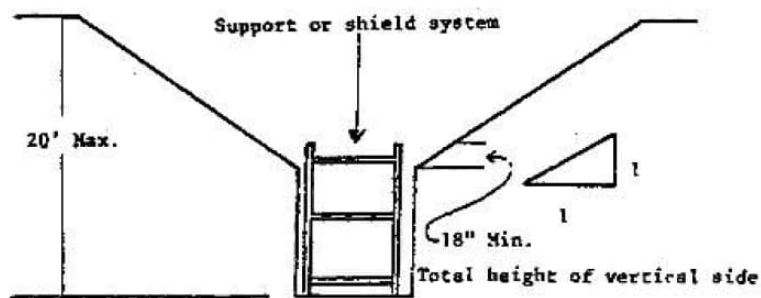


Pages 268-293

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

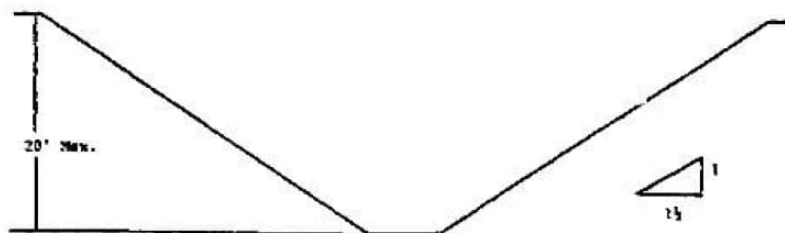


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

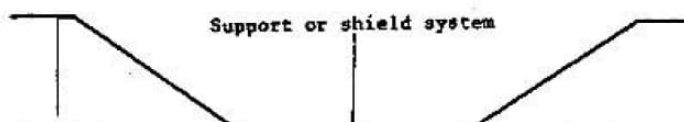
#### B-1.3 Excavations Made in Type C Soil

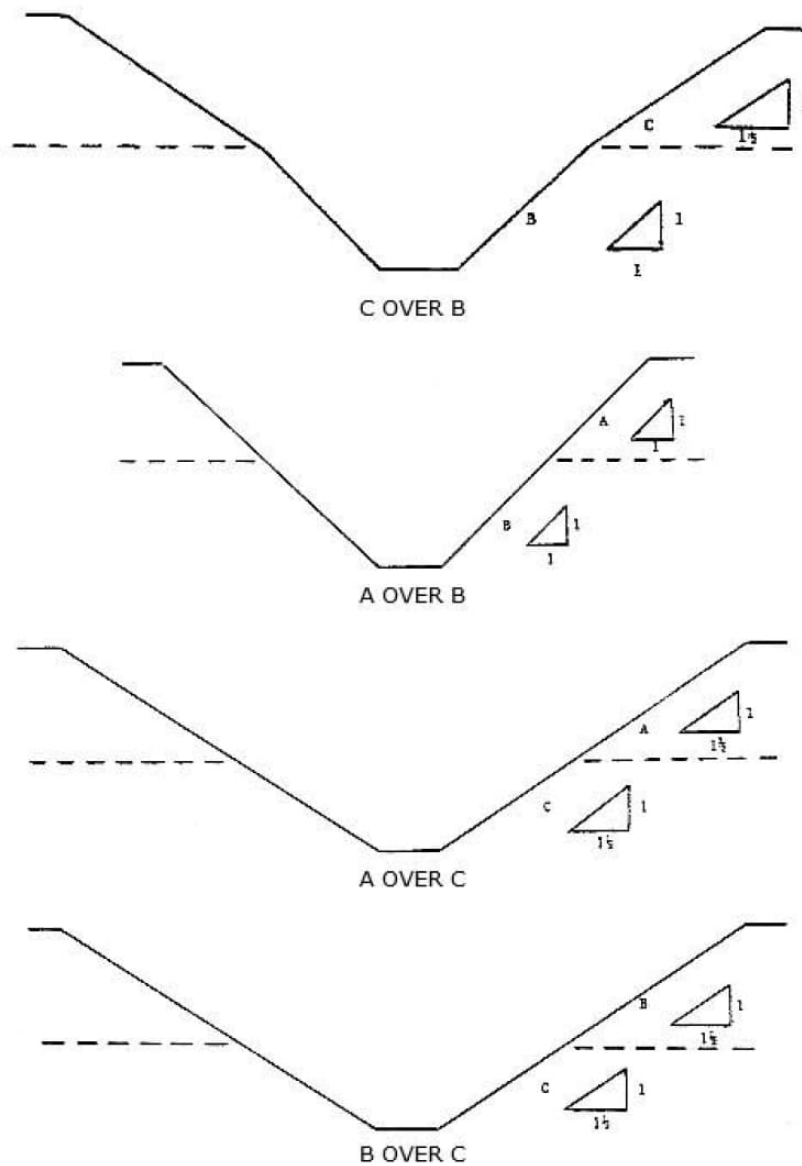
1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.





2. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

## Exhibits

### EXHIBIT "A" Trench Inspection Sheet

TRENCH INSPECTION AND ENTRY AUTHORIZATION FORM

# FALL PROTECTION

## Purpose

To provide guidelines to ensure the safety of all employees involved in the duties of elevated work.

## References

OSHA 29 CFR 1926.21

OSHA 29 CFR 1926.28

OSHA 29 CFR 1926.500

OSHA 29 CFR 1926.750

## Policy

Prior to the start of work where new facilities will be constructed and/or where work will be performed at a client's existing facilities, construction management shall make an initial survey of the types of fall hazards which are expected to be encountered and develop a plan relative to providing the kind and number of safeguards that shall protect against these fall hazards.

## DEFINITIONS

This section sets forth the definitions applicable to this procedure.

**Fall Protection:** Workers six (6) feet above the floor or ground level shall be protected from the possibility of a fall hazard which could result in injury or death.

**100% Tie Off:** Persons working in areas where the use of safety belts/harnesses with lanyard is required shall be used. In areas where the 100% tie off requirement is not practical, other means of protection shall be used, i.e., scaffold's, catch platforms, nets, etc.

**Anchorage:** A secure point of attachment for lifelines, lanyards, or deceleration devices, which is capable of withstanding the forces specified in this procedure.

**Approved:** Means, for the purpose of this section; tested and certified by the manufacturer, or any recognized national testing laboratory, to possess the strength requirements specified in this section.

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**Body Belt:** Type 1 safety belt used in conjunction with lanyard or lifeline for fall restraint only.

**Full Body Harness:** Configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders and pelvis, with provisions for attaching a lanyard,

fall. Compliance with anchorage strength requirements specified in the applicable sections of OSHA or state regulations shall constitute approval of the anchorage.

**Fall Protection Work Plan:** A written document in which the employer identifies all areas on the jobsite where a fall hazard of six (6) feet or greater exists. The plan describes the method or methods of fall protection to be utilized to protect employees, and includes the procedures governing the installation, use, inspection, and removal of the fall protection methods, which are selected by the employer.

**Fall-Restraint System:** 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. When standard guardrails are selected, compliance with applicable sections governing their construction and use shall constitute approval.

**Fall Distance:** The actual distance from the worker's support to the level where a fall would stop.

**Guardrails:** Top rail must be between 39" – 45" above the walking/working surface.

**Hardware:** Meaning snap hooks, D-rings, buckles, carabineers, adjusters, O-rings, that are used to attach the components of a fall protection system together.

**Horizontal Lifeline:** A rail, wire rope, or synthetic rope that is installed in a horizontal plane between two anchorage's and used for attachment of a worker's lanyard or lifeline device while moving horizontally; used to control dangerous pendulum-like swing falls.

**Lanyard:** A flexible line of webbing rope, or cable used to secure a body belt or harness to a lifeline, or an anchorage point usually 2, 4, or 6 feet long.

**Leading Edge:** Advancing edge of a floor, roof, or form work which changes location as additional floor, roof or form work sections are placed, formed, or constructed. Leading edges not actively under construction are considered to be "unprotected sides and edges" and positive methods of fall arrest or fall restraint shall be required to protect exposed workers.

**Lifeline:** A vertical line from a fixed anchorage or between two horizontal anchorages', independent of walking or working surfaces, to which a lanyard or device is secured. Lifeline as referred to in this text is one that is part of a fall protection system used as back-up safety for an elevated worker.

**Locking Snap Hook:** A connecting snap hook that requires two separate forces to open the gate; one to deactivate the gatekeeper and a second to depress and open the gate

which automatically closes when released; used to minimize roll-out or accidental disengagement.

**Low-Pitched Roof:** A roof having a slope equal to or less than 4 in 12.

snap hooks that open when the gatekeeper is depressed and double action snap hooks that require a second action on a gatekeeper before the gate can be opened.

**Static Line:** See Horizontal Lifeline.

**Strength Member:** Any component of a fall protection system that could be subject to loading in the event of a fall.

**Steep Roof:** A roof having a slope greater than 4 in 12

**Unprotected Sides and Edges:** 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 as defined in this section.

**Walking/Line System:** For the purpose of this section, any area whose dimensions are 45 inches or greater in all directions through which workers pass or conduct work.

**Warning Line System:** A barrier erected on a walking and working surface or a low pitch roof (4 in 12 or less), to warn employees that they are approaching an unprotected fall hazard(s).

**Work Area:** That portion of a walking/working surface where job duties are being performed.

## **FALL PROTECTION WORK PLAN**

The Safety & Compliance Manager in partnership with the Site Superintendent shall develop and implement a written fall protection work and rescue plan including each area of the workplace where the employees are assigned and where fall hazards of six (6) feet or more exist. It is recommended that the written plan be upgraded every month. The plan will be posted on the [SCS Safety Portal](#).

The fall protection work plan shall:

- Identify all fall hazards in the work area as the project work progresses.
- Describe the method of fall arrest or fall restraint to be provided.
- Describe the correct procedures for the assembly, maintenance, inspection, and disassembly of the fall protection system to be used.
- Describe the method of providing overhead protection for workers who may be in or pass through the area below the work site.
- Be available on the jobsite for inspection.

Prior to permitting employees into areas where fall hazards exist, the employer shall:

- Ensure that employees are trained and instructed in the items described above and...
- Inspect fall protection devices and systems to ensure compliance with applicable

and edges, including the leading edge of a low-pitched roof or walking/working surface.

- Warning line system as described in OSHA 1926.500 are prohibited on surfaces exceeding a 4 in 12-pitch, and on any surface whose dimensions are less than 45 inches in all directions.

Fall arrest protection shall consist of:

### **Full Body Harness**

- An approved Class III body harness shall be used.
- Body harness system or components subject to impact loading shall be immediately removed from service and shall not be used again for employee protection.
- All safety lines and lanyards shall be protected against being cut or abraded.
- Body harness system shall be rigged to minimize free fall distance with a maximum free fall distance allowed of 6 feet, and such that the employee will not contact any lower level.
- Hardware shall be drop forged, pressed or formed steel, or made of materials equivalent in strengths.
- Hardware shall have a corrosion-restraint finish and all surfaces and edges shall be smooth to prevent damage to the attached body harness or lanyard.
- When vertical lifelines (*drop lines*) are used, not more than one employee shall be attached to any one lifeline.
- Full body harness systems shall be secured to anchorage's capable of supporting 5,000 pounds per employee except:
- When self-retracting lifelines or other deceleration devices are used which limit free fall to two feet, anchorages shall be capable of withstanding 3,000 pounds.
- Independent lifelines (*drop lines*) shall have a minimum tensile strength of 5,000 pounds, except the self-retracting lifelines and lanyards which automatically limit free fall distance to two feet or less shall have a minimum tensile strength of 3,000 pounds.
- Horizontal lifelines shall have a tensile strength capable of supporting a fall impact load of at least 5,000 pounds per employee using the lifeline applied anywhere along the lifeline.
- Lanyards shall have a minimum tensile strength of 5,000 pounds.
- All components of body harness systems whose strength is no otherwise specified shall be capable of supporting a minimum fall impact load of 5,000 pounds applied at the lanyard point of connection.
- Full body harness systems shall be inspected prior to each use for mildew, wear, damage, and other deterioration, and defective components shall be removed from service if their function or strength has been adversely affected.

- Safety nets shall be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 10 feet below such level.
- Safety nets shall be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force

## **GUARDING OF LOW-PITCHED ROOF PERIMETERS**

### **General Provisions**

During the performance of work on low pitched roof with a ground to eaves height greater than 6 feet, project management shall ensure that employees engaged in such work be protected from falling from all unprotected sides and edges of the roof as follows:

- By the use of a fall restraint or fall arrest system, as defined in applicable OSHA or state regulations.
- By the use of a warning line system erected and maintained as provided elsewhere in this section.
- Mechanical equipment shall be used or stored only in areas where employees are protected by a warning line system, or fall restraint, or fall arrest systems as described in applicable OSHA or state regulations.

### **Exception:**

- The provisions of this section do not apply at points of access such as stairways, ladders, and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof level conditions.

### **Catch Platforms**

- A catch platform shall be installed within 6 vertical feet of the work area.
- The catch platform's width shall equal the distance of the fall but shall be a minimum of 45 inches wide and shall be equipped with standard guardrails on all open sides.

Independent lifelines used in areas where the lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8 inch wire core manila rope. For all other lifeline applications, a minimum of 3/4 inch manila or equivalent, with a minimum breaking strength of 5,000 pounds shall be used.

### **Warning Line Systems**

- Warning lines shall be erected around all sides of the work area.
- When mechanical equipment is not being used, the warning line shall be erected not less than six feet from the roof edge.
- When mechanical equipment is not being used, the warning line shall be erected not less than six feet from the roof edge which is parallel to the direction of

mechanical equipment operation and not less than 10 feet from the roof edge which is perpendicular to the direction of mechanical operation.

- The warning line shall consist of a rope, wire, or chain and supporting stanchions erected as follows:
  - The rope, wire, or chain shall be flagged at not more than six feet intervals

- When fall restraint systems are used, they shall be rigged to allow the movement of employees only as far as the roof edge.
- Materials shall not be stored within six feet of the roof edge unless guardrails are erected at the roof edge.

### **LEADING EDGE CONTROL ZONE**

When performing leading edge work, project management shall ensure that a control zone be established according to the following requirements:

- The control zone shall begin a minimum of 6 feet back from the leading edge to prevent exposure by employees who are not protected by fall restraint or fall arrest systems.
- The control zone shall be separated from other areas of the low-pitched roof or walking/working surface by the erection of a warning line system.
- The warning line system shall consist of wire, rope, or chain supported on stanchions, or a method which provides equivalent protection.
- The spacing of the stanchions and support of the line shall be such that the lowest point of the line (including sag) is not less than 39 inches from the walking/working surface, and its highest point is not more than 45 inches from the working/walking surface.
- Each line shall have a minimum tensile strength of 500 pounds.
- Each line shall be flagged or clearly marked with high visibility materials at intervals not to exceed 6 feet.

### **FALL PROTECTION**

Additional procedures that require the use of fall restraint and/or fall arrest protection for employees are listed below:

- Ladder
- Suspended Scaffold
- Two Points Suspension Scaffold
- Bosun's Chain Scaffold
- Needle Beam Scaffold
- Ladder Jack Scaffold
- Window Jack Scaffold
- Float or Ship Scaffold
- Pump Jack Scaffold
- Boom Supported Elevating Work Platforms
- Vehicle Mounted Elevated and Rotating Work Platforms
- Crane and Derrick Supported Work Platforms
- Open Sided Floors

- Pile Driving
- Vertical Slip Forms
- Placing and Removal of Forms
- Steel Erection Temporary Floor

## General Fire Safety

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Our local fire department is well acquainted with our facility, its location, and specific hazards. All fire doors and shutters must be maintained in good operating condition. Fire doors and shutters should be unobstructed and protected against obstructions, including their counterweights. Fire door and shutter fusible links must be in place.

All automatic sprinkler water control valves, if any, air and water pressures should be checked routinely. The maintenance of automatic sprinkler systems is assigned to the Maintenance Department. Sprinkler heads should be protected by metal guards if they could possibly be exposed to damage. Proper clearance must be maintained below sprinkler heads.

Portable fire extinguishers are provided in adequate number and type and are located throughout the facility. Fire extinguishers are mounted in readily accessible locations. Fire extinguishers are recharged regularly, and the date of the last inspection noted on their tags. All employees are periodically instructed in the use of extinguishers and fire protection procedures. Notify the Safety & Compliance Manager of any damage to fire protection equipment.

## Fire Department

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The local Fire Departments are responsible for protecting people and property from fires, explosions, and other hazards through prevention and expeditious control of such events. In addition, the Fire Department provides first-response rescue and transportation services in medical emergencies. The Fire Department's inspection staff is responsible for ensuring company-wide compliance with fire safety and protection requirements and for reviewing all plans and procedures for compliance with these requirements; for inspecting and testing automatic fire protection and alarm systems and ensuring their maintenance and repair; for conducting fire safety and protection inspections; and for providing fire prevention recommendations.

Other responsibilities include training employees in fire safety equipment, practices, and procedures. All these fire protection and response functions are performed in conformance with OSHA regulations, State law, S.C. Swiderski, LLC policies, and nationally recognized standards and guidelines for fire and life safety.

The Fire Chief and the Fire Marshall have the authority to enforce applicable requirements of the Uniform Building Code; the Uniform Fire Code; National Fire Protection Association Codes (including the Life Safety Code), Standards, and Recommended Practices; and the fire protection provisions of OSHA Orders. All employees must immediately report fires,

smoke, or potential fire hazards to the Fire Department (dial 911). All employees must conduct their operations in such a way as to minimize the possibility of fire. This means applying rules such as keeping combustibles separated from ignition sources, being careful about smoking, and avoiding needless accumulations of combustible materials. Supervisors are responsible for keeping their operating areas safe from fire.

other material and design approved for such use, which is emptied each day, need not be covered.)

- Use safe ashtrays for the disposal of smoking materials and make sure that the contents are extinguished and cold to the touch before emptying them into a safe receptacle.
- Planning the use of combustibles in any operation so that excessive amounts need not be stored.
- Storing paper stock in metal cabinets and rags in metal bins with automatically closing lids.
- Making frequent inspections and checks for non-compliance with these rules in order to catch fires in the potential stage.

## Class B Combustibles

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Class B combustibles are flammable and combustible liquids (including oils, greases, tars, oil-based paints, lacquers) and flammable gases. Flammable aerosols (spray cans) are treated here. Cryogenic and pressurized flammable gases are treated elsewhere in this manual. **The use of water to extinguish Class B fires (by other than trained firefighters) can cause the burning liquid to spread carrying the fire with it.**

Flammable-liquid fires are usually best extinguished by excluding the air around the burning liquid. Generally, this is accomplished by using one of several approved types of fire-extinguishing agents, such as the following:

- Carbon dioxide ABC multipurpose dry chemical Halon 1301 (used in built-in, total-flood systems)
- Halon 1211 (used in portable extinguishers)
- Fires involving flammable gases are usually controlled by eliminating the source of fuel, i.e., closing a valve.

Technically, flammable, and combustible liquids do not burn. However, under appropriate conditions, they generate sufficient quantities of vapors to form ignitable vapor-air mixtures. As a general rule, the lower the flashpoint of a liquid, the greater the fire and explosion hazard. It should be noted that many flammable and combustible liquids also pose health hazards.

**NOTE:** The flash point of a liquid is the minimum temperature at which it gives off sufficient vapor to form an ignitable mixture with the air near the surface of the liquid or within the vessel used. It is the responsibility of the user to ensure that all Class B combustibles are properly identified, labeled, handled, and stored. If assistance is required, contact the Responsible Safety Office.

### Safe handling of Class B combustibles means:

- Use only approved containers, tanks, equipment, and apparatus for the storage, handling, and use of Class B combustibles.

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- Make sure that all containers are conspicuously and accurately labeled as to their contents.
- Dispense liquids from tanks, drums, barrels, or similar containers only through approved pumps taking suction from the top or through approved self-closing valves or faucets.
- Store, handle and use Class B combustibles only in approved locations, where vapors cannot reach any source of ignition, including heating equipment, electrical equipment, open flame, mechanical or electrical sparks, etc.

- The cabinets must not be more than 20 in. deep by 37 in. wide by 72-3/4 in. high.
- The cabinets must be all-metal construction with positive latches to prevent spillage of contents in the event of an earthquake.
- All doors must return automatically to the closed position when not held open manually.
- A 45 degree-angle fairing must be provided from the wall to the corridor corner of the cabinet. Fairing must be provided at both ends of the cabinet or bank of cabinets.
- A 45 degree-angle fairing must be provided at the top of the cabinets from the outside corridor edge of the cabinet to the wall.
- All cabinets must be anchored to the wall firmly enough to withstand 0.5g of lateral acceleration (or a lateral load equal to 1/2 the total deadweight of the cabinet and its contents) in the event of an earthquake. Liquids and chemicals are not to be stored in corridor lockers.
- All cabinets must be kept locked, with one key being retained by the Building Manager.
- All cabinets must be labeled with the contents and the name, address, and telephone number of the assigned user.

Any deviation from the above requirements must be approved by the Safety & Compliance Manager.

#### Portable Heaters

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See Page 105.

#### Welding & Other Permits

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As part of the local Fire Department's program to control and reduce fire hazards, a permit system is in effect to cover welding, burning, or other operations with a high fire hazard. Typically, operations that require a permit are:

- Welding (arc, oxyacetylene, or heliarc)
- Soldering (which requires an open flame) Use of a torch (for cutting, bending, forming, etc.)
- Open fires for any purpose

To obtain additional information or to request a permit for these operations, call the Fire Department on its business line, not the emergency 911 number.

## Fire Prevention

### Purpose

To provide guidelines for fire protection and prevention in shops and on jobsites.

- Painted in yellow and lettered in red: "**FLAMMABLE**"
- The use of open containers and glass containers is strictly prohibited. Flammable liquids shall not be placed, stored, or transported in such containers.
- Flammable liquid containers (safety cans) shall be maintained in good mechanical order. All integral parts or devices such as seals, closing springs, flash arresters and similar items shall be maintained. Each container shall be inspected prior to use by those using it and defect reported to the foreman.
- All flammable liquid containers shall be plainly marked or identified.
- A supervisor to ensure proper working order shall periodically inspect safety cans. All defective cans shall be removed from service and be disposed of.
- Under no circumstances shall employees be allowed to dismantle, alter or repair safety cans without permission of the Safety & Compliance Manager.
- The application of air pressure or compressed gas to any flammable liquid container for any purpose is strictly prohibited.
- Flammable liquids shall not be used or stored within 20 feet of sources of heat or ignition. Conditions or circumstances may dictate greater distances or complete isolation.
- Defective faucets, spigots or pumps on bulk containers shall be replaced immediately.
- Only approved explosion proof electrical devices and/or connectors shall be used in the presence of flammable liquids or vapors.
- Only approved lights shall be used during cleaning and painting operations inside confined spaces.
- Adequate forced air ventilation to prevent accumulation of vapor shall be introduced by explosion proof equipment, in all confined spaces, surface areas and where large areas are being painted or cleaned with flammable liquids.
- Rags or other combustible materials used to absorb or wipe up flammable liquids shall be disposed of in approved receptacles. If rags are to be washed and reused, keep in covered metal container.
- All employees required to work with flammable liquid shall be thoroughly instructed in the proper use, handling, and storage of them.
- Employees shall not use, handle, or transport flammable liquids unless authorized to do so by supervision.
- The transportation of flammable liquids inside passenger compartment of company owned or operated vehicles is prohibited.
- Non-approved cloth type gloves shall not be worn while using flammable liquids.
- Gloves and aprons of non-absorbent materials shall be worn in any operation where clothing is likely to become wetted with flammables, acids or caustics.
- All containers, valves, faucets, hoses, spout assemblies, transfer pumps and similar items used to store, convey, or transfer flammable materials shall comply with the specifications established by Underwriters Laboratories or Factory Mutual. Check with the Safety & Compliance Manager if you have any questions.

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## First Aid Kits

First-aid kits and required contents are maintained in a serviceable condition. Unit-type kits have all items in the first-aid kit individually wrapped, sealed, and packaged in

## First Aid Station

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If a fixed establishment employs more than 200 employees at one central location, First-aid stations shall be located as close as practicable to the highest concentration of personnel. First-aid stations shall be well marked and available to personnel during all working hours. One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station. First-aid stations shall be equipped with a minimum of two first-aid kits, the size of which shall be dependent upon the number of people normally employed at the worksite.

One first-aid kit may be a permanent wall-mounted kit, but in all cases, the station shall be equipped with at least one portable first-aid kit. When required by the circumstances, the station shall be equipped with two wool blankets and a stretcher in addition to first-aid kits. A roster, denoting the telephone numbers and addresses of doctors, hospitals, and ambulance services available to the worksite, shall be posted at each first-aid station.

[Info on the OSHA website](#)

## Hand Tools

### Purpose

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