

## **SAFETY STANDARDS HANDBOOK CONTENTS**

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Alpheus Communications' primary business is offering commercial broadband fiber optics communication and data center services. The OSHA standard, 29 CFR 1910.268 Telecommunications, is the primary regulation that affects the operations of the business. Other standards, such as those contained in 29 CFR.1926, Occupation Safety and Health Standards for the Construction Industry, shall also apply as appropriate.

## **SAFETY STANDARD 1 FIBER OPTICS SAFETY**

### **Construction and Maintenance**

1. All personnel working on Alpheus' locations will use all required safety devices, safeguards, and personal protective equipment.
2. Each work crew must possess and maintain a first aid kit, which will be inspected once per month.

### **Pothole Digging**

1. Pothole procedures using manual shovel digging, water jet and vacuum equipment, or other nondestructive methods will be required when locating natural gas, electric, and water utilities and prior to using a backhoe to dig out a bore head.
2. High-pressure water jet systems used for pothole digging shall not be operated at pressures above 2500 psi.

### **Work along Railroads**

1. All personnel working on railroad Rights of Way shall have completed a course and be certified in railroad safety.
2. When on a railroad Right of Way, employees shall not cross tracks by going underneath cars or by crossing over between cars that are coupled together.

### **Excavations**

1. All excavations shall be in compliance with the Excavating Safety Standard in this Handbook (see Excavating and Trenching Standard).
2. All excavations will be backfilled, covered with steel plates or barricaded when work is not in progress or upon completion of operations and prior to personnel leaving the job site at the end of the shift.
3. No work will be performed over or above a person who is in an excavation.

### **General Manhole Safety**

1. When covers of manholes or vaults are removed, the opening will be promptly guarded by a railing, manhole ring, and other suitable barrier to prevent an accidental fall through the opening and to protect employees from foreign objects entering the manhole.
2. Smoking in a manhole or sewer line is prohibited.
3. Operation of an internal combustion engine in a manhole or sewer line is prohibited.
4. Ladders will be used to enter and exit manholes exceeding 4 feet in depth.
5. Work vehicles will be parked upstream in the same traffic lane as the manhole.
6. A minimum of two employees with basic first aid training shall be present when work is being done in manholes:
  - That are jointly occupied by an electrical, gas, or sewer utility
  - Where unusual traffic patterns create safety hazards
  - Where worksites are subject to unusual water hazards

### **Atmospheric Testing and Forced Air**

Before an employee enters a manhole, the following steps shall be taken:

1. All internal atmospheres will be tested for oxygen deficiency (first) and combustible gases.
2. All manholes and underground vaults will be ventilated and otherwise made safe before entry.
3. An adequate continuous supply of air shall be provided while work is performed in manholes and underground vaults.

#### **Telecommunication Center Safety**

1. Adequate lighting shall be provided in the telecom centers to the level necessary to perform required work.
2. Each telecom center shall have a first aid kit that is readily accessible to employees and which will be maintained and inspected once per month.
3. Authorized employees shall be provided with specific training, tools and appropriate personal protective equipment necessary to perform work on electrical systems that are encountered in the workplace.

#### **Fiber Handling Safety**

1. Safety glasses with rigid side shields shall be worn when connecting and splicing fiber cables.
2. Employees should avoid getting fiber scraps on the floor or on themselves to prevent fibers from becoming embedded in skin or eyes. Each work area must be thoroughly cleaned after working with bare fiber.
3. Employees shall properly dispose of glass chips and shards in a designated safety disposal container. Fiber shards shall not be left in the work area or be disposed of with common trash.
4. Employees should not touch their eyes while working with bare optical fiber until their hands have been thoroughly washed and cleaned.
5. Fiber work areas must be kept free from food and beverages to prevent ingestion of fiber particles.
6. Employees working with bare fiber should wash their hands prior to eating, drinking or smoking.
7. Smoking is not allowed while working with fiber optic systems. Smoking shall only take place in designated smoking areas.
8. All flammable and combustible materials shall be kept safely away from curing lamps and ovens.
9. Employees shall not look directly at UV curing lamps. When possible, use lamps that have UV filters to reduce skin and eye exposure.

#### **Battery Safety**

1. Safety glasses with side shields, acid resistant gloves and aprons shall be worn when measuring storage battery specific gravity or when handling electrolyte.
2. Eyewash or shower stations for quick drenching and flushing of the eyes and body shall be provided within 25 feet of the battery area, unless batteries are the enclosed type with explosion proof vents, in which case sealed eye rinse bottles and neutralizing packs may be substituted for eyewash/shower stations.
3. Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.
4. An emergency kit will be located near the door of each battery room and will have as a minimum; protective gloves, goggles, apron, bottled eyewash solution, and acid neutralizing agent.

#### **Laser Safety**

The laser-emitted light (energy) used in fiber optic communications systems is in the infrared range and is not visible to the human eye. Because it is undetected and is not painful to view, the eyelids do not naturally react and close to protect the retina. Unfortunately, the retina can be damaged by the infrared wavelengths that are used in fiber optics systems. All Optical Fiber Communication Systems (OFCS) are designed to operate with the beam totally enclosed within the fiber-optic and associated equipment and, therefore, the lasers are considered as Class I in normal operation. Class I is the lowest hazard level for lasers, and is considered inherently safe in normal operations.

1. Never look directly into any optical port.
2. Unused ports should be capped to prevent incidental exposure to laser emission.
3. Before using an inspection microscope to visually inspect a connector, use a power meter to confirm that the fiber is not transmitting optical energy.
4. Looking into the end of any broken or severed optical fiber or cable shall be avoided.
5. The end of any broken, severed, or unterminated optical fiber shall not be viewed with unfiltered optical instruments (microscopes, telescopes, etc.).
6. Equipment containing lasers must be properly labeled with laser class and manufacturer's warnings.
7. Laser protective eyewear will be required during service operations where there is a potential for exposure. Laser protective eyewear will be selected to protect against the laser's maximum incident beam irradiance.
8. Only authorized personnel shall be permitted to perform service on light wave transmission systems if access to laser emission is required.
9. Only authorized trained personnel shall be permitted to use the laser test equipment (Optical Loss Test Set, Optical Time Domain Reflectometer, etc.) during installation and /or service.
10. Only authorized personnel shall be allowed in areas where lasers are present.
11. If during a splicing operation (either installation or service) it is required that the ends of the fiber be examined with an eye-loupe for a satisfactory cut, only an eye-loupe containing an appropriate filter shall be used. If a fusion splicer is used, the appropriate operating safety procedures shall be rigidly adhered to.

## **SAFETY STANDARD 2 VEHICLE SAFETY**

Drivers who operate company vehicles, regularly utilize rental vehicles or regularly use their own vehicles on behalf of the company are responsible for the safe operation of that vehicle. Drivers are also required to successfully complete and apply the principles of a safe driving course while operating a company vehicle. The Travelers' Driver's Training Program or equivalent will be completed at time of employment and every three years thereafter.

Additionally these rules are to be followed:

- Employees must sign the Safe Driving Contract annually and return it to their supervisor.
- Drivers must maintain a valid driver's license at all times and must report any changes in status immediately to their supervisor.
- All drivers must possess and maintain a valid driver's license when operating a vehicle on company business and shall report any change in status to their supervisor immediately. All drivers must have required certificate of insurance or proof of insurance before driving any vehicle on company business. Adequate auto liability limits including adequate limits for Uninsured and Underinsured Motorists are required for employee owned and operated vehicles.

- Drivers must safely operate vehicles in accordance with all applicable laws, including DOT requirements.
- Drivers shall comply with all federal, state and local laws and regulations concerning the use of mobile technology devices including cell phones ([www.ghsa.org](http://www.ghsa.org)). Sending or reading text messages or emails, dialing cellular phones, talking on hand held cell phones, viewing television, videos or DVD and inputting data into laptop computers, personal digital assistants or navigation systems is prohibited while driving. Where permitted, drivers shall exercise caution when using hands free cell phones or communication radios while driving vehicles on company business. Drivers shall determine a safe and appropriate time to make or answer calls and all calls of this nature should be brief.
- Vehicles are to be maintained in a safe operating condition and any unsafe condition should be corrected or reported immediately to their supervisor.
- Vehicles are not to be left running while unattended.
- Drivers of vehicles must ensure that all occupants wear seat belts.
- All incidents involving a vehicle operated on company business, no matter how minor must be reported immediately to their supervisor.
- The use, possession and distribution of illegal drugs, deadly weapons or unauthorized explosives while on Company premises, in Company vehicles, or rental/personal vehicles while on Company business is prohibited. Likewise, the consumption of alcoholic beverages or driving under the influence while operating company vehicles or rental/personal vehicles while on company business is prohibited.
- Drivers must conduct a 360° walk-around before getting into their vehicle.
- Vehicles will be driven with daylight running lights or headlights on at all times.
- When parking, “pull through” or back into the space, unless doing so would create a greater hazard.
- Drivers are to obey all rules and laws while driving on roads and in facilities.
- Drivers must perform a tire maintenance check, which includes ensuring tires have proper tread depth and tires are properly inflated.
- Barriers should be used to ensure loads do not move within the cab of vehicle.
- Persons fueling vehicles shall dissipate any potential static charge by touching the vehicle metallic body prior to handling the fueling nozzle. During the fueling process, it is recommended to not reenter the vehicle.

### **Motor Vehicle Records**

- At the time of hire, and a change in driver license status, drivers who operate company vehicles, regularly use rental vehicles or regularly use their own vehicles on behalf of the company will have their Motor Vehicle Record (MVR) examined for driving performance. Drivers with poor driving records will be subject to further review by Human Resources. Reviews can result in disciplinary action up to and including termination.

### **Load Ratings for Company Vehicles**

- Follow the vehicle and tire manufacturers’ recommended tire load and pressure ratings listed in the chart found on the passenger doorpost. If vehicle does not have the ratings located on the post, refer to the vehicle information booklet.

Vehicles and their loads should not exceed the GVWR of the vehicle and/or the manufacturing ratings for the vehicle tires. Ensure vehicle tire rating meets or exceeds vehicle manufacturer’s recommendations.

### **SAFETY STANDARD 3 ENERGY ISOLATION (LOCK OUT /TAG OUT)**

This standard establishes minimum requirements for controlling energy sources during the service, repair or maintenance of machinery and equipment. These requirements will aid in preventing injury to personnel, damage to property, and damage to the environment due to the unexpected energizing, start-up, or release of stored energy. Sources of stored energy include electrical, mechanical, hydraulic, pneumatic or stored pressure.

**Note:** Supervisors are responsible for performing and documenting an annual audit of the ENERGY ISOLATION (“LOCK OUT /TAG OUT” or “LO/TO”) program at each Operating Area.

### **Procedures**

Detailed written LO/TO procedures have been developed and are available at each Operating Area. It is the responsibility of Operations personnel to develop and maintain all site-specific LO/TO procedures.

### **Locks and Tags**

Locks, tags and other LO/TO hardware required by this standard must be available to workers at all times. Contractors must provide their own locks, tags and other hardware when performing LO/TO. LO/TO locks and tags must not be used for any purpose other than LO/TO. Tags must be legible and include the condition or reason for tagging, the date, the equipment being tagged, the name of person applying tag, and DANGER, DO NOT OPERATE or similar warning.

### **Preparation and Installation**

1. Survey the work area and equipment to identify isolation points and the proper methods of energy isolation.
2. Shut down or turn off the machine, equipment or process.
3. Render safe by isolating and relieving any stored hazardous energy by closing valves or switchgear, opening vents, disconnecting, restraining or blinding. Reviewing the most current flow or equipment diagram will assist in locating all isolation points. Blinds shall be installed when the release of combustible or toxic liquids, vapors or gases into the work area cannot be controlled.
4. **LOCK** out the energy source using locks, blinds, chaining of valves, double block and bleed systems, disconnecting pipe, or by other means, that prevents the release of energy.

**Note:** Where common vent systems are involved, the work area or equipment must be isolated by approved means (see Item 4 above) that prevent an energy release from another unit or device from entering the work area/equipment being locked out of service. Check valves are NOT an approved means of isolation from an energy source.

**Note:** Double block and bleed is a method used on process piping where block valves are closed, locked, tagged, and the bleed valve located between the two block valves is locked open to vent to atmosphere. A closed valve with a body bleed does not constitute a double block and bleed.

5. **TAG** the lockout device with a DANGER, DO NOT OPERATE or other appropriate tag designed to conform to the Company’s LO/TO program.

**Note:** Each person doing the work, including contract personnel, shall install an identifiable lock and/or tag. There must be only one key for a lock or set of locks and that one key will be held by the locking employee(s) until completion. The “group/crew lockout” method is acceptable only where it is defined in a written document.

6. **CLEAR** the area of personnel and tools before attempting to relieve any stored energy remaining in the equipment prior to beginning the work.
7. **TRY** to energize (start and stop) the equipment before beginning the work. Verify that start/jog switches will activate equipment prior to being de-energized.

### **Restoration and Removal**

Only the person(s) originally attaching the lock and tag is authorized to remove the lock and tag. When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the management or their designee. To ensure safe removal of the device, the following action must be completed prior to the removal:

1. Verification by the employer that the authorized employee who applied the device is not at the facility.
2. Make reasonable efforts to contact the authorized employee to inform them that their lockout or tagout device is to be removed.
3. Ensure the authorized employee has this knowledge before they resume work at the facility.

Only qualified personnel are allowed to start up machinery or equipment after it has been determined that no personnel are exposed to any hazards and all safety checks have been completed.

**Note:** In the event that shift or personnel changes occur during maintenance or repair activities, the designated Alpheus site supervisor must take necessary steps to maintain the continuity of the LO/TO protection. This shall ensure the transfer of lockout/tagout devices between authorized employees is correctly accomplished.

### **Restoring Equipment to Service**

1. Reinstall all guards.
2. Return all electrical wiring to conform to electrical code requirements.
3. Remove all blind flanges or skillets and properly connect piping.
4. Remove tools, materials, and other nonessential items.
5. Inspect and verify that all machine or equipment components are operationally intact.
6. Notify all employees in the area that LO/TO devices are ready to be removed.
7. Ensure all employees are safely positioned or removed from the area.
8. Remove each lock and tag from each energy-isolating device.

### **Working on Energized Electrical Equipment**

If work requires that the electrical equipment be worked on while energized (i.e. bumping motors, maintenance testing, etc.) the following procedures apply:

1. Notify all personnel of the activities being performed, the location, equipment affected, and duration of work.
2. Tag equipment with “DANGER, DO NOT OPERATE” tag.
3. Refer to the Electrical Safety section of the handbook for more details regarding electrical work.
4. Notify all affected personnel when work is completed.

### **Blinding**

Blinds shall be installed when the release of combustible or toxic liquids, vapors or gases into the work area cannot be controlled during maintenance or construction.

### **Procedure**

1. A full-rated blind should be installed with three (3) considerations:
  - Ratings** – Consult ANSI blind rating charts;
  - Location** – Will the blind effectively isolate? Is it accessible?; and
  - Size** – Does the blind match line size?

2. A **Blind List** shall be prepared where blinds are utilized to ensure proper installation and removal. The list should include the location of blinds, date installed, date removed and appropriate signatures.
3. Blinds shall be tagged for identification.
4. All blinds shall be removed when work is complete.
5. During hydro-test applications (line, vessel, drum, or etc.) only a rated blind flange shall be used.
6. A skillet blind of either a vendor manufactured, shop built, or on-site manufactured may be used **ONLY** if a tagged vent to atmosphere is located between a closed and locked block valve and the blind.

### **Venting Skillets**

Venting Skillets are thin and non-pressure retaining, and they provide a temporary vent to a line that does not have a vent between the isolation valve and the area of work. Venting skillets **cannot** be considered “pressure retaining” under any engineering standard and thus **cannot** be considered as an ASME/ANSI “Blind” or “Blank.” Venting skillets may be used only to redirect gas when there may be a potential for very slight gas flow passing through a fully closed and locked valve after all valve sealant measures have been applied. Venting skillets may only be used if approved by operations.

Venting skillets are used to vent potential gas leakage when:

- There is not a spool piece to remove,
- Flanges cannot be spread apart enough to install a rated blind,
- The upstream valve used for isolation of the gas has either no leaks or very minimal leaks, and
- There is not a vent valve in the de-pressured pipe or valve body upstream to allow potential leaking gas to escape to atmosphere.

### **SAFETY STANDARD 4 CONFINED SPACE ENTRY**

This standard establishes procedures necessary for preparation, entry and restoration of a confined space to be entered by personnel. Examples of confined spaces may include, but are not limited to tanks, vessels, excavations, underground meter boxes, pig launchers/receivers, engine crankcases, and turbine packages.

#### **Definitions:**

**Attendant** – an individual who is stationed outside a permit-required confined space. An attendant is required whenever a physical hazard cannot be eliminated and/or a hazardous atmosphere cannot be controlled through ventilation. The purpose of an attendant is to monitor and be in communication with the entrant in the event that a hazard appears.

**Note:** The attendant may also perform the responsibilities of an entry supervisor.

#### **Confined space-**

- Is large enough and so configured that personnel can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit.
- Is not designed for continuous personnel occupancy.

**Entrant** – an individual who is authorized by the company to enter a confined space.

**Entry** – begins when any part of the entrant’s body breaks the plane of the entryway. Opening hydrocarbon vessels/tanks for inspections only, without breaking this plane, will not require the completion of the Confined Space Entry Permit.



**Entry Supervisor** – an individual responsible for determining if acceptable entry conditions are present, for authorizing entry, overseeing entry operations and for terminating entry into permit-required confined space.

**Non Permit-Required Confined Space** – a permit-required confined space may be reclassified to a non-permit confined space whenever the hazardous atmosphere can be controlled and serious physical hazard can be eliminated.

**Permit-Required Confined Space**- a space that meets the definition above, but also contains a hazardous atmosphere, which cannot be controlled, or a serious physical hazard, which cannot be eliminated. An Attendant must be present, and the Attendant, Entry Supervisor and Entrant(s) must complete and all must sign the Confined Space Entry Permit.

**The Duration of the Permit is:**

- Crew Change, end of shift, or end of job, whichever occurs first.
- Emergency conditions will cancel the permit; other significant changes may also cancel the permit.

**Reclassification of a Permit Required Confined Space**

Reasonable efforts should be made to reclassify a Permit Required Confined Space to a Non-Permit Required Confined Space. Written documentation of the reclassification process must be completed and the documentation must be communicated to all entrants and posted at the space. Documentation must be retained for one year.

1. Each space must be inspected and evaluated by a qualified individual prior to entry and periodically thereafter to ensure that conditions remain consistent with the initial assessment. An evaluation will include atmospheric condition tests and a thorough physical hazard assessment. All hazards are to be eliminated or controlled.
2. The confined space or vessel must be properly isolated using one more of the following methods: blinding, line disconnection, double block and bleed, in addition to proper locking and tagging. A list shall be prepared of the blinds installed (Energy Isolation (LO/TO) Safety Standard), line disconnects, locked valves, and/or opened vents.
3. Atmospheric tests for oxygen, explosive and toxic gases and vapors shall be performed and recorded immediately prior to entry; after work breaks or interruptions in the work procedure; and at periodic intervals to ensure the continuing safety of workers in the space. At a minimum, the following tested atmospheric conditions shall be within these acceptable levels:
  - Oxygen = 19.5% -23.5%
  - Test for oxygen first
  - Lower Explosive Limit, LEL = <10%
  - Suspected toxic air contaminants (i.e. Hydrogen Sulfide, Carbon Monoxide, etc.)

**Note:** Some procedures will dictate more stringent O<sub>2</sub> and LEL levels.

4. All practical effort shall be made to reduce the flammable limits to as near zero as possible in the Confined Space. If tests indicate a hazardous atmosphere, efforts to control the condition are to be made utilizing forced air ventilation. If explosive gases or vapors are present, an explosion-proof blower or air mover is required. If other conditions exist, the space must be purged, steam washed, etc. to sufficiently free the vessel of possible contaminants.

**Notes:** Forced air may present a hazard if iron sulfide is present (see Fire Safety).

5. Forced air ventilation and other equipment must be properly grounded or bonded to prevent static sparks. Lighting equipment must be explosion proof and have a ground fault circuit interrupter (GFCI).
6. Where flammable or combustible gases or liquids are present, all sources of ignition shall be eliminated or controlled. If required, a Hot -Work Permit shall be completed in accordance

with the Hot Work Permit Safety Standard. Fire extinguisher(s) and other fire fighting equipment shall be available.

7. If the confined space atmospheric tests are not within the acceptable limits or the physical hazards cannot be eliminated, the space is classified as a PERMIT- REQUIRED CONFINED SPACE and must have an Attendant and an Entry Supervisor trained to perform these duties. The attendant shall be stationed outside the space and remain in direct communication with the worker(s) inside. The Entry Supervisor may serve as the Attendant provided they are trained to do so. In addition to the previous steps 1 through 6, the following shall be completed.
8. Entry into a permit-required confined space requires the notification of your Division Safety Representative.
9. Signs and/or barricades shall be posted outside confined spaces to notify unauthorized personnel when entry is in progress. Personnel entering the area shall read and adhere to all precautions, signs and permits. If they are not assigned to assist with the entry, they are not to enter the area. If the vessel or confined space is left unattended, access to the space is to be secured.
10. A minimum of two individuals must be present when entering a vessel.
11. Lifelines and harnesses are required when entering a permit required confined space. Rescue equipment such as air supply systems and hoists may also be required.
12. A trained rescue team is to be available when personnel are required to enter a permit required confined space.
13. First aid and CPR training is required for rescue personnel and recommended for Attendants/Entry Supervisors. First aid supplies are to be readily available on site.
14. Emergency personnel must be notified of permit required confined space entries. They must be trained in how to rescue people at your facility.

### **Entry**

1. Authorized personnel may make entry after preparation requirements have been met and a Confined Space Entry Permit has been signed, issued and posted at the space. Authorized personnel designated to enter the space must review the provisions of the permit and sign the permit.
2. The confined space atmosphere shall be RETESTED as often as necessary during entry to ensure a safe work environment. Consideration shall be given to continuous monitoring when working in confined spaces.

### **Restoration**

When work is complete and the confined space is ready to be returned to service, the permit shall be used as a checklist for proper restoration of the space. Additional items to consider include:

- Are all personnel out of the space?
- Are all blinds removed, vents closed, etc. per the list compiled during preparation?
- Has all equipment and tools removed?
- Are all entryways and flanges closed and sealed?
- Have start-up procedures been reviewed?

### **Program Review**

Permit-required confined space entry permits must be reviewed periodically, no less than annually, and maintained at the site office for one year.

## **SAFETY STANDARD 5 EXCAVATING AND TRENCHING**

This standard applies to all excavations intended for worker occupancy. All excavations 5-ft (1.5 m) and greater require cave-in protection. In addition to the following steps, a Confined Space Entry Permit may be required for personnel entry into such excavations that have the potential for hazards (i.e. atmospheres, cave-ins), which cannot be controlled, or serious safety hazards, which cannot be eliminated.

### **Definitions:**

**Benching:** A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels, or steps, usually with vertical or near-vertical surfaces between levels.

**Competent Person:** One who is formally trained and capable of identifying existing and predictable hazards, soil types in the surroundings, or working conditions that are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

**Excavation:** Any man-made hole, cavity, trench or depression in an earth surface formed by earth removal.

**Shoring/Trench Box:** A structure such as a metal, hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

**Sloping:** A method of protecting employees from cave-ins by excavating to form sides of an excavation that is inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure and application of surface loads.

**Soil Classification System:** Denotes classification used by the National Bureau of Standards.

### **Classifications include:**

1. Stable Rock- Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.
2. Type A Soil- A cohesive soil with an unconfined compressive strength of 1.5 tons/ft (tsf) (14.6 Mg/m<sup>2</sup>) or greater. Examples: clay, silty clay, sandy clay, clay loam, silty clay loam, sandy clay loam, caliche and hardpan. (If a soil is fissured, subject to vibration or previously disturbed, it is considered Type B or C.)
3. Type B Soil- A less cohesive soil with an unconfined compressive strength greater than 0.5 tsf (4.9 Mg/m<sup>2</sup>) but less than 1.5 tsf (14.6 Mg/m<sup>2</sup>). Examples: angular gravel or crushed rock, silt, silt loam, sandy loam, and dry rock that is not stable.
4. Type C Soil- The least cohesive soil with an unconfined compressive strength of 0.5 tsf (4.9 Mg/m<sup>2</sup>) or less. Examples: gravel, sand, loamy sand, submerged soils or freely seeping soils, and submerged rock that is not stable.

**Note:** The thumb penetration test can be performed by a Competent Person to estimate the unconfined compressive strength of cohesive soils.

- Type A soils can be readily indented by thumb only with great effort.
- Type B soils can be penetrated by thumb approximately halfway.
- Type C soils can be easily penetrated several inches by the thumb and can be molded by light finger pressure.

### **Procedure**

1. Each excavation must have someone formally trained and designated as a competent person; that person will conduct and document daily inspections (more often if needed).
2. No individual(s) will be permitted to enter an excavation unless it is deemed necessary.

3. Before opening any excavation, complete the Excavation Checklist; determine the location of utility installations, such as sewer, telephone, fuel, power lines, water lines, pipelines or any other underground installations. Utilize the “one-call” or appropriate notification system to contact utility companies and other affected parties. Advise of proposed work prior to the start of actual excavation. Municipalities or other regulatory agencies may require permits.
4. Excavations, 4-ft deep or greater, involving entry require ladders, steps or ramps located so that no more than 25-ft (7.6m) of lateral travel is required to exit the excavation.
5. The walls of the excavation are to be protected from caving-in by one of the following:
  - Shoring
  - Sloping or benching (Note: Benching is only allowed on A and B Soil.)
  - Trench boxes (shields)
  - Some other equivalent means approved by a registered professional engineer from the state where the excavation is located.

**Note:** Sloping or benching for excavations greater than 20-ft (6 m) deep must be designed by a Registered Professional Engineer.

**Note:** If the excavation requires a person’s head to be below ground level, appropriate precautions shall be in place to address hazardous atmospheres. If the excavation is less than 5-ft. in depth and personnel entry is necessary, cave-in protection may be required if the soil exhibits unstable soil characteristics.

Soil or Rock Type	Horizontal/ Vertical	Maximum Allowable Slopes for Excavations Less than 20-ft (6 m)
Stable Rock	→	(90 degrees)
Type A	3/4:1	(53 degrees)
Type B	1:1	(45 degrees)
Type C	1 ½:1	(34 degrees)

6. Excavations of any depth can be considered confined spaces. In excavations greater than 4-ft (1.2 m) in depth, the atmospheres in the excavation shall be tested before employees enter when hazardous substances are stored nearby or can reasonably be anticipated.
7. Excavated soil or other material or equipment that could pose a hazard by falling or rolling into an excavation shall be stored and/or retained at least 2-ft (0.61 m) from the edge of the excavation. If excavations endanger the stability of adjacent structures (building, walls, or other structures), support systems shall be provided.
8. A competent person shall make and document daily inspections of excavations prior to the start of the work shift and re-inspections if conditions change. This person has authority/responsibility to modify shoring/trenching or work methods as necessary to provide greater safety. If evidence of possible cave-ins or slides (such as accumulating water or seepage) is apparent, all work in the excavation shall cease until necessary precautions have been taken to safeguard employees.
9. Guardrails or barricades should be used to mark the limits of the work area. Anytime a trench is left unattended in populated areas, use guardrails or barricades sufficient in size to prevent unintentional entry.

10. An employee shall not be directly underneath the operating equipment while it is being lowered or raised in an excavation or trench when there is a potential for operating equipment to come in contact with the worker.
11. Employees exposed to public vehicular traffic must wear reflective/high visibility warning vests.

### **SAFETY STANDARD 6 ELECTRICAL SAFETY**

This section contains basic electrical safety practices for work on or near exposed energized circuits (at or above 50 volts AC/DC), power generation, transmission, distribution, and transfer equipment. Consult the Alpheus Electrical Safety Policy and Program for further information and requirements.

#### **Definitions**

**Fully Qualified Person-**A Fully Qualified Person is approved to work on energized or non-energized electrical equipment. A Fully Qualified Person designation may be obtained by completing electrical education/ experience or, electrical certification or equivalent (such as journeyman electrician, etc.), and an approved electrical safety course

**Qualified Person-** One familiar with the construction and operation of the equipment and the electrical hazards involved. Alpheus has two levels of designation that are considered an electrical Qualified Person..

**Task Qualified Person-**A Task Qualified Person has completed electrical safety training and is qualified to complete specific tasks on specific energized or non-energized electrical equipment but is not fully qualified to work on all energized or non-energized equipment. It is possible for an individual to be considered a Qualified Person for a specific task, but an Unqualified Person for other tasks.

**Note:** An employee who is undergoing on-the-job training, and has completed an electrical safety course is allowed to perform electrical tasks while under the direct supervision of a Qualified Person.

**Unqualified Person-**An Unqualified Person is a person who has only completed a basic electrical safety course. A basic electrical safety course must provide the knowledge for employees to use electrical equipment and tools safely. An Unqualified Person shall not test live electrical circuits or repair damaged electrical tools and equipment.

#### **Electrical Safety Rules**

1. Only Qualified employees and employees in training under the direct supervision by a Qualified Person shall repair, install, troubleshoot or work on electrical circuits. All electrical circuits should be de-energized whenever possible before an employee works on or near the electrical equipment.
2. All employees are to be trained in the hazards of working on or near electric equipment.
3. All electrical circuits are to be considered energized, until the absence of electrical current is verified by a Qualified Person.
4. An approved LO/TO program must be utilized to isolate the energy source.
5. Work performed on live circuits will be done as the exception and not as a rule. Work on a live circuit will only be done as a last resort when LO/TO makes the circuit unsafe or testing and troubleshooting of the circuit requires it to be energized.
6. Use suitable protective equipment and tools rated to the appropriate voltage and flash hazard, including, but not limited to lineman's gloves, mats, blankets, arc rated face shields and flash suits to provide insulation from energized circuits and arc blast.

7. Un-insulated metallic items, such as rings, neck chains, watches, eyewear etc. are not to be worn while working on or near exposed energized electrical circuits.
8. Do not render electrical interlocks inoperative by removal, modification or destruction. Electrical interlock may be defeated only temporarily during the performance of a specific task, and must be returned to working condition immediately thereafter.
9. Blown fuses shall be replaced with equal type and interrupting rating using the appropriate fuse tool and personal protective equipment.
10. Use non-conductive ladders when working on or near electrical equipment or conductors. The use of metal ladders and stools is prohibited.
11. Electrical equipment and extension cords are to be inspected prior to each use and immediately removed from service if found to be unsafe.
12. Portable cord and plug-connected equipment shall be inspected prior to each use and shall be equipped with a cord, which has ground fault protection or is double insulated.
13. Extension cord sets are not permanent installations.
14. Space heaters are to be turned off if left unattended. In some work areas portable heaters with visible elements are prohibited (see Office safety Checklist).
15. Secure extension cords to prevent tripping hazard.
16. GFCIs are to be tested prior to use.
17. An assured grounding program shall be established and followed if GFCI devices are not used.
18. Safety grounds shall be used when working on electrical circuits and equipment.

#### **Power Lines**

1. All power lines shall be considered energized. When work is being performed near energized overhead power lines, the power company shall be contacted to determine the voltage present.
2. When power lines are de-energized, they shall have safety grounds attached.
3. No part of a crane, boom, mast, gin poles or machinery shall be permitted within 10-ft (3 m) of the power lines rated 50 kV or below. For energized lines rated above 50 kV, the minimum distance between power lines and the boom, mast, crane or its load, must be 10-ft (3 m) plus one half inch (1cm) for each kV over 50kV.
4. Switch and transformer yards must be fenced (and grounded) and posted with “Entry by Authorized Personnel Only” and “Danger High Voltage.”

#### **SAFETY STANDARD 7 PERSONAL PROTECTIVE EQUIPMENT**

The following rules identify required personal protective equipment for all personnel, including contractors. Loaner equipment may be provided for visitors at the location. Call in advance to verify.

#### **General Guidelines**

- Local management is responsible for conducting personal protective equipment hazard assessments for work exposures in their area of responsibility. This assessment will be used as the foundation for determining personal protective equipment needs.
- Personal protective equipment must meet standards established by recognized governmental and/or industry groups.
- Personnel handling chemicals or other agents must wear proper eye or face protection, respiratory protection, gloves and aprons.
- Employees are responsible for the proper use, cleaning and storage of their assigned PPE.

- Additional eye/face protection such as goggles and/or face shields must be worn during grinding, welding, drilling, scraping or any operation where foreign objects may enter the eye.

### **Head Protection**

- Approved hard hats are to be worn in field operations and other designated areas.
- Newly acquired hardhats shall meet the minimum requirements set forth by ANSI Z89.1 (Type 1 or 2 – Class E Hardhats).

### **Eye Protection**

- Approved safety eyewear with side impact protection meeting ANSI Z87.1 is to be worn in field operations and other designated areas. ANSI approved eyewear is to be worn over non-ANSI approved eyewear or any not having side impact protection.
- Filter lenses are required for arc welding or cutting.

### **Hearing Protection**

- Hearing protection must be worn in designated high noise areas (85 dBA or higher).
- If the high noise area is determined to be 110 dBA or higher, dual protection (inserts and muffs) shall be worn.

### **Hand Protection**

- Personnel must wear hand protection appropriate for the task when performing work that may cause injury to the hands.
- Electrical gloves are to be provided when working with voltages greater than 50 VAC and replaced or tested every six months by an approved independent laboratory. Wearers of the linemen's gloves are to test for holes or leaks before each use. Defective or damaged gloves must not be used. Any glove found defective or damaged should be destroyed and replaced immediately.

### **Foot Protection**

- Safety shoes are required when location management, PPE hazards assessments or historical data/experience dictates the need.
- Management may dictate the need for special requirements (i.e. defined heel, leather, canvas, etc.)
- Safety shoes must meet ANSI Z41.1 (compression and impact ratings).

### **Flame Resistant Clothing**

- Flame resistant clothing is required when location management, PPE hazards assessments or historical data/experience dictates the need.
- Flame resistant clothing shall meet ASTM D6413 standard (<2.0 second after flame and no more than 6.0 inches char length) and should be worn as the outermost garment.
- The use of synthetic clothing in conjunction with flame resistant garment is strongly discouraged.
- Only manufacturer's approved modifications shall be made to garments.

## **SAFETY STANDARD 8 FALL PROTECTION**

This section contains the basic fall protection safety practices for Alpheus employees when performing work tasks at greater than 6-ft (1.8 m) from the walking/working surface. Employees

shall be trained in Fall Protection and Fall Arrest Systems. Fall Arrest Systems are to be used when other fall protection systems are impractical or insufficient (i.e. scaffold work requiring top and mid-rails to be removed).

**Note:** Fixed moveable platforms used on bridge cranes also require fall protection.

### **Fall Arrest Systems**

Fall Arrest Systems shall include:

- A full-body harness with D-ring in the middle of the back situated in-between the shoulders,
- An appropriate anchorage attachment capable of supporting at least 5,000 lbs,
- Connectors

**Note:** The system may include a lanyard deceleration device, lifeline, or suitable combination of these.

### **General Requirements:**

1. Employees shall not work alone when using personal fall arrest equipment.
2. A rescue plan shall be developed and communicated to all effected persons prior to using fall arrest systems. Rescue equipment must be readily available at the work site.
3. Before donning the fall arrest system the employee shall inspect fall arrest components prior to each use and remove from service and destroy damaged components or equipment that have been subjected to a fall.
4. The use of waist belt for fall arrest and non-locking snap hooks is prohibited.
5. Fall Arrest equipment is not to be used to hoist equipment/materials.
6. If an employee is working in an area where he/she could fall into and be submerged in water, an approved type 1 or type 2 lifejacket or buoyant work vest must be worn and at least one life saving skiff or boat should be immediately available.
7. In order to obtain 100% fall protection while performing elevated work, it may be necessary to use two lanyards to allow the employee to remain anchored to one point while moving to the next point.

### **Ladder Safety – General**

1. All portable ladders will be a minimum of Class 1A rated for 300lb. (136.1 kg.)
2. When climbing up or down any ladder, face the ladder and maintain a 3-point contact with hands free of materials.
3. All ladders must be inspected before each use. Damaged ladders should be removed from service until repaired.
4. If work from a ladder is long term in nature or requires heavy physical exertion, other methods such as scaffolds or personnel lifts should be used.
5. All metal ladders should be labeled “NOT FOR ELECTRICAL USE.”

### **Non-Self-Supporting Ladder (Portable Extension Ladder)**

1. Ladder shall be positioned at a safe angle, which is typically a 4:1 vertical to horizontal ratio. Recommended safe angle for portable extension ladders.
2. The ladder shall be secured at the point of support to prevent movement. To accomplish this, a person will stabilize the ladder at the bottom while the climber climbs and secures the ladder at the top. If a ladder cannot be secured at the top, outriggers or another employee must stabilize the ladder while it is in use.
3. A portable extension ladder must extend 3 feet (1 m) past the point of support when accessing a working surface (i.e. roof).



### **Self-Supporting Ladders (Portable Step Ladders)**

1. A stepladder must be used with the spreader bars in the locked down position; never as a straight ladder.
2. Never stand on the top two steps of a self-supporting ladder.

### **Personnel Lifts**

1. Manufacturer's written operating instructions are to be attached to the personnel lift.
2. A second person shall be used as a "spotter" if working in a limited work area.
3. Only equipment that has been load rated and designed for personnel lifting by manufacturer or by recognized engineering practices shall be utilized. Workers utilizing personnel lifts must wear a safety harness with lanyard attached to the manufacturers approved anchor point on the lift.
4. Personnel must work with both feet securely on the floor of the platform. Working with feet on a rail, or working from a ladder placed in the personnel lift is prohibited.
5. All entrance gates or chains must be in their fully closed position before moving the lift.

### **Scaffolds**

1. A "Competent Person" must oversee scaffolding erection, modifications, disassembly, and daily inspections.
2. Scaffolds and scaffold components shall be capable of supporting, without failure, at least 4 times the maximum intended load.
3. Footing shall be sound, rigid, and capable of carrying the maximum intended load. Unstable objects such as bricks, blocks or boxes must not be used.
4. Scaffold with heights greater than 4 times the base may not be erected without prior notification of the Health & Safety Department.
5. When working under a scaffold, overhead protection is required.
6. Working from portable ladders on the scaffold platform is prohibited.
7. Each employee on a scaffold more than 6-ft (1.8m) above a lower level shall be protected from falling to that lower level. Protective systems can include guardrails or personal fall arrest systems.
8. On scaffolding 10 feet and greater or where there is a danger of tools, materials or equipment falling from a scaffold to lower levels, toe boards shall be erected along the platform to protect persons below.
9. A secured ladder must be used to access scaffolding if no built-in ladders are present.
10. When reinforcing the scaffold, construction must be in accordance with the manufacturer's standards.

## **SAFETY STANDARD 9 FIRE PROTECTION**

### **Fire Response Procedures**

In the event of fire, the following procedures must be used:

- The first two minutes of a fire are the most critical for extinguishment. Assess the situation and SUMMON HELP; Initiate Emergency Shut Down (ESD) and /or active alarm systems as appropriate, and evacuate and secure the area. Notification must be made to site supervision after the fire is contained. Only trained personnel are qualified to operate fire extinguishers and equipment. Never fight a fire if you do not know the cause or source or if it is beyond the initial stage;
- Give direction to third party fire fighting agencies.

### **General Fire Fighting Procedures**

1. Locate the fire fighting equipment.  
**Note:** When activating a cartridge type extinguisher, point the fill cap away from yourself or others.
2. With the wind to your back, approach the fire and discharge the extinguisher at the base of the fire, sweeping the blaze as you advance.
3. After the fire is extinguished or if you are unable to extinguish, back away facing the fire. Never turn your back on a fire. Stand-by to ensure that an extinguished fire remains extinguished and there are no flashbacks.
4. After discharging or using a fire extinguisher, return it for maintenance and recharging.

### **Fire Prevention Guidelines**

1. Class A fire materials (paper, wood, rags, etc.) should be minimized in process areas.
2. Oily rags are to be stored in approved areas in covered metal containers.
3. Buildings in which flammable or combustible liquids are being used must be well ventilated at all times. Ridge vents must remain open at all times.
4. Report and repair all process leaks immediately
5. Perform required atmospheric monitoring prior to and during operations that involve opening hydrocarbon vessels or tanks.
6. Use “snoop” suds or intrinsically safe gas detection meters when testing for gas leaks on connections. Never use an open flame.
7. Use only approved cleaning solvents.
8. Transport and store fuels (i.e. gasoline, etc.) only in approved safety cans with the contents clearly labeled and within the “Materials of Trade” limitations specified in 49 CFR Part 173.6. Never place gasoline containers inside passenger compartments. When transporting flammable and combustive liquids, secure the container to prevent spills or container movement.
9. When transferring flammable or combustible liquids from barrel, tank, line or vessel to another container, the source container and the receiving container must be electrically bonded to prevent ignition due to static electricity.
10. Approved containers must be used for collection of liquid samples.
11. All flammable liquid containers or aerosol can are to be properly stored.
12. Flammable liquids are not to be stored in the compressor buildings unless stored in an approved flammable cabinet.
13. All fire protection equipment and systems are to be inspected and documented as per regulatory standards.

### **Iron Sulfide**

Iron sulfide is a material capable of spontaneous combustion when exposed to air. Often combustion occurs on the ground or inside structures such a columns, vessels, tanks, piping or exchangers. Iron sulfide fires commonly occur during shutdowns, or construction activities, when equipment and piping are opened for inspection or maintenance. Iron sulfide can ignite nearby flammable hydrocarbon-air mixtures.

Deposits of iron sulfide are formed from corrosion products and may accumulate throughout a structure. Before carrying out any maintenance, construction, or similar work activities a safe work procedure, addressing iron sulfide, shall be developed, communicated and implemented where iron sulfide is likely to occur. This procedure may be addressed as part of the Hazard Analysis. Procedures shall address:

- Removal of the combustibles (if possible); and,
- Removal, neutralization or wetting of iron sulfide deposits; or,
- Removal of oxygen, so that fire is unsustainable (i.e. nitrogen purging).

Streaming, water washing, blinding, and chemical injections (i.e. acid cleaning, chelating solutions, or oxidizing chemicals) are all control methods which should be evaluated prior to the start of work. Scraps and debris (such as filters) collected from structures must be kept wet, or otherwise controlled, to prevent fire during transportation.

**Note:** Introducing fresh air into a vessel/piping via air-movers may enhance the combustion process, thus igniting flammable hydrocarbons. An evaluation for iron sulfide shall be made and a Hazard Analysis should be completed prior to the start of maintenance, construction or similar activities in areas known to contain iron sulfide.

### **SAFETY STANDARD 10 TRAVEL SAFETY**

Alpheus employees should plan for safety during travel, giving consideration to vehicle safety, hotel safety, and avoidance of locations/situations where they have a potential to become a victim of crime. It is recommended that a copy of your travel itinerary be left with your home office or supervisor. If itinerary changes, immediately notify your home office or supervisor.

#### **Hotel Safety**

1. Enter hotel through main entrance, if possible.
2. Keep room key with you at all times. Avoid displaying your room number.
3. When retiring for the night, leave room key on top of nightstand for immediate access.
4. When possible, avoid ground floor rooms to prevent entry through the window.
5. Inspect your room upon entering, and then secure the door.
6. Verify hotel personnel with the front desk before allowing entrance into your room.
7. Notify hotel management of suspicious activity.
8. When leaving your room, turn the radio or television to a moderate volume.

#### **Hotel Fire Survival Checklist**

1. Familiarize yourself with the hotel fire plan.
2. Locate the two closest exits to your room and make sure they are clear and operable.
3. If the exit is not at the end of the hall, count the number of doors between your room and the exit.
4. Check window for alternative escape route.
5. Test doors for heat before opening and always take room key.
6. Proceed to nearest stairway exit (not elevators).
7. Crawl 8-12 inches above the floor to avoid smoke inhalation.

#### **If trapped in your room:**

- Notify front desk that you are still in your room.
- Fill bathtub with water to use for fire fighting and the soaking of towels/bedding. Use wet towels and sheets to seal cracks.
- Make a tent to provide fresh air if possible.
- Open window to vent the room.

#### **International Travel Precautions:**

1. Avoid conversations with strangers concerning your company, position, or purpose of trip.
2. Do not write your company name in passports.
3. Carry an extra passport copy and photo in luggage.
4. Pack any controversial material, business cards or records in luggage.
5. Travel on US based airlines where possible.
6. Do not make reservations in the company name for international travel.
7. Always keep your possessions in your sight.

8. Dress inconspicuously.

## **SAFETY STANDARD 11 PERSONAL SAFETY & SECURITY**

### **Personal Security Precautions**

1. Do not attempt to fight if robbed at gunpoint or knifepoint.
2. If you suspect you are being followed, quickly proceed to a public area.
3. Avoid carrying keys with attached identification and markings.
4. Limit the number of credit cards and amount of cash you carry.
5. Obtain necessary foreign currency or traveler's checks and avoid displaying currency.
6. Carry coins for public telephones.
7. Avoid appearing flashy and flamboyant (i.e. wearing expensive jewelry).
8. Refrain from taking short cuts through unknown areas, alleys, etc.
9. Know your associates and inform others when going out.

### **Vehicle Security Awareness**

1. Check the vehicles safety equipment frequently and try to always keep the gas tank at the minimum one fourth to one half full.
2. Park in well-lit areas, or the safest area possible.
3. Always drive with the windows up and the doors locked when in a suspicious or unsafe area.
4. Have keys ready when approaching the vehicle.
5. Check around the vehicle before approaching it.
6. Look inside the vehicle before entering it.
7. Use good judgment when stopping for stalled cars.

### **Workplace Security**

1. Keep items of value secure in a locked file or desk drawer.
2. Wear badges or identification cards so that they are visible, when required by location management.
3. Periodically review all security and emergency operation and evacuation procedures.
4. If you receive any threat, obscene or harassing telephone calls contact your supervisor, Human Resources, or Security.

### **Ensure that:**

- Visitor passes are used.
- Personnel properly greet and/or challenge strangers.
- Gates remain locked, or otherwise secure, when not in use.
- Alarm systems are tested and working according to specifications.
- Specific lock-up procedures are followed.
- Someone is responsible for checking all doors and windows to make sure they are closed and locked every night.
- Surveillance cameras are active for all exits and entrances.

## **SAFETY STANDARD 12 OFFICE SAFETY**

In addition to other procedures/precautions in this manual, the following safety precautions should be followed when working in an office environment. There may be other site-specific procedures or requirements, so check with the Health & Safety Department or Facility Operations.

### **Precautions**

1. Each employee shall be familiar with the location and use of the fire alarm pull station nearest to his/her workstation and how to activate the emergency notification system.
2. Each employee must become familiar with the appropriate evacuation route for his/her workstation. Evacuation routes for each floor and building area are clearly marked in prominent locations.
3. During fire alarms, Fire Wardens should make last-minute searches of their areas to ensure all personnel are evacuated. Help the Fire Wardens by clearing the area quickly, and aid them if they request assistance. **If a Fire Warden requests you to leave an area, do so!**
4. During evacuations, **DO NOT USE ELEVATORS!** Use the stairwells, following the nearest exit signs and evacuation drawings. Check closed doors for temperature and smoke before opening.
5. Keep all passageways, entryways, aisles, storerooms, service rooms, and work areas clean, orderly, sanitary and well maintained, with no obstructions.
6. Aisles and hallways shall provide unobstructed movement and immediate access for fire protection personnel and equipment.
7. Keep flammable or combustible material and residue in a building or operating area to a minimum. Store in metal safety cans or storage cabinets that meet Underwriter's Laboratories, Inc., or Factory Mutual approval.
8. Safely stack material/boxes (limited in height) without blocking sprinkler heads, fire exits, fire extinguishers, electrical control panels, etc.
9. File drawers and desk drawers shall not be left open. Do not overload top drawers to prevent cabinets from tipping over.

Personnel working in an office environment are not immune to occupational injuries or illnesses. The following checklist should be utilized in all company office areas on a periodic basis.

## OFFICE SAFETY CHECKLIST

### INDIVIDUAL WORKSTATIONS

- Sufficient ventilation (HVAC vents not covered) \_\_\_\_\_
- Open floor space \_\_\_\_\_

### WALKING SURFACES

- Aisles correctly established and clear (30 inches/76cm recommended) \_\_\_\_\_
- Void of tripping hazards (carpets/cords secure) \_\_\_\_\_
- Mats available to prevent slipping hazards \_\_\_\_\_
- Floors dry (not slippery) \_\_\_\_\_
- Wet areas appropriately marked \_\_\_\_\_

### HALLS, RAMPS, LIGHTING

- Adequate lighting, suitable for work \_\_\_\_\_
- Ramps have non-slip surface \_\_\_\_\_
- Handrails installed and in good condition \_\_\_\_\_
- Halls kept clear of equipment and supplies \_\_\_\_\_

### STORAGE AREAS

- Shelves and file drawers safely loaded \_\_\_\_\_
- All file drawers closed \_\_\_\_\_
- Heavy items stored at waist level \_\_\_\_\_

- Heavy storage shelves/files secured to wall \_\_\_\_\_
- No storage within 2-ft (0.6m) of ceiling \_\_\_\_\_
- Noisy equipment isolated \_\_\_\_\_
- Boxes stored with flaps folded inside \_\_\_\_\_

**OFFICE EQUIPMENT**

- Chairs (springs, casters, hydraulics) in good condition \_\_\_\_\_
- Fans guarded, secure from falling or tipping \_\_\_\_\_
- Paper cutter guard functional and blade in the down position and latched when not in use \_\_\_\_\_
- Safety steps/ladders available \_\_\_\_\_
- Chemicals properly labeled/stored \_\_\_\_\_
- Paper supplies and material safely stacked \_\_\_\_\_
- Scissors, sharp tools stored correctly \_\_\_\_\_
- Safety box cutters available and used \_\_\_\_\_
- Mechanical equipment properly guarded \_\_\_\_\_

**ELECTRICAL HAZARDS**

- Machines and equipment grounded or double insulated \_\_\_\_\_
- Proper multi-outlet devices used/circuits properly loaded \_\_\_\_\_
- Only UL approved extension cords are allowed- maximum length 10-ft (3 m) \_\_\_\_\_
- Power cords, plugs, and wall outlets free from defects \_\_\_\_\_
- Electrical switch panels clear ( 30 inches/1 m) \_\_\_\_\_
- Wiring properly routed \_\_\_\_\_
- Portable heaters with visible elements are prohibited \_\_\_\_\_
- Any electrically operated device (i.e. coffee pot, space heater, etc.) turned off if left unattended overnight \_\_\_\_\_
- Have tip shut-off switch \_\_\_\_\_
- GFCIs must be used per local electrical codes \_\_\_\_\_

**FIRE PREVENTION**

- Fire extinguishers properly identified/installed \_\_\_\_\_
- Fire extinguishers placed a safe distance from possible ignition sources \_\_\_\_\_
- Fire extinguisher tagged with current inspection and hydrostatic test \_\_\_\_\_
- Fire extinguisher and fire hose unobstructed \_\_\_\_\_
- Fire escapes and routes clear and well marked fire doors closed \_\_\_\_\_
- Exits properly marked \_\_\_\_\_
- Sprinkler heads unobstructed \_\_\_\_\_
- Excess paper and trash removed \_\_\_\_\_
- Flammable and combustible materials stored in UL or FM approved containers or cabinets \_\_\_\_\_
- Open flames/candles prohibited \_\_\_\_\_

**COMMON AREAS**

- Corridors in good repair \_\_\_\_\_
- Stairways clear \_\_\_\_\_
- Restroom in sanitary condition \_\_\_\_\_
- Emergency supplies available (first-aid kits, bloodborne pathogens clean-up kit) \_\_\_\_\_
- All OSHA and Worker’s Compensation notices posted.  
This includes:
  - OSHA 2203 or 3165 poster or State equivalent \_\_\_\_\_
  - Access to Employee Medical Records \_\_\_\_\_
  - Workers Compensation \_\_\_\_\_
  - OSHA 300A Summary (Posted Feb. 1-May 1) \_\_\_\_\_

**ERGONOMIC CHECKLIST**

All employees performing administrative activities shall use the checklist below. If additional assistance is needed, contact the Health Safety Department.

- Adjust chair height so that your upper legs are horizontal and feet are flat on floor \_\_\_\_\_
- Adjust chair to sit up straight and obtain proper back support \_\_\_\_\_
- Avoid tilting or turning head to view the computer monitor \_\_\_\_\_
- Adjust monitor to the recommended viewing distance of 18 to 30 inches \_\_\_\_\_
- Avoid tilting head to hold the telephone receiver between head and shoulder \_\_\_\_\_
- Ensure forearms and wrists are level \_\_\_\_\_
- Avoid resting hands, wrists and arms on hard or sharp edges \_\_\_\_\_
- Ensure that the work station provides adequate legroom \_\_\_\_\_
- Keep arms resting comfortably at sides and shoulders relaxed \_\_\_\_\_
- Place keyboard and mouse at comfortable distance from the body \_\_\_\_\_
- Place frequently used items within easy reach \_\_\_\_\_
- Alternate tasks to break up extended periods on the computer \_\_\_\_\_