDs; and

(c) Specific jobs, processes, operations, or workstations that have the potential to cause MSDs.

F. Worksite Evaluations Methods. Various methods will be used to evaluate problem jobs including:

(1) Walk-through and observations

(2) Employee interviews

(3) Surveys and questionnaires

(4) Checklists

(5) Detailed worksite evaluations

G Control of the Ergonomic Risk Factors. Campbell Companies will take steps to identify ergonomic risk factors and reduce hazards by using a three-tier hierarchy of control (in order of preference):

(1) Engineering controls. The most desirable and reliable means to reduce workplace exposure to potentially harmful effects. This is achieved by focusing on the physical modifications of jobs, workstations, tools, equipment, or processes.

(2) Administrative controls. This means controlling or preventing workplace exposure to potentially harmful effects by implementing administrative changes such as job rotation, job enlargement, rest/recovery breaks, work pace adjustment, redesign of methods, and worker education.

(3) Personal protective equipment (PPE). Although not recognized as an effective means of controlling hazards and do not take the place of engineering or administrative controls, there are acceptable forms of PPE, which include kneepads and anti-vibration gloves.

H. Training. Training is intended to enhance the ability of managers, supervisors, and employees to recognize work-related ergonomic risk factors and to understand and apply appropriate control strategies. Training in the recognition and control of ergonomic risk factors will be given as follows:

(1) To all new employees during orientation.

(2) To all employees assuming a new job assignment.

(3) When new jobs, tasks, tools, equipment, machinery, workstations, or processes are introduced.

(4) When high exposure levels to ergonomic risk factors have been identified.

The minimum for all managers, supervisors, and employees will include the following elements:

(1) An explanation of Campbell Companies ergonomics program and their role in the program;

(2) A list of the exposures which have been associated with the development of MSDs;

(3) A description of MSD signs and symptoms and consequences of injuries caused by work and non work-related risk factors;

(4) An emphasis on the importance of early reporting of MSD signs and symptoms and injuries to management, and;

(5) The methods used by Campbell Companies to minimize work and non work-related risk factors.

Training will be provided in one, or a combination, of the following formats:

(1) Oral presentations

(2) Videos

(3) Distribution of educational literature

(4) Hands-on equipment and work practice demonstrations

Trainers will be experienced in delivering training programs that address all work and non work-related risk factors, and will be familiar with Campbell Companies operations. Training will be provided from one, or a combination, of the sources listed below:

(1) Internally developed resources

(2) The workers' compensation carrier

(3) An outside consultant

All training will be documented:

(1) All employees will be required to sign a training sign-in roster.

I. MSD (Medical) Management and Early Return-to-Work.

Pursuant to the law, Campbell Companies. provides medical care to all employees injured at work. Campbell Companies maintains a good working relationship with our health care provider, Rocky Mountain Care Clinic, IHC WorkMed and local emergency rooms and urgent care facilities. All work-related injuries and illnesses will be referred to those clinics unless the injured employee is making their one time change of physician as allowed by the law. In the event of a work-related injury or illness, the health care provider will:

(1) provide diagnosis and treatment for employees;

(2) determine if reported MSD signs or symptoms are work-related;

(3) comply with Early Return-to-Work program by recommending restricted, modified, or transitional work duties when appropriate;

(4) refer injured employees to other clinical resources for therapy or rehabilitation;

(5) provide Campbell Companies with timely work status reports, and;

(6) develop a positive working relationship with Campbell Companies workers' compensation carrier.

Campbell Companies has an aggressive early Return-to-Work program and will offer return-to-work opportunities to all injured employees in accordance with work restrictions identified by a recognized health care provider.

J. Program Evaluation and Follow-Up. In order to ensure that issues have been addressed and that new problems have not been created, monitoring and evaluation will be conducted on an on-going basis. The methods include use of individual interviews and checklists to reevaluate the job/task to ensure that risks have been reduced, minimized, or eliminated.

4. INDIVIDUAL RESPONSIBILITIES

A. Ergonomics Program Coordinator. The Ergonomics Program Coordinator will report directly to upper management and be responsible for this policy and program. All evaluations, controls, and training will be coordinated under the direction of the Ergonomics Program Coordinator in collaboration with management. The Ergonomics Program Coordinator will monitor the results of the program to determine additional areas of focus as needed.

The Ergonomics Program Coordinator will:

(1) ensure that evaluators performing worksite evaluations and training are properly trained;

(2) ensure that control measures are implemented in a timely manner;

(3) ensure that a system is in place for employees to report MSD signs or symptoms and suspected work-related risk factors to managers and supervisors;

(4) ensure that accurate records are maintained and provide documentation upon request;

(5) schedule manager, supervisor, and employee training and maintain records to include date, name of instructor, topic, and materials used, and;

(6) monitor the program on a quarterly basis and provide an annual review.

(7) follow-up with any ergonomics strategy and/or solutions.

B. Managers. Duties of all managers will include:

(1) accountability for the health and safety of all employees within their departments through the active support of the ergonomics program;

(2) allocating human and/or financial resources;

(3) attending ergonomics training to familiarize themselves with the elements of the program, recognition and control of work-related ergonomic risk factors, MSD signs and symptoms, early reporting requirements and procedures, and medical management;

(4) ensuring that supervisors and employees have received the appropriate training;

(5) ensuring that ergonomics practices and principles are considered when conducting worksite evaluations, and;

(6) ensuring that recommended controls are implemented and/or used appropriately through active follow-up.

C. Supervisors. Duties of all supervisors will include:

(1) attending ergonomics training to familiarize themselves with the elements of the program, recognition and control of work-related ergonomics risk factors, MSD signs and symptoms, early reporting requirements and procedures, and medical management;

(2) ensuring that employees have received the appropriate training;

(3) ensuring that employees are provided with and use the appropriate tools, equipment, parts, and materials in accordance with ergonomic requirements;

(4) ensuring that employees understand the MSD signs and symptoms and early reporting system;

(5) responding promptly to employee reports;

(6) providing appropriate workers' compensation documentation to employees as required by all regulations;

(7) seeking clarification from Human Resources when return-to-work directives from the health care provider are unclear, and;

(8) maintaining clear communication with managers and employees.

D. Employees. Every employee of Campbell Company Machinery Co. is responsible for conducting himself/herself in accordance with this policy and program. All employees will:

(1) when provided, use the appropriate tools, equipment, parts, materials, and procedures in the manner established by managers and supervisors;

(2) ensure that equipment is properly maintained in good condition and when not, report it immediately;

(3) provide feedback to supervisors regarding the effectiveness of design changes, new tools or equipment, or other interventions;

(4) attend ergonomics training as required and apply the knowledge and skills acquired to actual jobs, tasks, processes, and work activities;

(5) report MSD signs or symptoms and work-related MSD hazards to the supervisor as early as possible to facilitate medical treatment and initiate proactive interventions, and;

(6) take responsibility in their personal health and safety.

BLOODBORNE PATHOGENS
EXPOSURE CONTROL PLAN

In accordance with the OSHA Bloodborne Pathogens Standard, 1910.1030, the following exposure control plan has been developed:

A. Purpose

The Bloodborne Pathogens Exposure Program is to reduce occupational exposure to bloodborne pathogens.

B. Exposure Determination

Designated employees that may come into contact with human blood or other potentially infectious materials (OPIM): (list job classifications)

1. First Responders
2. Mechanics assigned to service landfill equipment
3. Janitorial/Facilities Staff
4. All Supervisors and Managers

C. Methods of Compliance

Universal Precautions will be utilized in the handling of all human blood and OPIM's.

D. Engineering Controls

1. Hand sinks are located in all departments and are readily accessible to all employees who have the potential for exposure.
2. Employees will wash their hands and any other exposed skin with soap and hot water immediately or as soon as possible after contact with blood or OPIM, for 15

seconds, in a manner causing friction on both inner and outer surfaces of the hands.

3. Employees will be provided with antiseptic hand cleaner and paper towels when hand washing is not feasible. However, hand washing must still take place as soon as possible after exposure.
4. Eating, drinking, smoking, applying cosmetics or lip balm and handling contact lenses is prohibited in work areas where there is the potential for exposure to bloodborne pathogens.
5. If professional medical attention is required, a local ambulance will be the first choice, a personal car will be the second. If a personal car is taken, impervious material should be used to prevent contamination of the vehicle.
6. New employees or employee being transferred to other sections will receive training about any potential exposure from the section manager.

E. Personal Protective Equipment

All personal protective equipment used at this facility will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or OPIM. The protective equipment will be considered appropriate only if it does not permit blood or OPIM to pass through or reach the employees' clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use.

F. Disposal of Contaminated Items and Communication of Hazard

1. Employees must:
    a. use bleach to disinfect any blood or OPIM.
    b. apply the bleach with single-use gloves and allow to sit for 15 minutes.
    c. place any single-use gloves that have been contaminated in a biohazard garbage bag and cover.
    d. dispose of the bag (Notify the safety department for instruction) .
2. Regulated waste should be placed in appropriate containers, label and dispose of in accordance with applicable state, federal and local laws.

3. Employees will be warned of biohazard bags by labels attached to the disposal bags. Labels used will be orange-red and marked with the work BIOHAZARD or the biohazard symbol.

G. Housekeeping

Maintaining our work areas in a clean and sanitary condition is an important part of *Campbell Companies* Bloodborne Pathogens Compliance Program. Employees must decontaminate working surfaces and equipment with an appropriate disinfectant after completing procedures involving blood or OPIM. All equipment, environmental surfaces and work surfaces shall be decontaminated immediately or as soon as feasible after contamination.

1. Employees must clean and disinfect when surfaces become contaminated and after any spill of blood or OPIM.
2. Employees will use a solution of one part bleach to ten parts water for cleaning and disinfecting.
3. Working surfaces and equipment will be routinely cleaned, disinfected and maintain.
4. Potentially contaminated broken glass will be picked up using mechanical means, such as dust pan and brush, tongs, etc.
5. *Campbell Companies* uses universal precautions for handling of all soiled laundry.
6. Laundry contaminated with blood or OPIM will be handled as little as possible. Employees who handle contaminated laundry will utilize personal protective equipment to prevent contact with blood or OPIM from coming into contact skin or street clothes.
7. Contaminated clothing will remain on the premises, or will be sent directly to a laundry facility for cleaning. Employees will be given the option of reimbursement for the cost of contaminated clothing and the clothing will be disposed.

H. Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-Up

Campbell Companies shall make available within 10 days of possible exposure the Hepatitis B vaccine and vaccination series to all employees who have occupational exposure.

An exposure incident is any contact of blood or OPIM's with non intack skin or mucous membranes. Any employee having an exposure incident shall contact (insert position). All employees who have an exposure incident will be offered a confidential post-exposure evaluation and follow-up in accordance with the OSHA standard. This includes a visit to a physician selected by the employer. The health care professional written opinion will be provided to the employee within 15 days of the evaluation.

I. Training

Training is provided at the time of initial assignment to tasks where occupational exposure may occur, and that it shall be repeated within twelve months of the previous training. Training shall be tailored to the education and language level of the employee, and offered during the normal work shift. The training will be interactive and cover the following:

a. a copy of the standard and an explanation of its contents;

b. a discussion of the epidemiology and symptoms of bloodborne diseases;

c. an explanation of the modes of transmission of bloodborne pathogens;

d. an explanation of the Bloodborne Pathogen Exposure Control Plan (this program), and a method for obtaining a copy;

e. the recognition of tasks that may involve exposure;

f. an explanation of the use and limitations of methods to reduce exposure, for example engineering controls, work practices and personal protective equipment;

g. information on the types, use, location, removal, handling, decontamination, and disposal of PPE;

h. an explanation of the basis of selections of PPE;

i. information on the Hepatitis B vaccination, including efficacy, safety, method of administration, benefits, and that it will be offered free of charge;

j. information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM;

k. an explanation of the procedures to follow if an exposure incident occurs, including the method or reporting and medical follow-up;

l. information on the evaluation and follow-up required after an employee exposure incident;

m. an explanation of the signs, labels, and color-coding systems.

The person conducting the training shall be knowledgeable in the subject matter and training records shall be maintained for 3 years from the date of training.

J. Recordkeeping

Medical records shall be maintained in accordance with OSHA Standards. These records shall be kept confidential, and must be maintained for at least the duration of employment plus 30 years.

Records will be transferred, or a copy provided upon a written and signed request from the employee. Medical records must have written consent of employee before released. The employer shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

Driving/Vehicle Safety Policy

Driving is a privilege, not a right, and that is especially true of company vehicles. In order for an employee of Campbell Companies to have the privilege of driving a company vehicle, employees will be expected to abide by certain rules.

ANY property damage that occurs to a company vehicle, no matter how small or minor, and no matter if it was an employee's fault or that of another party, needs to be reported to the Fleet Manager immediately. Failure to do so could result in discipline, including a written warning, and up to a loss of privilege to use and operate a company vehicle and possibly termination.

As our vehicles are out in the community, they are a reflection of the company. As such, we expect our employees to be safe and courteous at all times. Employees should be well rested, alert, and sober on the road. Drivers should continually search the roadway to be alert to situations requiring quick action. Drivers should stop about every two hours for a break and get out to stretch, take a walk, and get refreshed. On occasion, we receive calls or emails from the community in regards to unsafe and uncourteous behavior they see from a company vehicle. All of these reports are investigated and will be treated as a near miss. This behavior will eventually lead to an incident. If an employee receives a complaint of this nature, it will be followed up on and handled through performance management. In the event that one of these reports is deemed to be factual, the progressive disciplinary policy will be followed and depending on severity may include a loss of privilege to use and operate a company vehicle and possibly termination.

If an employee is involved in an incident it must be reported immediately to your supervisor no matter the severity and the Fleet App used to report all information pictures etc. Campbell Companies reserves the right to pull the employee's personal phone records, including voice, text, data usage, etc., for the time period of the incident. Said employee will work with the company to get these records. Failure to provide these records will be viewed as a failure to comply with this policy and could result in termination.

1) Campbell Company employees must comply fully with all traffic laws, signals, signs etc. as well as company and customer site safety regulations relating to safe vehicle operation. Only authorized and trained employees will be allowed to drive company vehicles or their own on company business and must have the proper license and endorsements for the vehicle or combination of vehicles they will be driving. All drivers

   A) Alcohol and Drug Use – Working or driving under the influence of alcohol, or the illegal use of drugs is prohibited. Zero tolerance.

i) Employees are required to participate in random drug testing or testing based on reasonable suspicion. In addition to illegal substances and alcohol, use of prescription drugs not currently valid or prescribed to the employee is illegal.

B) CARDINAL RULE #2 Driving distracted while operating any and all motorized riding equipment and vehicles is expressly prohibited.

This includes, but is not limited to, composing, or sending messages, texts & emails, reading messages, including texts & emails, manually accessing data, using laptops, taking notes, reading, viewing/taking videos or pictures. Any employee involved in a verified reportable vehicle incident and found to be participating in a distracted driving activity will be terminated. ANY activity that takes your attention away from driving and safe operation of the vehicle is a distraction and is prohibited.

- No voice dictation in any application is allowed.
- Distracted driving activities are not allowed while stopped at a light or in traffic. The vehicle must be pulled over off the roadway in a safe location and the vehicle in park.
- Phone calls are allowed but must be **hands free** via the Bluetooth or infotainment system built into the vehicle.
- All reported cases of distracted driving will be investigated by company representatives and subject to our progressive disciplinary policy, up to employment termination.

C) No company owned vehicle is to be started without the driver and all passengers in safety belts.

D) Each driver must perform a daily safety inspection of the vehicle using Pre and Post inspection in the ELD logging system (required by DOT). Any items needing repair should be repaired as soon as possible. Any malfunctioning items affecting the safe operation of the vehicle should be repaired on a priority basis. Each driver is responsible for the safety, road worthiness and DOT compliance of their vehicle. All loads must be checked and secured properly before any driving is done and checked throughout the trip.

E) Each driver's supervisor will perform an annual inspection of the vehicle; a copy of the annual inspection will be submitted to the fleet department for review.

F) There is NO smoking, vaping, or use of e cigarettes in company vehicles.

2) No company owned vehicle may be operated by an individual who is not eligible and insured by the company's auto insurance policies. All vehicles must be used for their intended purpose within the safety and manufacturer's guidelines.

   A) A current Motor Vehicle Report (MVR) from each prospective employee that will operate a vehicle will be obtained prior to an offer of employment. The MVR must comply with the risk management standards of the Company and not be over 6 months old.

   B) Company risk management standards state that a driver under 25 years of age with more than one minor traffic violation within a three year period will be ineligible to drive a company-owned vehicle. If the driver is over 25 years of age with more than two minor traffic violations within a three year period will be ineligible to drive a company-owned vehicle. Violations such as DUI, reckless driving, driving on a suspended license, etc. could result in suspension of Company driving privileges or termination of employment.

   B) A photo copy of the driver's license of each employee whose job duties require driving a vehicle on behalf of the Company will be maintained in the employee's personnel file. It is the responsibility of the employee to provide H.R. with a photo copy of their driver's license when it is renewed.
   C) All drivers of company vehicles and/or personal vehicles on company business must complete Safe Driver Training prior to driving as well as each year additional courses as assigned by the Safety Department.
      i) DOT Drivers must complete Safe Driver as well as:
         (1) DOT Driver Qualification & Safety Regulations
         (2) DOT HOS and ELD
         (3) DOT Drug and Alcohol Testing
         (4) Comprehensive Safety and Accountability
         (5) Walk Around Inspections
         (6) Cargo Securement

3) Drivers of company owned or personal vehicles will be subject to DOT regulations when towing a trailer or when the gross vehicle weight of the vehicle exceeds 10,000 pounds. Drivers must contact the Safety Department for specific DOT requirements and to set up their personal DOT file before driving and complete all required training. Drivers operating under DOT regulations are required to keep their DOT file

updated with the Safety Department with all necessary DOT information and documentation. Failure to do so will result in the loss of driving privileges.

This section is specific for DOT vehicles, these operations will be observed by all wheeler drivers

A) DOT / CSA BASICS (Measurements by which we operate Motor Vehicles):

i) **Unsafe Driving** – Operation of commercial motor vehicles (CMVs) by drivers in a dangerous or careless manner. Example violations: Speeding, reckless driving, improper lane change, and inattention. (FMCSR Parts 392 and 397)

ii) **Fatigued Driving (Hours-of-Service)** - Operation of CMVs by drivers who are ill, fatigued or non-compliant with the Hours-of-Service (HOS) regulations. This BASIC includes violations of regulations pertaining to logbooks as they relate to HOS requirements and the management of CMV driver fatigue. Example violations: Exceeding HOS, maintaining an incomplete or inaccurate logbook, and operating a CMV while ill or fatigued. (FMCSR Parts 392 and 395).

iii) **Driver Fitness** – Operation of CMVs by drivers who are unfit to operate a CMV due to lack of training, experience, or medical qualifications. Example violations: Failure to have a valid and appropriate commercial driver's license (CDL) and being medically unqualified to operate a CMV. (FMCSR Parts 383 and 391)

iv) **Controlled Substances/Alcohol** – Operation of CMVs by drivers who are impaired due to alcohol, illegal drugs, and misuse of prescription or over-the-counter medications. Example violations: Use or possession of controlled substances/alcohol. (FMCSR Parts 382 and 392)

i) **Vehicle Maintenance** – Failure to properly maintain a CMV. Example Violations: Brakes, lights, and other mechanical defects, and failure to make required repairs. (FMCSR Parts 393 and 396)

ii) **Cargo Related** – Failure to properly prevent shifting loads, spilled or dropped cargo, overloading, and unsafe handling of hazardous materials on a CMV. Example violations: Improper load securement, cargo retention, and hazardous material handling. (FMCSR Parts 392, 393, 397, and HM Violations)

iii) **Crash Indicator** – Histories or patterns of high crash involvement, including frequency and severity. This is based on information from State reported crashes.

2) When purchasing a vehicle, the company will purchase the minimum vehicle possible that will safely get the job done.

3) No company owned vehicle is to be parked with the engine running longer than 5 minutes. The only exceptions will be if shutting off the engine creates a safety hazard or if job requirements prohibit an engine shut down.
4) No company owned vehicle is to exceed posted speed limits.

5) All company owned vehicles will be permanently decaled.

6) Employees who drive company owned vehicles are expected to utilize common sense in planning their day. Every effort should be made to eliminate unnecessary driving, back tracking, etc.

7) The fleet department will purchase all vehicles. No operating or other department is authorized to purchase any vehicles, including transports.

8) Company owned vehicles are the property of the fleet department. Therefore the fleet department will make the final decision regarding vehicle maintenance, repair, purchase and disposal.

9) Repairs and maintenance performed in-house on company owned vehicles:

   A) As a general rule, all repairs will be contracted to specific vehicle repair facilities, including the WPS truck shop.

   B) Repairs contracted outside Wheeler must have prior approval before any work is performed. The repair will be billed directly to the fleet department, and not billed to an internal work order.

   C) No overtime labor will be billed to a company owned vehicle without prior approval of the Fleet Department Manager.

   D) All internal repairs must have a completed service report to be valid.

   E) Any repair estimates over $200 must be pre-approved by the Fleet Department Manager or the bill will be charged to the operating department.

F) Charges that are not part of an actual repair will not be charged to a repair order (gloves, tooling, labor to change trucks, etc.).

10) The company may require the purchase of fuel, tires, repairs, or maintenance for company owned vehicles from specific vendors. If an employee disregards this requirement without a good reason, they may lose the right to drive a company vehicle.

11) The company will place monitors on company owned vehicles to improve dispatching efficiency and to ensure compliance with this policy.

12) Employees who willfully disregard this policy will be denied the privilege of driving a company owned vehicle.

Campbell Companies

Drug & Alcohol Testing Policy

I. General Statement

Campbell Companies (The Company) believes that alcohol, illegal drugs, and prescription medication not taken exactly as prescribed in the workplace are unhealthy and dangerous, not only to the employee involved but to other employees as well. The unlawful use of prescription medications, manufacture, distribution, dispensing, possession, or use of alcohol and illegal drugs is prohibited on the Company premises, in company vehicles, or in customer's vehicles. **CARDINAL RULE #1 The Company has a strict zero tolerance for violations in the drug and alcohol policy.**

The Company believes that a healthy and productive work force, safe working conditions free from the effects of drugs and alcohol, and maintenance of the quality of products produced and services rendered by the Company are important, not only to the Company, but also to the employees and the general public. The abuse of drugs and alcohol creates a variety of workplace problems, including increased injuries on the job, increased absenteeism, increased financial burden on health and benefit programs, increased workplace theft, decreased employee morale, decreased productivity, and a decline in the quality of products and services.

Therefore, the Company hereby adopts this Policy for testing employees and prospective employees as related to drugs and alcohol in the workplace. **This policy supersedes all previous versions as well as all other agencies.**

Recent changes in some state laws have made the use of medical and recreational marijuana legal. However, the Department of Transportation's Drug and Alcohol Testing Regulation – 49 CFR Part 40, at 40.151(e) – does not authorize "medical marijuana" under a state law to be a valid medical explanation for a transportation (DOT regulated) employee's positive drug test result. This includes drivers who do not have CDL's but are required to have a DOT Medical Card for vehicles/combinations of vehicles that are 10,001 lbs. or more up to 26,000 lbs. Those who take substances that disqualify them from obtaining or retaining a valid DOT medical card will not be allowed to drive any DOT regulated vehicles.

Campbell Companies will not allow any DOT company driver to remain in that position if they have tested positive for marijuana regardless of if they have a prescription, and they will be subject to disciplinary action up to termination.

The Company will allow valid medical Marijuana prescriptions issued by a medical doctor in the state of the primary residence of the employee for non DOT-regulated employees. The use

of CBD oil may or may not have THC as an ingredient. The responsibility falls solely on the employee to verify any substances that are taken to be in compliance with this policy. Campbell Companies has determined that all positions are safety sensitive. The use of recreational marijuana is strictly prohibited. The Company has vital interests in ensuring a safe and healthy work environment for our employees, customers, visitors, and vendors. We will maintain a Zero Tolerance attitude and will comply with all the terms and conditions of our Drug & Alcohol policy.

II. Definitions

For the purposes of this policy:

A. "Alcohol" means alcoholic beverages and any other intoxicating substances.
B. "Illicit drugs" and "drugs" used in this policy refer to and include all drugs, paraphernalia, controlled substances, or mood or mind altering inhalants, any of which were not prescribed by a licensed **medical professional** for the person taking or in possession of the drug or substance, which have not been used as prescribed or directed.
C. "Drug Paraphernalia" means objects used to manufacture, compound, convert, produce, process, prepare, test, analyze, pack, store, contain, conceal, and/or to inject, ingest, inhale, or otherwise introduce a drug into the human body.
D. "Employee" means any person in the service of the Company for compensation of any kind.
E. "Prospective employee" means any person who has made application for employment with the Company and to whom the company has offered employment, conditioned upon the results of a drug and alcohol test.
F. "Sample" means, urine, blood, breath, saliva or hair.
G. "Conviction" means a finding of guilt (including a plea of ***nolo contendere***) or imposition of sentence, or both by any judicial body charged with the responsibility to determine violations of the Federal or State criminal statutes.
H. "Criminal Drug Statute" means a Federal or State criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.
I. "MDC" means Medical Drug Consultant, charged with reviewing and interpreting positive test results and determining any alternate medical explanations.
J. "Drug Policy Coordinator" is the Campbell Companies employee specifically designated at each regional location to administer the Drug and Alcohol Testing Policy and through whom any procedures, or disciplinary or rehabilitative action regarding this policy, must be reviewed and approved.
K. "Fit for Duty" means before reporting for work all employees must be physically and mentally fit for duty with the ability to properly and safely perform all essential functions of their jobs and not impose a significant risk of substantial harm to their own or others' health and or safety.

III. Testing

The purpose of random testing is to be a deterrent to all employees for drug or alcohol abuse, ensuring a safe and productive workplace in accordance with Utah Code Ann. 34-38-7. It is the policy of the Company to test employees and prospective employees for the presence of drugs or alcohol, according to the provisions set forth, as a condition of hire or continued employment. Any employee or prospective employee who does not immediately report for

specimen collection in this case immediately means that upon notification of being selected for a drug or alcohol test all the employees' actions must lead to an immediate specimen collection. Failing, forgetting or refusing to take the test will not be eligible for employment, or if employed, **will** be subject to termination. The Company shall consider as negative all confirmed positive drug and alcohol test results with a medically sufficient explanation.

A. The Company shall require the testing of employees and prospective employees, up to and including management on a periodic basis, under the following circumstances and purposes:

1. The Company shall require each employee to read and acknowledgment this policy and agree to abide by its terms as a condition of continued employment.
2. **Pre-Employment Testing** – All prospective employees shall be tested for drug or alcohol usage prior to being placed for employment in addition all employees currently in the 90 day probationary period will be required to submit to at least one additional drug and alcohol test during their probation. All job applicants shall be informed of the policy at the pre-employment interview. A copy of this policy shall be available for review by all job applicants. All prospective employees shall be required, prior to being hired by the Company, to sign the acknowledgement form, agreeing to abide by the terms of this policy. The Company will exclude from employment any job applicant or prospective employees who refuse to abide by the terms of this policy. If the Company hires a prospective employee, he or she must have first successfully passed the above-referenced pre-employment drug and alcohol test, and thereafter he or she will be subject to all the procedures and requirements for drug and alcohol testing as set forth in this policy.
   In addition, any employee who has taken an extended leave of absence of six months or longer must be retested under this section before returning to work.

3. **Reasonable Suspicion (For Cause) Testing** – Supervisors and managers shall be trained to look for behaviors, which may indicate drug or alcohol usage. These behaviors include, but are not limited to: direct observation of drug or alcohol use, drug paraphernalia, abnormal or erratic behavior such as accidents, stealing, or repeated errors on the job, or unsatisfactory time and attendance patterns, any of which are coupled with a specific contemporaneous event that indicates probable drug or alcohol use. An employee will be required to provide a urine sample, as defined below, when such reasonable suspicion arises and at least one supervisor, and the designated Drug Policy Coordinator, concur that a reasonable suspicion of drug or alcohol use exists. The decision to test for drug or alcohol use by and employee is based on specific contemporaneous, physical, behavioral, and/or performance indicators. Once the authorized supervisors have determined that a reasonable suspicion exists, testing is done immediately.
4. **Return to Duty Testing** – If the Company returns to duty an employee after he or she has voluntarily sought rehabilitation for drug or alcohol abuse and has successfully completed rehabilitation, such employee shall be entered into a program of

unannounced drug or alcohol testing. Such employees shall be subject to the program of unannounced drug and alcohol testing for a predetermined period of time at the sole discretion of the management.

5. **Post-Accident Testing** – Post accident testing will be conducted on employees whose performance either contributed to an accident or cannot be completely discounted as contributing to the accident. Such testing will occur as soon as possible, but not later than twelve hours after an accident has occurred. The immediate supervisor and the department manager of such an employee, in association with the Drug Policy Coordinator, shall determine if the performance of that employee either contributed to the accident or cannot be completely discounted as a contributing factor.
6. **Random Testing** – Random testing will be performed periodically on a percentage of all employees, who will be randomly selected and given minimal advance notice. Random testing is done on employees who are under no suspicion, but specifically to satisfy the random criteria. The purpose of random testing is to be a deterrent to all employees for drug or alcohol abuse.

B. Any drug or alcohol testing shall occur during or immediately after the regular work period of current employees, and shall be deemed work time for purposes of compensation and benefits for current employees.

C. Individuals will be tested on company premises or sent an outside clinic or testing licensed to perform such tests.

D. The Company shall pay all costs of testing and transportation associated with a test required by the Company.

E. All sample collection and testing shall be performed according to the following conditions

1. The collection of samples shall be performed under reasonable and sanitary conditions.
2. Samples shall be collected and tested with due regard to the privacy of the individual being tested, and in a manner reasonably calculated to prevent substitutions or interference with the collection or testing of reliable samples.
3. The collection of samples shall be documented, and the documentation procedures shall include labeling of samples, to reasonably preclude the probability of erroneous identification of test results. An opportunity shall be provided for the employee or prospective employee to provide notification of any information that he or she considers to be relevant to the test, including identification of currently or recently used prescriptions or non-prescription drugs, or other relevant information.
4. Sample collection, storage, and transportation to the place of testing shall be performed so as to reasonably preclude the probability of sample contamination or adulteration.
5. Sample testing shall conform to scientifically accepted analytical methods and procedures. Testing shall include verification, or the company will use confirmation of any positive test result by gas chromatography/mass spectrometry before the results of any test as a basis for any action.

6. A test result shall be considered as positive, and an employee shall be considered "under the influence" if the test result equals or exceeds the following measurement criteria:
Standard Campbell Companies Drug screen for new hires, randoms and post-accident.
Test Cutoff Levels (ng/mL) and confirmation Thresholds.

Drug	Screening Thresholds	Confirmation Thresholds
Amphetamines	500 NG/ML	
Amphetamine		250 NG/ML
Methamphetamine		250 NG/ML
MDMA		250 NG/ML
MDA		250 NG/ML
MDEA		250 NG/ML
Barbiturates	200 NG/ML	200 NG/ML
Benzodiazepines	200 NG/ML	200 NG/ML
Cocaine Metabolite	150 NG/ML	100 NG/ML
Opiates	300 NG/ML	
Codeine		300 NG/ML
Morphine		300 NG/ML
Hydrocodone		300 NG/ML
Hydromorphone		300 NG/ML
6MAM	10 NG/ML	10 NG/ML
Oxycodone	100 NG/ML	100 NG/ML
Phencyclidine	25 NG/ML	25 NG/ML
Marijuana Metabolite	50 NG/ML	15 NG/ML
Methadone	300 NG/ML	200 NG/ML
Methaqualone	300 NG/ML	200 NG/ML

Propoxyphene	300 NG/ML	200 NG/ML
Creatinine		
Nitrites		

Any positive result is confirmed by Chromatography with mass spectrometry.

DOT regulated drivers will be tested in compliance with 49 CFR Part 382 and the FMCSA DOT drug testing panel below will be used:

Drug	**Screening Thresholds**	**Confirmation Thresholds**
Marijuana	50 ng/ml	15 ng/ml
Cocaine	150 ng/ml	100 ng/ml
Amphetamines	500 ng/ml	250 ng/ml
Opiates	2000 ng/ml	2000 ng/ml
6-Monoacetylmorphine	10 ng/ml	10 ng/ml
Hydrocodone/Hydromorphone	300 ng/ml	100 ng/ml
Oxycodone/Oxymorphone	100 ng/ml	100 ng/ml
PCP	25 ng/ml	25 ng/ml
MDMA/MDA	500 ng/ml	250 ng/ml

To obtain accurate and reliable test results, the employee or prospective employee must not dilute the urine sample by the ingestion of excess fluids (hereinafter referred to as an "Excess Fluids Sample") before providing the sample. A urine sample shall be considered an Excess Fluids Sample if (1) the test results indicate that the urine sample contains creatinine levels less than .2g/L and a specific gravity of less than 1.003 and (2) there is no medically sufficient explanation for such excess fluids, which explanation must be judged as satisfactory to the MDC in his/her sole but reasonable discretion. If a urine sample provided by a prospective employee of an employee is determined after appropriate testing to be an

Excess Fluids Sample, the prospective employee or employee shall, at the company's discretion, be required to provide another urine sample (the "Second Sample") at a time and under conditions and requirements that are within the sole discretion of the Company. In the event the Second Sample is determined after appropriate testing to be an Excess Fluids Sample, the prospective employee shall not be offered employment with the Company, and the employee shall be subject to "Company Action" as set forth in Section IV, 1-5 of this policy. In addition, when any sample that is deemed by the collector at the time of collection to be temperature out-of-range, or to have been adulterated, the prospective employee shall not be hired; the current employee may be subject to termination.

IV. Company Action

Upon receipt of a verified or confirmed positive drug or alcohol test result, which indicates a violation of this policy, upon the refusal of any employee or prospective employee to provide a sample, or upon the donor supplying a temperature out of range, adulterated or excessive fluid sample, the Company may use that test result or refusal as the basis of disciplinary or rehabilitative actions, which may include, but not limited to, the following:

A. A requirement that the employee enrolls in a company-approved rehabilitation, treatment, or counseling program, which may include additional drug or alcohol testing, as a condition of future employment.

B. Suspension of the employee with or without pay for a period of time.
C. Termination of employment
D. Refusal to hire a prospective employee
E. Any other disciplinary measures in conformance with the Company's practices, policies, or procedures.

V. Confidentiality

A. All information, interviews, reports, statements, memoranda, or test results received by the Company, through this drug and alcohol testing program, are confidential communications and are not to be used or received as evidence, obtained in discovery, or disclosed in any public or private proceeding, except to those having a demonstrated need to know, or in a proceeding related to an action taken by the Company, or as required by law. The information described in paragraph V.A. shall be the property of the Company.

B. The Company is entitled to use a drug or alcohol test result as a basis for action under Section IV.

VI. Miscellaneous Conditions

A. Employees who possess, dispense, manufacture, or distribute alcohol, drugs or drug

paraphernalia on company premises, or on company time, may be subject to disciplinary action, including termination.

B. A copy of the Company's Drug and Alcohol Testing Policy shall be covered in all new hire training and posted on the Company's internal website for reference.
C. This policy applies to management as well as other employees.
D. Any employee convicted of violating a criminal drug statute must notify the HR Dept. Within five days of conviction. The Company may take appropriate disciplinary or rehabilitative actions as set forth in Section IV, as a consequence.

E. Employees wishing assistance with overcoming drug or alcohol abuse may contact their supervisor or the Drug Policy Coordinator for information about counseling and rehabilitation programs.

VII. Workplace Rules

A. An employee or prospective employee shall be considered to be "under the influence" of drugs, alcohol or a controlled substance if the results of the employee's, or prospective employee's, drug or alcohol test equals or exceeds the measurement criteria set forth in Section III.E.6.

B. No employee may possess, use, distribute, or be under the influence of alcohol on the premises, or in the Company's vehicles, or in a customer's vehicle.

C. No employee may manufacture, distribute, dispense, possess, use or be under the influence of drugs or a controlled substance on the Company's premises, in the Company's vehicles, or in a customer's vehicle, except in cases involving a current, prescribed prescription or over-the-counter drugs so long as the employee is fit for duty.

VIII. Search and Seizure

It is the position of Campbell Companies to enforce the policy of no presence of any detectable amount of any illicit drug or alcohol on company premises, parking lots, equipment, toolboxes, or vehicles, while on company business. The Company has the right to search such vehicles or items at the Company's discretion, to expose the concealment of any drugs or alcohol, and to seize any such substances.

IX. Drug and Alcohol Policy Not a Contract

This Drug and Alcohol Testing Policy is the unilateral action of the Company and does not constitute and express of implied contract with any person affected by of subject to the policy. Neither this policy nor any action taken pursuant to this policy assures or guarantees employment or any terms of employment to any person for any period of time. The Company may alter, terminate or make exceptions to this policy at any time, at the Company's sole discretion. This policy does not limit or alter the Company's right to terminate any employee at any time for any reason.

Crane Operation Policy

Purpose: The purpose of this policy is to ensure the safety of all individuals participating in or exposed to the risks involved with crane operations. A crane operation, for the purpose of this section, involves any of the following duties:

- Rigging and securing a load
- Lifting a load
- Moving a load
- Securing the area involved
- Inspecting and maintaining cranes/straps/chains/hooks etc.
- Working in an area exposed to cranes in operation.

1. Crane inspections
    A. There are three forms of crane inspections:
        i. Annual inspections (to be completed by certified crane inspectors)
        ii. Weekly inspections (to be completed by area supervisor)
        iii. Pre-operating inspections (to be completed by employee before use)

    B. Annual inspections will be conducted by a third party. Crane inspectors must be certified. A report on the findings of the inspections, including changes/adjustments that need to be made, will be turned into the area manager for completion.

    C. Weekly inspections are to be completed by the area supervisor designated by the area manager. Following is a copy of the checklist needed to be followed when performing weekly inspections.
        i. Each crane in your designated work area must be inspected.
            1. Check for any obvious physical damage
                a. Loose or missing parts
                b. Exposed wires
                c. Damaged hooks
            2. Test the hoist chain or wire rope
                a. Ensure it is not twisted, kinked or otherwise damaged
                b. Make sure that the wire rope(s) is/are properly seated in the drum and sheave grooves without any slack or overlapping, and without lying across groove ridges.
            3. Operational tests
                a. Operate the crane several feet in each direction it travels
                    i. Listen for any unusual noises
                    ii. Look for jerky movements
                b. Check the control station
                    i. Make sure all buttons are labeled to indicate their function.
                    ii. Operate each button to make sure it functions properly and does not stick.

4. Test out the upper hoist limit switch by slowly raising the block to trip the switch.
5. Lower the hoist block to activate the lower limit switch if the crane is so equipped, leaving at least on turn of rope on the take-up drum.
    a. If the crane has no lower limit switch, stop the block before it contacts the floor, leaving at least two turns of rope on the drum.
6. Check the hook
    a. It must have a safety latch that closes the throat of the hook.
    b. If the latch is bent, spring broken or otherwise damaged, the latch must be replaced before the hook can be used.
    c. If the latch swings freely across the hook throat, or very nearly does, then the hook has been stretched and must be replaced before the hoist can be used.
    d. **NEVER INSTALL A LONGER LATCH ON A STRETCHED HOOK. REPLACE THE HOOK**.

D. Pre-operational inspections are to be performed by anyone before they begin using the crane. These inspections are designed to take only a few minutes, but are vital in ensuring your safety while operating the crane. Following is an inspection list for pre-operation inspections.

i. Before you operate any crane, you must

1. Inspect the Load

a. Know how much the load weighs.
b. Determine the safest way to pick up the load (Make sure the load will not shift once suspended, Center of gravity)

2. Inspect the slings/chains to be used

a. Only use slings or chains if it is in good working condition and
b. Make sure your slings/chains are strong enough to support the load it will be holding. *Check Riggers capacity card.*

3. Inspect the work area

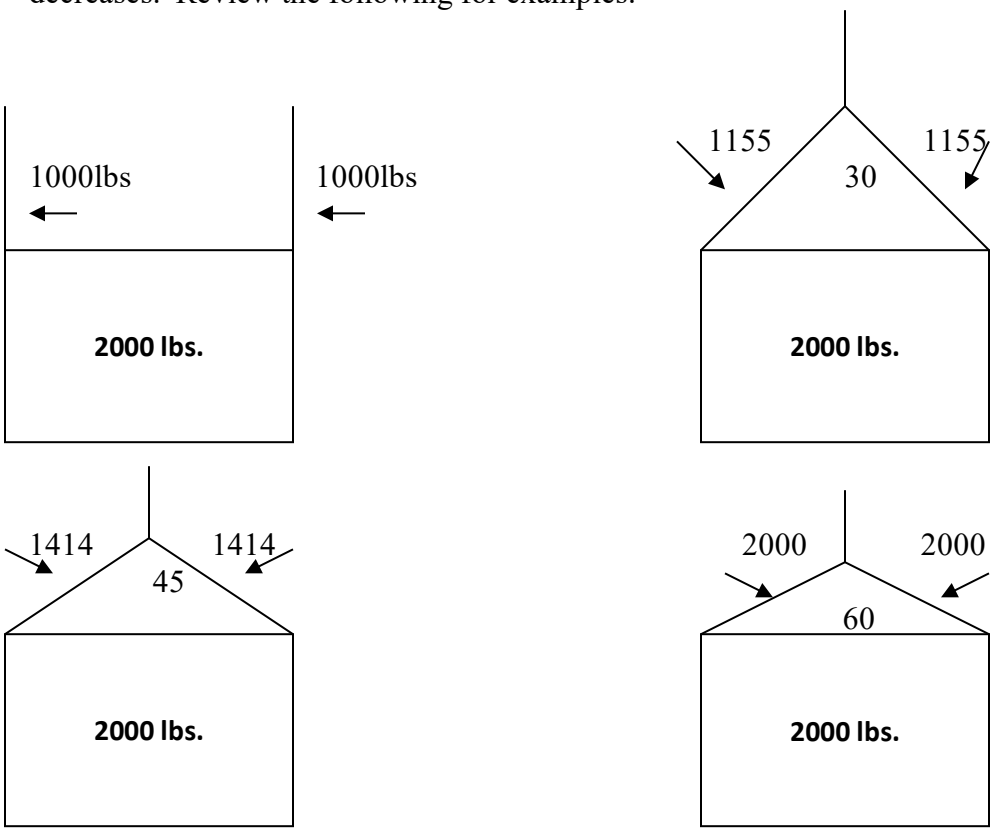
a. Move all obstacles that could get in the way while you are moving the load.
b. Know where you are taking the load, is there a clear path? (are stands, blocks etc. available at your final destination?)
c. **Know the location of other cranes in the bay you are working in. Is that crane being operated? Avoid collisions**
d. Be aware of others in your area, are they aware of you?
e. CARDINAL RULE #4 NEVER PASS UNDER OR WORK UNDER ANY SUSPENDED LOAD

Never be physically under a suspended load.

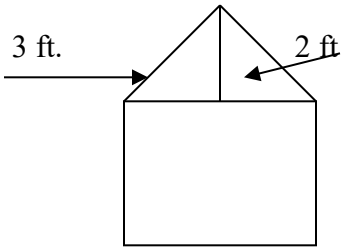
- Never depend solely on hydraulics for support.
- Never work under a machine or component that has not been properly blocked or cribbed.
- Loads supported solely by a crane assembly are not considered properly blocked

2. Operating a crane
    A. When operating a crane,
        i. Make certain you are in control of the load at all times.
        ii. Never leave a load unattended. A load will be considered an unattended load if the operator of the crane has left both the sight and controls of the load at the same time, and the load is still suspended.
            1. Set the load firmly on the ground or stands before leaving.
    B. When transporting the load, position yourself where you will not get caught or pinned by the load in the case of an accident.

Remember, when using a sling/chain at an angle, the amount of force applied to that sling/chain increases with the increase of the angle. And the weight that the sling/chain can support safely, decreases. Review the following for examples.



To determine the safe working load, measure the Height and the Length and divide. Ex.



2/3 = .67

Then multiply this number by rated capacity of the sling or chain being used to find your new weight capacity for that attachment being used in that configuration.

For Example, if your sling was rated at 1000 lbs. and you were using the configuration found above. Your new weight capacity for that sling would be 670 lbs. You would know this by multiplying .67 by 1000. .67 x 1000 = 670

Incident/Accident Reporting & Review Process

The safety and health of all Campbell Company associates, and customers will always be the first consideration in all aspects of our business.

In the unfortunate event that an incident occurs you should ask yourself the following:
Was an employee hurt, injured or did they suffer ill effects as a result?
Was any property including vehicles, equipment and facilities damaged as a result?
Was an unsafe condition, situation or behavior identified that could cause an injury if not corrected? If so, contact the Safety department:

Troy Worthen 801-978-1803 or 801-891-9091

Michele McDermaid 801-978-1802 or 385-227-2047

1. When any incident occurs, regardless of severity, the employee must **immediately** notify his/her supervisor to report that an incident has taken place. This Includes personal injury, property damage, MSHA citations, vehicle accidents and near misses.
2. The supervisor/manager will be required to notify the area first responder for all incidents resulting in any injury or illness no matter how slight. If further medical care is required, the supervisor must accompany the injured employee to the clinic. If the injury is life threatening call 911.
    - The role of the supervisor accompanying the employee is to support the injured associate and to assist the medical care provider with guidance on what the employees job duties are and what restrictions may be put in place.
    - As a standard practice we will always accommodate all restrictions put in place and provide light duty/alternative work.
3. The supervisor/manager will ensure that all tooling, equipment, and PPE involved in the accident will not be disturbed until authorized by the Safety Department. The supervisor is responsible for notifying the Safety Department immediately, their manager and the Fleet manger if a company vehicle is involved.
    - Troy Worthen Safety 801-978-1803 or 801-891-9091
    - Michele McDermaid Safety 801-978-1802 or 385-227-2047
    - Scott Cline Fleet 801-978-1427 or 801-520-4973
4. The associate will complete the incident report and send all available information to the Safety Department. Please include:
    - Report Forms

- Pictures of the scene and all equipment and tooling involved in the incident from different angles
- Drug & Alcohol Testing chain of custody forms
- Any citations or tickets received
- Medical care documentation including work status

5. A First Alert email will be sent from the Safety Department to all Campbell Companies
6. All areas will discuss the incident at the next shift.
7. After the accident review process is completed the Safety Department will send a First Alert Update and/or a Tyfoom video will be created and sent out highlighting corrective measure, any takeaways and changes in processes or policies.

Machine Guarding & Rotating/Moving Tools and Machinery Safety

At Campbell Companies you may work in an area that machinery and equipment such as lathes, mills, drill presses, band saws, belt grinders bench grinders and handheld rotating grinders and sanders are used. This type of equipment presents additional hazards that you need to be aware of. Due to the rotating parts and potential for flying debris, extreme caution and additional safeguards must be used at all times.

- **Guards must be in place for any rotating or moving points and at the point of operation**
- **Guards cannot be removed while the equipment is in operation. No exceptions.**
- **Guards are also required to be installed on any older equipment that did not come with guarding.**
- **Contact your supervisor or a member of the Safety Department for assistance with guarding options and vendors, best practices etc.**

Rotating Equipment Hand Safety:

Do not wear gloves when operating any rotating equipment.

***Gloves may be worn when handling material, components and parts while setting up the job and when grinding to prevent cuts and abrasions and sparks but must be skintight without any gathering or loose material.**

Never put your hands or other body parts near the moving parts of the equipment.

DO NOT wear ANY loose clothing or jewelry within an arm's length of rotating equipment. Long hair and beard/other facial hair must always be tied back and away from the equipment. Shirts must be tucked in and must wear a belt.

Short sleeve uniform shirts are required in the machine shop operations.

- When flying metal shards, hot sparks or debris hazards exists, skintight cut/abrasion/heat resistant sleeves will be worn but must be tight fighting and not be loose or wrap around the thumb or hand.

In other areas coverall and shirt sleeve cuffs must be buttoned and rolled up out of the way securely when operating any other rotating equipment such as handheld grinders, sanders and bench grinders, band saws, buffers etc.

Drill Presses

Drill Press Requirements and Safeguards

All drill presses must be guarded when in use, secured to the floor or bench, and be in good working condition. Guards are required for all moving/rotating parts, including the point of operation where the work is performed, at all power transmission components, and at all other moving parts of the machine. The adjustable debris guard must always be adjusted and in place before attempting any type of cut.

At a minimum, you must always wear safety glasses when operating a drill press. Face shields are recommended for added protection.

Drill Press Safety Procedures:

1. Select round, hex, or triangular shank bits.

2. Secure bits and remove chuck before turning on machine.

3. Work at speed appropriate for bit size and material.

4. Position work to avoid drilling into table.

5. Clamp work to table.

6. Feed bit evenly into work piece.

7. Back out of deep holes.

8. Clear off chips with brush after turning off machine.

Band Type Saws

Band Saw Requirements and Safeguards

All band saws must be secured to the floor or bench and have blade tension control devices with indicators. All moving parts and the point of operation must be guarded. The entire saw blade must be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Adjust the blade guard as close as possible to the table without interfering with movement of the stock. An adjustable secondary debris guard must also be in place. Push sticks or push shoes are recommended to keep fingers and hands away from moving blades.

Safety glasses and a face shield are required whenever cutting.

Band Saw Safety Tips

1. Clear tools, debris, and unnecessary materials off table.

2. Verify location of on/off switch and emergency power disconnect.

3. Check blade for tightness.

4. Adjust the blade guard as close as possible to the table without interfering with movement of

the stock.

5. Adjust the travel guard down so that the blade will travel within the angle or channel.

6. Operate at manufacturer's recommended speed.

7. Cut only those materials recommended for use with the machine.

8. Do not force material into the blade.

9. Unplug power cord before changing blade or servicing.

10. Lock power disconnect in “off” position when changing the blade or servicing the saw.

11. Test the saw after disconnecting power and before beginning service.

Handheld Saws

A handheld saw is portable and requires only the users hands to operate. Handheld saws can be powered or manual. Powered handheld saws have a greater potential to be dangerous.

When using powered saws, the operator is responsible for holding the saw correctly and depressing the pressure control (trigger). The operator then maneuvers the saw according to how the stock is to be cut. Once the task is completed, the operator's finger is removed from the trigger to stop the motor.

- Guards must be in place when in operation
- Always wear eye and face protection
- Use the proper blade for the type of material being cut
- Always use a sharp blade and inspect for wear or defects before each use.
- When using a hand-held saw, the blade should be directed away from others who are in close proximity to the saw.

Bench or Pedestal Grinder

Grinder Requirements and Safeguards

All bench and pedestal grinders must be mounted securely. The tool rest must be adjusted within one-eighth inch of the grinding wheel. Adjustable tongue (spark) guards should be within one-fourth inch from the wheel. Side guards must cover the spindle, nut and flange, and at least 75% of the wheel. Safety glass shields must be clear to allow the user to see the wheel. As with all other machinery, guards are required for all moving parts and at the point of operation. Side guards must cover the spindle, nut, flange, and 75% of the wheel. In addition, each stone or wire brush must have an adjustable, clear debris shield (also known as an eye shield).

Bench and Pedestal Grinder Safety Tips

1. Stand to the side of the grinder when starting the electric motor.

2. Use the correct wheel for the material you are grinding, polishing, or buffing.

3. Adjust the tool rest as close as possible to the grinding wheel without touching it. It must have a gap of between one-sixteenth and one-eighth inches.

4. Keep the face of the abrasive wheel square. Use a dressing tool to remove some of the abrasive compound to square the wheel.

5. Never grind on the side of the wheel. This can cause the wheel to shatter.

6. Avoid overheating metal when grinding. If the metal becomes too hot and is allowed to cool too slowly, it may become soft. If it is cooled too quickly (quenched), it may become brittle.

7. Dip the metal into the water pot attached to the bottom of the grinder as you shape it to keep it from getting too hot.

8. If your grinder does not have a water pot, place a container of water near the grinder to cool the piece you are grinding.

Handheld/Portable Grinders

Handheld portable grinders, with their own set of unique hazards, can be dangerous and can cause serious injuries or even start a fire causing property damage.

1. Keep all tools in good condition with regular maintenance.
2. Use the right tool and wheel for the job.
3. Inspect the tool and wheel before work begins and do not use if damaged.
4. Use the correct PPE for the task and always wear eye protection.
5. Operate tools according to manufacturers' instructions.
6. Disconnect tools when not in use, before servicing or cleaning and when changing accessories.

Select the right tool and wheel for the job:

- **There must be a guard in place. Guards cannot be removed to get into tight or small spaces.**
- **The trigger should be the "dead man" type rather than the switch type that will not disengage if dropped or let go of.**

Do not grind or cut material for which the wheel is not designed.

The wheel label should indicate the purpose or material. If the disc label is missing, do not use it. RPM indicates the maximum operating speed. Make sure the wheel you are using has an RPM rating that meets or exceeds the rating of the tool. The wheel should not be thicker or larger in diameter than what the grinder recommends. The arbor (the hole in the center of the wheel) needs to be the correct size for the tool.

Inspect the portable grinder, the wheel that will be used, and the guard before operation.

Ensure the grinder is unplugged before inspecting, adjusting, removing, or replacing parts. Inspect the tool for parts that may be broken, worn out, loose or missing. Look over the power cord to make sure it isn't

damaged and check to ensure the ground pin on the plug hasn't been broken or removed. If the tool, cord, or plug are found to be damaged or defective then tag and remove from service immediately.

- **The cord must NOT be "homemade" or spliced together.** Check the wheel for cracks, chips, flaws, or deterioration and replace if necessary. Wet or damp wheels should be discarded.

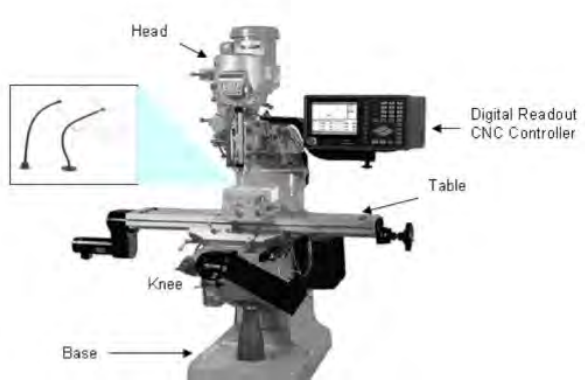
OSHA requires that wheels be closely inspected visually and ring-tested before mounting them on the portable grinder. This simple test checks for cracks or defects that might otherwise go unnoticed.

1. Place the wheel on a non-metallic object like a wooden dowel or your finger.
2. Lightly tap the wheel with a non-metallic object approximately 3/4" from the edge of the wheel and listen to the sound that is produced. A ting sound is what you want to hear to indicate the wheel is good.
3. Rotate the wheel 1/4 turn and repeat the test for a total of 4 times per wheel.
4. If you hear a thud sound during the ring test it means the wheel is defective and should not be used.

Wear PPE that provides the best protection for the task.

- **A Face shield** and safety glasses are required when **grinding, buffing, sanding, deburring, cutting, torching**.
- Don't wear loose clothing or jewelry and make sure long hair is secured.
- Consider wearing hearing protection appropriate for the sound level and duration of the task. (85 decibels or higher)
- Gloves may be required if the task produces sharp particles, or the materials become hot.

Milling Machines



Milling Machine Requirements and Safeguards

Milling machines must be in good condition and properly lubricated and guarded at all times. As with all other machinery, guards are required for all moving parts and the point of operation. An adjustable chip shield must be in place whenever cutting is taking place. Operators must always wear safety glasses. Never wear loose clothing, jewelry including rings or other articles that dangle and could catch on the cutter.

Milling Machine Safety Tips

1. Keep area around machine clear of debris; wipe up any oil on the floor.

2. Clean and dry the table before setting up.

3. Secure any holding devices (e.g., vise, angle plate, dividing head, or tail stock).

4. Select the right kind of cutter for the job.

5. Check to make sure that the machine is turned off before inserting the cutter.

6. Make sure that the arbor, cutter, and collars are clean before mounting them in the spindle.

7. Handle sharp cutters with a rag.

8. Securely set the work piece in the vise with a rubber hammer or mallet.

9. Be certain that the holding device clears the arbor, and the over-arm supports.

10. Select the proper cutting speed, rpm, and rate of feed for the job.

11. Disengage the control handles when using automatic feeds.

12. Keep hands away from the revolving cutter at all times.

13. Never touch the metal chips with your fingers.

* Clear chips away from the cutter with a brush. After cutting is finished, vacuum or sweep debris rather than blowing with an air hose.

14. Release any automatic feeds after the job is complete.

15. Clean and wipe the machine when finished

Lathes

- **Guards must be in place at the point of operation before the machine is started**
- Gloves may be worn only when handling sharp pieces of material, and not near operating machinery.
    - <u>They should always be removed before any machine is started</u>.
- Long hair should be tied back. Also, loose clothing should not be worn.
- When removing centers, be sure to handle them safely, as the point may be sharp.
- Use the correct knockout bar to remove the headstock center and/or sleeve.
- When installing or removing heavy chucks or workpieces, be sure to get help to lift them so you won't injure yourself.
- When installing and removing chucks, face plates, and centers, always be sure all mating surfaces are clean and free from burrs.

- Do not use power when installing or removing chucks or faceplates on threaded spindle noses.
- If a chuck or faceplate should become jammed on the spindle nose, contact your supervisor about removing it properly.