



**PAINTING
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SAFETY TOPIC GUIDE

These safety plan documents are provided as general information and recommendations regarding risk prevention only and should not be considered legal or other expert advice. These are sample forms and are not intended to cover or identify all possible risk exposures. Use of these documents does not warrant or guarantee accreditation or certification for any program. Since each business situation is unique, these sample documents should be edited to meet your specialized circumstances and needs. The material included is not intended to be a substitute for or ensure compliance with any state, federal or local laws or regulations, including but not limited to specific laws and standards on accreditation or certification. The recommendations provided may help reduce the risk of loss, but should not be construed as eliminating any or all risk of loss. Qualified counsel should be sought regarding questions specific to your circumstances and to develop forms and procedures for your business.

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Important Notice (F70-400)

This sample document is intended solely for educational and informational purposes and is not intended to set forth or establish any generally accepted industry guidelines or standards. The information contained in this document is merely suggested procedures based upon collective experience. These suggestions may or may not apply in any given situation. Under no circumstances should this document be used as a sole resource to supply the specialized advice necessary for developing an effective safety and accident prevention program.

Your safety program is intended to help you deal with the known and recognized hazards that you have chosen to focus upon, concentrating on hazards that may exist in your business. These guidelines and procedures are based on various state and federal laws and the collective experience of loss control professionals. The material is not intended to comply with any state, federal or local regulations. Use this resource material as a guideline only, and obtain the advice of appropriate professionals for specific information on special hazards or regulations that may apply to your particular operation and for developing forms and procedures for your business. Since each business situation is unique, this sample document should be edited to meet your specialized circumstances and needs. This sample form should not be considered legal or specialized safety advice.

Programs contained in this document are general enough to meet most state laws and regulations; however, it is strongly recommended that you consult a competent professional who is familiar with the specific laws and regulations of your state.

This safety information is designed to supplement your existing safety training and does not constitute a complete safety training program. Remember, the key to an effective program is using the safety program material and **implementing** it into your normal business operations.



Compressed Air	1
Compressed Gases	2
Construction Site Safety	4
Dip Tanks	5
Electrical	6
Eye Protection	7
Fire Extinguishers	8
Flammable and Combustible Liquids	9
Foot Protection	10
Forklift Trucks	12
Forklift Operator Training	13
Grinders.....	15
Grinder Checklist	16
Hand Safety	17
Hoists & Crane	18
Kitchen Exhaust	19
Ladders	20
Machine Guarding	22
Material Handling	23
Office Safety	24
Portable Hand Tools	25
Power Tools	26
Safe Backing	27
Safe Lifting	28
Hand Safety When Lifting	29
Scaffolding.....	30
Scissor Lifts	31
Security	33
Slip, Trip, and Fall Prevention	34
Split Rims	35
Spray Painting	36
Trenching and Excavating	37
Welding and Cutting	38
Hot Work	39
Hot Work Permit	40
Workplace Violence	41

- Check the condition of the hose. Air hoses are designed to withstand pressure, but become weakened at bends, kinks, and connections to shut-off valves and nozzles. Such weak points may swell and burst, throwing pieces of hose in every direction, also causing the hose to thrash about dangerously.
- Keep the air hose off the floor. It is a tripping hazard and is subject to damage by trucks, doors, and dropped tools.
- Always coil the hose, without kinks, and hang it over a broad support when not in use.
- Where you have choice of pressure, use the lowest pressure possible.
- Air pressure against the skin may penetrate deeply to cause internal hemorrhage and intense pain. Air that enters body openings may burst internal organs.
- It is dangerous to use compressed air to remove dust from clothing. Use safer, better ways of cleaning dust from your clothes. Dust blown from anything merely rises and settles again to become a nuisance.
- Air compressors shall be equipped with pressure relief valves and pressure gauge.
- Use low pressure (under 30psi) and the correct nozzle to remove duct or particles from jigs, fixtures or deep holes in parts. Wear cup type goggles and set up shields to protect others in the area.
- For transferring liquids from properly rated pressure vessels, check air pressure, attach hose connection tightly, remain at control valve to shut off in emergency, and make sure bleed-off valve and pressure relief valve work. Never use compressed air to transfer flammable liquids.
- Air filters shall be installed on the compressor intake to ensure only clean, uncontaminated air enters the compressor.
- Safety devices on compressed air systems shall be checked frequently.
- Before any repair work is done on the pressure system of a compressor, the pressure shall be bled off and the system locked-out.
- Signs shall be posted to warn of the automatic starting
- Feature of the compressors.
- The belt drive system shall be totally enclosed to provide protection for the front, back, top and sides.
- When compressed air is used with abrasive blast cleaning equipment, the operating valve shall be of the type that must be held open manually.
- A clip on chuck and an in line regulator (preset to 40psi) shall be required when compressed air is used to inflate auto tires.

Any material that is under pressure can be dangerous if it is not handled properly. If the material is a compressed gas it may be flammable, explosive, reactive, toxic or a combination of these. Because of the hazards of compressed gases, it is important to know what you are working with, what the hazardous properties are, and how to safely handle the compressed gas cylinder.

The following compressed gases require special treatment:

Oxygen: Oxygen is not flammable, but increases the tendency of things around it to burn or explode. Keep oxygen cylinders away from combustible or flammable materials and fire hazards, including oil or grease on your hands, clothes and work area. Oxygen should not be used for compressed air.

Chlorine and Fluorine: These gases are highly corrosive and irritating and will attack many materials. When combined with acetylene, and exposed to light, they may explode. In water chlorine will form corrosive hydrochloric acid, attacking iron or steel equipment. A gas mask and other protective equipment should be available.

Ammonia: Ammonia is a highly corrosive gas that requires quick access to a gas mask and other protective equipment.

Acetylene and Hydrogen: Both are highly explosive gases requiring extreme caution when handling. Hydrogen escapes easily around threaded fittings. Friction of escaping gas can ignite spontaneously. Hydrogen has no odor to warn of a leak.

- Cylinders should always be chained in upright position to a wall, cylinder truck, cylinder rack or post. This becomes more important when gas is in use, as a regulator is attached to the cylinder valve and the safety cap is not in place.
- Always replace the cylinder cap when the cylinder is not in use or when it is being moved.
- Never place cylinders in hallways or work areas where they could be hit by fork lift trucks or struck by falling objects.
- Never hammer, pry or wedge a stuck or frozen cylinder valve to loosen it, and never use a wrench. If a valve will not open by hand, call the gas distributor.
- Do not rely on the color of the cylinder to identify the gas inside, as suppliers use different color codes. Return any unidentifiable cylinders to the supplier.
- Keep cylinders away from electrical circuits and excessive heat. Cylinders are made of steel and will conduct electricity.
- Keep cylinders away from the sparks, hot slag of molten metal resulting from welding, cutting, machining or foundry operations. Using or storing cylinders at temperatures in excess of 130 degrees F is in violation of DOT regulations. Keep cylinders out of direct sunlight as gases expand when heated. A cylinder at 2200 psig and 70 degrees F will increase in pressure to 2451 psig at 130 degrees F.
- Always “crack” the cylinder valve (open it slightly and close it immediately) before attaching a gas regulator to any cylinder, **except hydrogen or fuel gas cylinders**. Cracking removes any dirt that may be lodged in the valve outlet, and prevents dirt from entering the regulator. Wipe out the outlet connections on hydrogen or fuel gas cylinders with a clean, dry, lint free cloth. Do not stand in front of the valve outlet while cracking it, and do not point the outlet at anyone.

- Always use a cylinder wrench or other tightly fitting wrench to tighten the regulator nut and hose connections.
- Store fuel gas cylinders away from oxygen and compressed gas cylinders. OSHA regulations require stored oxygen cylinders be separated from fuel gas cylinders and combustible materials by at least 20 feet or by a noncombustible barrier at least 5 feet high having a fire resistive rating of a least one/ half hour.
- Keep unauthorized persons away from the cylinder storage areas. Use a lock or fence if necessary.
- **“No Smoking”** signs should be posted around all fuel gas and oxygen storage areas.
- Under certain conditions, otherwise harmless gases can kill. Inert gases such as argon, helium, carbon dioxide and nitrogen can cause asphyxiation. Always use these gases in well ventilated areas.

- **Perimeter Barricades:** Entire construction site should be fenced, or otherwise secured, to prevent unauthorized persons from intentionally or unintentionally entering the work site.
- **Internal Barricades:** Barricades will help warn workers of hazardous areas where dangerous conditions might exist.
- **Tools:** Tools should be well maintained. They should be properly stored when not in use. The correct tool should always be used for the job.
- **Walkways:** Walkways should be clearly marked and roped off, allowing employees to safely enter and leave the work site.
- **Housekeeping:** All debris, tools and equipment, should be picked up and either stored or disposed of in the proper location.
- **Excavations:** Excavations should get special attention and a detailed company procedure should be followed.
- **Above Ground Work:** Ladders and scaffolds should be regularly inspected for damage and weakness. Specific safety rules should be adopted for these devices.
- **Electricity:** Electrical power sources not necessary for construction should be shut off. Insulate all wiring and post warnings around live wires. Fuses, circuit breakers, and ground fault interrupters should be used to help prevent shock injury. Be aware of the dangers of overhead wires.
- **Fires:** Fire protection equipment should be made available and employees trained in proper use.
- **Personal Protective Equipment:** Safety equipment such as shoes, gloves, hard hats, and eye protection should be provided to all employees at the site. All employees should use and maintain these ite

- All dip tank operations should be conducted in accordance with NFPA Standard No. 34 “Standard for Dipping and Coating Processes Using Flammable and Combustible Liquids”.
- The dip tank and cover should be constructed of noncombustible materials, such as steel, reinforced concrete, or masonry.
- At least six inches of freeboard should be provided between the top of the highest liquid level and the top edge of the tank.
- The cover of the dip tank should be activated by a fusible link, although pneumatic and electric detection devices are acceptable. When not in use the cover should remain closed.
- Local or general exhaust ventilation should be provided to the area around the dip tank.
- Hazardous location electrical equipment, approved for Class I, Division 1 locations, should be provided within a five foot area surrounding the dip tank.
- A portable fire extinguisher with a Class B rating not less than double the surface area of the tank should be provided.
- Dip tanks should be located in separate isolated rooms, away from all other operations.
- If possible, the dip tank should be provided with automatic sprinkler protection.
- Flammable liquids should be handled in safety containers or by means of self dispensing nozzles.
- Safe dispensing into the tank should include static electricity control by bonding and grounding cables.
- Solvent soaked rags and waste should be collected in safety waste containers.
- No welding or open flame devices should be allowed near the dip tank.
- “**No Smoking**” signs should be posted near the dip tanks.

- When electrical equipment or lines are to be serviced, maintained or adjusted, necessary switches should be opened, locked-out and tagged-out whenever possible.
- All portable electrical tools and equipment should be grounded or double insulated type.
- Extension cords should have grounded conductors and insulation in good condition.
- Use of metal ladders is prohibited in areas where the ladder or the person using the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors.
- Exposed wiring and cords with frayed or deteriorated insulation should be repaired or replaced.
- All cord, cable and raceway connections should be intact and secured. All unused openings in electrical enclosures and fittings closed with appropriate covers, plugs, or plates. Electrical enclosures such as switches, receptacles, or junction boxes should be provided with tight fitting covers or plates.
- Ground fault circuit interrupters should be installed on each temporary 15 or 20 ampere, 120 volt AC circuit at locations where construction, demolition, modifications, alterations or excavations are being performed.
- Electrical installations in hazardous dust or vapor areas should meet the National Electrical Code (NEC) for hazardous locations Class I, Division 1.
- Inspect all electrical equipment before using. Use only equipment in good condition.
- Start and end electrical equipment with switch in “OFF” position. Do not leave the switch in the “ON” position and use the plug to turn the equipment on and off.
- Installation work should be in compliance with the National Electric Code Standards, OSHA, local building codes and ordinances. This work should be performed by a qualified and fully licensed electrician.
- Fixtures, appliances and equipment used should be listed or labeled by Underwriters Laboratories or another nationally accepted testing organization.

In all operations where striking and struck tools are used, or where the cutting action of a tool causes particles to fly, eye protection (American National Standards Institute Z87.1- *Practice for Occupational and Educational Eye and Face Protection*) is needed by the user of the tool and by others who may be exposed to flying particles.

- Protective equipment, including personal protective equipment for eyes and face, shall be provided, used, and maintained in a sanitary and reliable condition. This protection should be provided whenever it is necessary by reason of hazards of processes or entrainment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.
- Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.
- Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors.
- Persons whose vision requires the use of corrective lenses in spectacles, and who are required by this standard to wear eye protection, shall wear goggles or spectacles of the following types: spectacles whose protective lenses provide optical protection or goggles that can be worn over corrective lenses mounted behind the protective lenses.
- Safety goggles or face shields should be worn when woodworking or cutting tools, such as chisels, brace bits, planes, scrapers, and saws are used and there is a chance of particles falling or flying into the eyes.
- Eye protection should be worn when working with grinders, buffing wheels and scratch brushes.
- Jobs such as cutting wire and cable, hand drilling, removing nails, chipping concrete, shoveling material or working under objects where particles of materials may fall require eye protection.
- Wear eye protection, keep it clean and fit for use, wear the right protection for the job.

Follow appropriate first aid for eye injuries.

- A fire extinguisher, rated not less than 2A 10B:C, should be provided for each 3,000 square feet of the protected building area or major fraction thereof. Travel distance from any point of the protected area to the nearest fire extinguisher shall not exceed 75 feet.
- One or more fire extinguishers should be provided for each floor. In multi-story buildings, at least one fire extinguisher should be posted adjacent to the stairway.
- Fire extinguishers should be conspicuously located and readily accessible at all times. They should be periodically inspected and maintained in operating condition.
- Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are prohibited.
- Each fire extinguisher is considered professional equipment and its effectiveness in protecting property depends on knowing: What it can and cannot do how to use it, where to install it, how to maintain it, knowledge of classes or types of fires, what class or classes of fire the extinguisher is capable of extinguishing.
- Training should be provided for the use of fire extinguishers.

Classes of Fires

Class A - Fires in ordinary combustible materials (wood, paper, cloth)

Class B - Fires involving flammable liquids, gases and greases

Class C - Fires which involve energized electrical equipment

Class D - Fires in combustible metals

Class K - Fires associated with cooking oils, fats, and grease

A flammable liquid is defined as any liquid whose flash point, the temperature at which vapors can ignite when there is a spark, flame or static electricity, is below 100 degrees F. At higher concentrations and higher temperatures the vapors of the liquid can ignite or explode without a spark. Most flammable liquids are volatile, evaporate quickly and reach a concentration in the air that could lead to an explosion. Some highly volatile flammable liquids are gasoline, acetone and alcohol. Containers with these flammable liquids must be marked with a red label indicating the hazard. To work safely with flammable liquids the three potential hazards: temperature, concentration of vapor and ignition sources must be controlled.

A combustible liquid is defined as any liquid whose flash point is at or above 100 degrees F.

- Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids.
- No more than 60 gallons of flammable or combustible liquids shall be stored in any one storage cabinet. No more than three storage cabinets may be located in a single storage area.
- Inside storage rooms for flammable and combustible liquids shall be of fire resistive construction, have self closing fire doors at all openings, 4 inch sills or depressed floors, a ventilation system that provides at least six air changes within the room per hour, and electrical wiring and equipment approved for Class I, Division 1 locations.
- Storage in containers outside buildings shall not exceed 1,100 gallons in any one pile or area. The storage shall be graded to divert possible spills away from building or other exposures, or shall be surrounded by a curb or dike. Storage areas shall be located at least 20 feet from any building and shall be free from weeds, debris and other combustible materials not necessary to the storage.
- “**No Smoking**” signs shall be posted in service and refueling areas.
- Drums containing Class I flammable liquids shall be grounded and bonded before and during dispensing into containers.
- All flammable and combustible liquid wastes shall be kept in fire-resistant, covered containers.
- Appropriate fire extinguishers shall be mounted within 50 feet of outside areas containing flammable liquids and within 10 feet of any inside storage area for such materials.
- Listed Safety containers shall be used for the dispensing of flammable or combustible liquids.
- All spills of flammable or combustible liquids shall be cleaned up promptly.
- All flammable or combustible liquid storage tanks shall be adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying or atmosphere temperature changes.
- All flammable or combustible liquid storage tanks shall be equipped with emergency venting that will relieve excessive internal pressure caused by fire exposure.
- Flammable liquids shall be stored separately from other chemicals, especially reactive such as oxidizers.
- All containers containing a flammable or combustible liquid shall be labeled correctly and clearly.

Foot protection is guarding your toes, ankles, and feet from injury. Manufacturers now offer a wide variety of protective devices for hazards in many industries. Manufacturers also continually update materials and engineering of their products to insure protection from new hazards.

The Occupational Safety and Health Administration (OSHA) have outlined regulations that specify foot protection for the workplace. These regulations can be found in the Code of Federal Regulations, 29 CFR 1910.136.

Types of foot injuries:

Your feet are vulnerable to many types of skin diseases, cuts, punctures, burns, sprains, and fractures, but *sharp or heavy objects falling on the foot are the primary source of injury*. Other hazards include:

- Compression - the foot or toe is squeezed between two objects or rolled over
- Puncture - a sharp object, like a nail, breaks through the sole
- Electricity - a hazard where workers use power tools or electric equipment
- Slipping - surface hazards such as oil, water, or chemicals causing falls
- Chemicals - chemicals corrode ordinary safety soles and can harm your feet
- Extreme heat or cold - insulation or ventilation is required; depends on climate
- Wetness - hazard may be slipping, but also discomfort and even fungal infections in your feet are wet for long periods of time

Many facility operations or manufacturing processes involve a combination of hazards listed above.

Specific types of safety shoes:

- **Safety boots** - rubber or plastic safety boots offer protection against oil, water, acids, corrosives, and other industrial chemicals. They are also available with features like steel-toe caps, puncture resistant insoles, and metatarsal guards. Some rubber boots are made to be pulled over regular safety shoes.
- **Electric hazard shoes** - these are used in areas where employees work on live or potentially live electrical circuits. The toe box is insulated from the shoe so there is no exposed metal. These shoes are most effective when dry and in good repair.
- **Foundry shoes** - foundry shoes are used by welders and molders where there is a hazard from hot splashes of molten metal or flying sparks. Instead of laces they have elastic gores to hold the top of the shoe close to the ankle. This way they can be removed quickly if hot metal or sparks get inside the shoe.
- **Conductive shoes** - this type of protective footwear is used where there is a danger of shock from high voltage. They permit the static electricity that builds up in the body of the wearer to drain off harmlessly into a conductive grounded floor. These shoes must have rubber or cork heels, no exposed metal parts, and a connector (from calf to heel) to pass electricity to the ground.
- **Non-conductive shoes** - unlike conductive shoes, they do not require that the floor be conductive and grounded. They offer protection from the hazards of electric current in live circuits and equipment. Non-conductive shoes have rubber soles and no metal parts so they insulate feet from the ground.

- **Add-on foot protection** - Metatarsal guards and shoe covers can be attached to shoes for greater protection from falling objects. Strap-on wooden-soled sandals can be used for protection against the underfoot hazards of oils, acids, hot water, caustic or sharp objects.

Rubber spats protect feet and ankles against chemicals. Puncture-proof inserts made of steel can be slipped into shoes to protect against underfoot hazards. Strap-on cleats fastened to shoes provide greater protection.

Footwear should always be matched to the job and to the hazards that are encountered there. It is important during the selection and purchases of safety footwear that shoes and boots meet the requirements recommended by the American National Standards Institute (ANSI) or ASTM International (ASTM), according to the OSHA regulations. ANSI approved footwear will show ANSI Z41 on the label inside shoes or boots made until 2005. The most current "Standard Specification for Performance Requirements for Protective Footwear" is ASTM F-2413.

Forklifts can haul and dump tubs of material, carry containers of molten metal and transport pallets of heavy products. A forklift can be adapted for almost any lifting and transporting task. Forklifts can be dangerous to people and property when operated incorrectly. Most forklift accidents result from operator error, increasing the importance of operator training. Suggested requirements for drivers are: satisfactory vision, hearing and health to perform the job safely, a mature attitude, a good vehicle driving record, a positive safety attitude, and a completion of a forklift operator training course.

- Follow manufacturer's instructions. Do not modify or extend the forks unless approved by the manufacturer.
- When carrying a load drive up a ramp or grade. Never drive down when you are carrying a load. Never make a turn while your forklift is on the ramp. Lower the forks to keep the center of gravity low.
- Always use a proper dockboard when loading a vehicle from the dock. Keep the forklift away from the edge of the loading dock.
- Use dockboards with run-off protection where there is a hazard of running off the dockboard edge.
- Anchor portable dockboards to prevent the dockboard from moving out of a safe position.
- Make sure the parking brake is set and the wheels are chocked on the vehicle being loaded.
- Place the forks all the way under the load. Space forks apart so they fit the load being lifted. This will help to maintain proper balance and prevent the load from falling. Never lift a load that appears to be unstable. Use belts to secure the load onto the forks.
- Center the forks beneath the load being lifted. Lifting an un-centered load can cause the load to fall. Tilt the uprights slightly back when raising and carrying a load.
- Do not carry any riders unless the truck is specifically designed for them. Always keep hands and feet inside. Never speed or allow unauthorized persons to drive a forklift.
- Never smoke when refueling or when checking the battery of a forklift. Always turn off the engine when refueling.
- Use a properly secured safety platform when the truck is to be used as a lifting device.
- Never carry loads that obstruct your view.
- When the forklift is parked, fully lower the forks, put the controls in neutral, turn off the engine, set the parking brake and remove the key.
- When turning, reduce your speed and maneuver carefully.
- Stay a safe distance away from other forklifts. Never drive side by side.
- At blind corners, stop the forklift and sound the horn.
- Know where low clearances, pipes, sprinklers or low doorways are located.
- A complete inspection of the forklift should be made prior to any operation of the unit.

If you find anything wrong, report it to your supervisor or maintenance department.

Powered industrial truck (forklift) accidents cause approximately 100 fatalities and over 30,000 serious injuries annually. Many (estimated 20-25 percent) of these accidents are partially or wholly caused by inadequate training.

Employees should not be allowed to operate powered industrial trucks until they receive appropriate training. The training should be:

- Provided by a person with the knowledge, training, and experience to train operators and evaluate their competence.
- Specific to the type of powered industrial truck(s) the employee will operate.

Training Methods

The training should consist of a combination of:

- Formal instruction (e.g., lecture, discussion, interactive computer learning, written material)
- Practical training (demonstrations and exercises performed by the trainee). Trainees, however, must only operate powered industrial trucks when under direct supervision of the trainer, and where such activity does not endanger the trainee or other persons.
- Testing (evaluating the operators proficiency in operating forklifts in the workplace)

Training Program Content

Initial training program content should include:

- Truck related topics
- Work related topics

Truck Related Topics

- Operating instructions, warnings, and precautions
- Differences from automobile
- Controls and instrumentation
- Engine or motor operation
- Steering and maneuvering
- Visibility
- Fork and attachment adaptation, operation, use
- Vehicle capacity and stability
- Vehicle inspection and maintenance the operator will be required to perform
- Refueling/Charging/Recharging batteries
- Operating limitations
- Other instructions, etc.

Work Related Topics

- Surface conditions
- Composition and stability of loads
- Load manipulation, stacking, unstacking
- Pedestrian traffic
- Narrow aisles and restricted areas
- Operating in hazardous (classified) locations
- Operating on ramps and sloped surfaces
- Potentially hazardous environmental conditions
- Operating in closed environments or other areas where poor ventilation or maintenance could cause carbon monoxide or diesel exhaust build-up

Avoiding Duplicative Training

If an operator has previously received training in a topic listed above, and the training is appropriate to the truck and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the truck safely.

Refresher Training

Refresher training is required when:

- Employee is observed operating forklift in unsafe manner
- Accident or “near miss” occurs
- Evaluation indicates need for refresher training
- Different type of powered industrial truck introduced into workplace
- Physical conditions in the workplace change

An evaluation of each powered industrial truck operator’s performance must be performed:

- After initial operator training
- After refresher training, and
- At least once every three years

Operator Certification

OSHA standard 1910.178 requires that employers certify that operators of powered industrial trucks have been trained and their proficiency evaluated. Proof of certification must be provided, and must include:

- Name of the operator
- Date of training
- Date of evaluation
- Identify of person(s) performing the training or evaluation

- Adjust the work rest and keep it within 1/8 inch of the wheel. Keep the adjustable tongue on the top side of the grinder adjusted to within 1/4 inch of the wheel.
- Side guards should cover the spindle, nut, flange and 75% of the wheel diameter.
- Bench and pedestal grinders should be permanently mounted.
- Goggles and face shields should always be worn when grinding.
- The maximum RPM rating of each abrasive wheel should be compatible with the RPM rating of the grinder. Before abrasive wheels are mounted they should be visually inspected and ring tested.
- Fixed or permanently mounted grinders should be connected to their electrical supply system with metallic conduit or other permanent wiring method and each should have an individual on and off switch.
- Dust collectors and powered exhausts should be provided on grinders used in operations that produce large amounts of dust.
- Splash guards should be mounted on grinders that use coolant to prevent the coolant from reaching the employees.
- Maintain good housekeeping around grinders.



Type: _____ RPM: _____

Size: _____ Peripheral Speed: _____

Wheel Guard:	Securely Fastened	
	Properly Aligned	
Face Shield:	Clean	
Work Rest:	Within 1/8 inch of Wheel	
	Securely Clamped	
Frame:	Securely Mounted	
	No Vibration	
Wheel Face:	Well Lighted	
	Dressed Evenly	
Flanges:	Equal Size	
	Correct Diameter	
Speed:	Correct for Wheel Mounted	
Guard for Power Belt or Drive:	In Place	

Date: _____

Inspected By: _____ Department: _____

Sources of Injuries
Burns
Cuts
Electrical Shock Absorption of Chemicals Pinching
Crushing
Cold
Vibration
Repetitive Motion

- Analyze the work place for hazards to the hands. Look at each job and consider the possible hazards to the hands.
- Make sure all tools and machines are well maintained. Make sure all guards are in place.
- Employees must be properly trained in the use of the tools and machines in their area.
- Determine the proper protective equipment and make sure it is available to all employees who need it. Reinforce it by developing a company-wide hand protection policy.

Preventing Hand Injuries:

- Use protective gloves or other protection whenever necessary. There are gloves to protect against heat, cold, sharp objects, chemicals, electricity and a wide variety of other hazards.
- Gloves should not be worn around tools and machinery with rotating or moving parts, such as grinders, drills, lathes or milling machines.
- Watches, rings, bracelets, or other jewelry should be removed and loose fitting clothing avoided.
- Use tools and equipment only for the job they were designed for.
- The work place should be clean and well organized, and the tools and equipment well maintained.
- Tools and equipment should have their guards in place.

These are the suggested general guidelines for hoists and cranes. Your business may require additional safety guidelines to meet your specific safety needs.

The proper installation, operation, testing and maintenance of cranes and hoisting devices are a continuing responsibility of the owner/user. All hoists and cranes should be inspected according to OSHA and industry standards. This includes annual, as well as daily pre-use inspections. These should be documented, signed, and dated. Special attention should be paid to swivel bolts, load hooks, ropes, brakes, limit switches, and anti-two blocking devices.

A competent person trained in the applicable safety requirements must be present to oversee the operations.

- Only trained and certified (as necessary) employees are permitted to operate any hoisting device or crane. The crane operator will check to make sure the crane is level, stable, and fit for use before lifting operations.
- Special rules and regulations apply when using a hoist or crane for a personnel lift.
- The safe load capacity of each hoist should be clearly posted on the hoist body.
- All employees working with hoisting apparatus should be trained on safe lifting/rigging practices and operating rules. The operator is responsible for compliance to safe procedures and to maintaining safe operating conditions of the lifting equipment.
- Communicate in advance with site workers about the planned lift.
- A load should be picked up only when it is directly under the hoist.
- All hoists should be attached to their supports and have adequate design factor for the maximum loads to be hoisted.
- All lifting hooks will have operating safety latches.
- All slings will be inspected prior to use.
- Any modifications to equipment or attachments must be approved.
- Use appropriate tag lines to control the load.
- Each control cord should be nonconductive, unless they are grounded.
- Each control cord should be clearly marked “hoist” or “lower.”
- Equipment should be kept away from energized power lines.
- When using hand signals, standard hand signals should be posted on the equipment or in the vicinity of the hoisting operation. Other communication such as voice or audible must be clear, understandable, and reliable.

- Conduct all cooking operations in accordance with NFPA Standard No. 96, “Standard for the Installation of Equipment for the Removal of Smoke and Grease laden Vapors from Commercial Cooking Equipment”.
- Provide an exhaust removal system above all cooking surfaces.
- Construct the hood of steel No. 18MSG or stainless steel No. 20MSG.
- Construct the exhaust duct of steel No. 16MSG or stainless steel No. 18MSG.
- A clearance of at least 18 inches from all combustible material should be provided for the exhaust hood and duct.
- Provide and maintain proper grease filters in the exhaust hood.
- Approved fire extinguishing equipment should be provided for the exhaust hood, duct, and cooking surfaces.
- Provide a clearly identified means to manually activate the fire extinguishing system, in a path of exit or egress.
- The activation of the fire extinguishing system should automatically shut off all sources of fuel and heat to all cooking equipment.
- Inspect the fire extinguishing system and services at least every six months.
- Train employees on use of extinguishing system.
- Keep the fusible links and automatic sprinkler heads clean of grease at all times and replace at least annually.
- Clean the cooking surfaces, including the underside of the exhaust hood, daily.
- A 40B:C dry chemical fire extinguisher with sodium bicarbonate base should be located within 30 feet of the cooking surfaces.
- A 16 inch clearance should be provided between fryers and other cooking surfaces.
- Equip fryers with a separate high limit control to shut off fuel when the fat temperature reaches 475 degrees F.

A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs or cleats, on which a person may step in ascending or descending. There are variations called step ladder, single ladder, extension ladder, fixed ladder, job-made ladder, platform ladder, and sectional ladder. Ladders are constructed of wood, metal, aluminum or fiberglass.

Proper Selection

- Select a ladder of proper duty rating to support combined weight of user and materials.
- Ladders are available with duty ratings of 200, 225, 250, and 300 lbs.
- Select a ladder of proper length to safely reach the desired height.

Inspection Before Each Use

- Inspect thoroughly for missing or damaged components. Never use a damaged ladder and never make temporary repairs.
- Inspect thoroughly for loose fasteners. Make sure all working parts are in good working order. Lubricate if necessary.
- Clean ladder of all foreign material (wet paint, mud, snow, grease, oil).
- Destroy ladder if damaged, worn, or exposed to fire or chemicals. Bring back the ladder to the shop, tag for inspection; put a note on your daily report and management will make the decision of destruction.

Consider Before Each Use

- Metal ladders conduct electricity. Keep away from electrical circuits or wires.
- Consult manufacturer for use in chemical or other corrosive environments.
- Use ladder only as outlined in instructions. Ladders are designed for one person only.
- Do not use in high winds or during a storm.
- Keep shoes clean. Leather shoes should not be used.
- Never leave ladder set-up and unattended.

Proper Setup and Use

- Use help in setting up ladder if possible.
- Do not place on unstable, loose or slippery surfaces. Do not place in front of unlocked doors. Ladders are not intended to be used on scaffolds.
- Secure base section before raising ladder to upright position. Do not raise or lower with fly section extended.
- Extend and retract fly section only from the ground when no one is on the ladder.
- Do not overextend. A minimum overlap of section is required as follows:
 - Ladder size up to and including 32 feet — 3 foot overlap
 - Over 32 feet up to and including 36 feet — 4 foot overlap
 - Over 36 feet up to and including 48 feet — 5 foot overlap
 - Sizes over 48 feet — 6 foot overlap
- Position ladder against upper support surface. Make sure ladder does not lean to the side. Ladder must make a 75 degree angle with the ground.
- Erect ladder approximately 3 feet beyond upper support point.
- Check that top and bottom of ladder are properly supported. Make sure rung locks are engaged before climbing.
- Face ladder when climbing up or down. Maintain a firm grip. Use both hands in climbing.
- Keep body centered between side rails. **Do not over reach.** Get down and move ladder as needed.
- Fly section must have safety shoes if used as a single ladder.

Proper Care and Storage

- Hang ladder on racks at intervals of 6 feet for support.
- Never paint a wooden ladder. Treat with wood preservative.
- Protect wooden ladder from exposure to the elements, but allow good ventilation. Keep away from heat and moisture.

- Guards are put on machines for one purpose ... **to protect!**
- Machines without guards or suitable safety devices in place must not be operated.
- Only authorized personnel should remove or adjust guards or safety devices.
- Be sure the main power switch for the machine is locked and tagged before removing the guard or safety devices.
- Guards isolate hazards from workers. Safety devices also save fingers, limbs and lives. They protect from distractions, impatience and accidents caused by inattention.
- A guard or safety device not secured or functioning improperly can create an additional hazard. Inspect guards or safety devices regularly and keep them in good repair.
- Manufacturer installed guards and safety devices may not be enough. Review the working purpose of your machine. If need be, install additional guards or safety devices at point-of-operations at other hazardous areas.
- Do not bypass guards or safety devices. Trying to speed up production and save time only increases the chance for serious injury. Guard or safety devices are a vital part of any safe environment.

- Aisles and doorways should provide adequate clearances.
- Aisles and doorways should be designated, permanently marked and kept clear to allow unhindered passage.
- Hand operated and motorized vehicles should be adequate for the load and operation.
- All dock plates and loading ramps should be constructed and maintained with sufficient strength to support the required load.
- Maintain hand operated and motorized vehicles in a safe operating condition.
- Pallets should be of the proper size and strength to the imposed load.
- Shelving should be maintained and of proper strength to support the required load.
- Hooks with safety latches should be used when hoisting materials.
- Securing chains, ropes and slings should be adequate to support the required load.
- Keep floors clean, dry and free of oil.
- Practice proper lifting techniques.
- Use hand operated or motorized vehicles to move heavy loads.
- Employees should be trained in the proper operation of material handling equipment.

- Each office should have fire extinguishing equipment available and a training program on how to use extinguishers.
- An evacuation plan should be in place with periodic fire drills and training.
- Inspect the work place using an inspection form.
- Exit signs should be lighted and clearly visible and emergency lighting should be installed.
- Aisles should be kept clear to allow for easy travel and exit in the event of an emergency.
- Doors to stairwells and to exits should not be blocked. These areas should be clearly marked.
- Store inks, solvents and any other flammable or combustible liquid properly and use in small amounts only.
- Trash and rubbish should be properly stored and discarded daily.
- Machines should be grounded and the use of extension cords should be avoided.
- Non-carpeted walking surfaces should be swept and mopped frequently to prevent grease and dirt buildup. Carpeted floors should be vacuumed regularly.
- Spills should be cleaned immediately.
- Use signs or barriers to warn of wet floors.
- Loads of 40 pounds or more should not be lifted manually. Proper lifting techniques should be utilized.
- Chairs should never be used in place of a ladder.
- Chairs should be stable and have at least a 5 point base.
- Adjustable seating should be used for different builds of people and for different tasks.
- Armrests for chairs should be low and short enough to fit the chair under the work surface and allow the user to get close enough to the work surface to use the chair backrest.
- Thin keyboards should be used to minimize wrist deviation or keyboard palm rests should be used.
- A short rest break should be encouraged after each hour of video display work is performed.
- A physician approved first aid kit should be available for emergency use.
- Work areas should be well illuminated; however, glare should be reduced by lowering the lighting.
- Window glare can be reduced by providing drapes or blinds.
- Items stored on racks and shelves should not be overhanging or protruding so as to cause personal injury.
- Available heating, air conditioning and ventilation systems should be kept in proper working order.
- Do not leave file drawers open and unattended.

- The correct tool should be utilized for the job and used in a correct manner.
- If a job requires excessive force or bending of the wrist creating stress, a powered tool or a differently shaped tool should be used.
- Tools should be kept in good working condition. Damaged, worn or defective tools can cause injuries and should not be used.
- Keep tools in a safe place. Do not leave tools on the floor or above work areas.
- Sharpened tools should not be carried in pockets or left in tool boxes with cutting edges exposed.
- Appropriate personal protective equipment, such as safety goggles and gloves, should be worn to protect against hazards that may be encountered while using hand tools.
- Keep impact tools, such as chisels and punches, free of mushroomed heads.
- Keep wooden handles free of splinters or cracks, and assure a tight connection between the tool head and the handle.

- Electric power operated tools should either be approved double insulated, be properly grounded, or used with ground fault circuit interrupters.
- Power tools should not be used until proper instruction has been given and authorization given by a supervisor.
- Guards on machinery and equipment should not be removed without authorization.
- The power tool should be off and motion stopped before the tool is set down.
- Disconnect the tool from power source before changing bits or blades, or attempting any repair or adjustment. Never leave a running tool unattended.
- Inspect electrical extension cords and other wiring to be certain they are properly insulated and grounded. Do not use frayed or damaged cords.
- A power tool must never be used with a safety guard removed.
- All fixed power driven woodworking tools should be provided with a disconnect switch that can either be locked or tagged in the off position.
- Only trained employees will be allowed to operate power actuated tools. All power actuated tools will be tested daily before use and defects discovered before and during use will be corrected. Tools will not be loaded until immediately before use.
- Never operate power actuated tools in, near or around water.

- Whenever possible, avoid backing situations. Find a parking spot that will allow you to leave without backing.
- Avoid blocking the rearward, inside view with equipment and stock. Does the cargo safety cage block the view? How high is the load stacked?
- Increase the size of the side mirrors to gain a larger, clearer picture of hazards behind the vehicle.
- Install a wide-view, convex mirror on the upper rear driver's side of the vehicle.
- Drivers should walk completely around the vehicle, looking for dangers. Watch for overhangs too.
- When preparing to back, roll down the window and turn off the radio. The driver should check all mirrors and look over both shoulders before starting to back. Sound the horn twice to provide further warning for pedestrians. Back up s-l-o-w-l-y!
- If a second person is available, use this person to guide the backing vehicle. The guide should stand at the left rear driver's side of the vehicle (if room) and use full motion arm signals ... not hand signals ... to assist the driver. If the driver loses visual contact of the ground guide, backing should stop at once.
- Add dashboard stickers highlighting, **"Look Before You Back"**.
- Provide paycheck stuffers and posters covering safe driving tips.
- Add backup alarms to vehicles.
- Hold safety meetings covering safe/unsafe driving techniques and driving rules.
- Provide orange traffic cones to be set out behind the vehicle, if backing will be required upon leaving.
- Add a reward/recognition program for safe drivers.
- Set up an obstacle driving course in a parking lot and hold a "driving rodeo" with score sheets and trophies for the best drivers.
- If a driver has trouble backing, have his/her eyes tested for depth perception.

Most back injuries are the result of improper lifting techniques. The worst lifting situations occur when the body is extended over the load. Keep the back straight to shift the weight of the load being lifted onto powerful leg muscles, thus reducing the lever effect caused when the body is extended over the load.

- Keep in good physical condition. Difficult lifting tasks should not be attempted if not accustomed to vigorous exercise.
- Think before lifting. Make certain there is adequate space and clear aisle ways. Also, plan for a place to set the load down.
- Maintain a good grip on the load by using the palms of the hands.
- Lift with the load close to the body. The closer the load is to the spine, the less force it exerts on the back. This is one of the most important rules in lifting.
- Test the load before handling it. If it appears to be too heavy or bulky, get help or some type of mechanical aid.
- Place the feet close to the load. The feet should be far enough apart for stability, have one foot slightly ahead of the other and pointed in the direction of movement.
- Tighten stomach muscles. Abdominal muscles support the spine when lifting, offsetting the force it exerts on the back.
- Lift with your legs. The stronger leg muscles are better suited for lifting than the weaker back muscles.
- Keep the back straight, head up whether lifting or putting down the load. Avoid twisting, it can cause injury.

Think Before You Lift

Mental Lifting - Lift the load twice, by first lifting the load mentally.

Find a Better Way - Mechanical help can be used to avoid heavy loads, twisting motions, repetitive motions, bulky loads, vertical lifting and uneven surfaces. Pushcarts, conveyors, two wheeled carts, hoists, or forklifts are good examples of material handling devices that can be used.

Push, Don't Pull - Twice as much can be pushed than pulled, while running less risk of back injury.

Watch Your Footing - Wear proper footwear, take small steps, go slowly and clear a proper pathway free from tripping hazards.

Hand Safety When Lifting

- Inspect materials for slivers, jagged or sharp edges, burrs, and rough or slippery surfaces.
- Grasp the object with a firm grip.
- Keep fingers away from pinch and shear points, especially when setting down materials.
- When handling pipe, lumber or other long objects, keep hands away from the ends to help prevent them from being pinched.
- Wipe off greasy, wet or dirty objects before trying to handle them.
- Keep hands free from oil and grease.

- Scaffolds, by their very nature, present a danger of falling or being struck by something falling. Because this possibility exists, certain safety precautions must be kept in mind when working on or around scaffolds. Follow OSHA standards in 29 CFR 1926 Subpart L.
- When erecting a scaffold be sure it is capable of supporting at least four times the maximum load, including the weight of materials, workers and the scaffold itself. The height must not exceed four times the minimum base dimensions as well. Footings should be sound and rigid.
- Check the scaffolding for damage prior to use. Damaged scaffolding should not be used.
- Planking should be at least 2x10's, of scaffold grade, placed together to help keep materials and tools from falling. Choose planks that are straight grained and free of shakes, large or loose knots and other defects. Extend the planks beyond the center line of supports from 6 to 12 inches, and cleat or otherwise fasten so the planking stays in place.
- Always use a safe means of access when climbing a scaffold, such as a fixed or portable ladder, ramp, runway or stairway. Climbing on cross braces is never acceptable.
- While using a mobile scaffold, be certain to lock the wheels before beginning use. Do not ride or allow anyone to ride on scaffolding while it is being moved, unless the scaffolding is constructed of a specific alloy designed for occupied horizontal travel. All material and equipment should be removed or secured before moving the scaffold. Do not try to move a rolling scaffold without sufficient help. Be aware of holes in floors and overhead obstructions.
- While working on a scaffold, do not allow tools and materials to accumulate in a manner that creates a hazard.
- While working on a scaffold 10 feet or more above the ground, it must be equipped with guardrails including a toe board. Wear a safety belt and life line if a railing is impractical. When working near overhead electrical power lines, a minimum of 10 feet of clearance must be maintained. (Clearance will increase depending on voltage)
- Always wear hard hats and other appropriate personal protective equipment.

Scissors lifts are work platforms and are different from aerial lifts. Assess the worksite to identify possible hazards in order to select the appropriate equipment for the task.

Only trained and authorized workers are allowed to use scissor lifts. Training includes:

- The manufacturer's instructions for operating the scissor lift vertically and while in transit.
- How to handle materials on the scissor lift, including weight limits.
- Other worksite hazards workers may encounter when working on a scissor lift (e.g., contact with electrical wires).
- Reporting any equipment defects or maintenance needs.

Fall Protection

- Check to see that a guardrails are secured in place before working on the scissor lift.
- Only stand on the work platform; never stand on the guardrails.
- Keep work within easy reach to avoid leaning away from the scissor lift.

Stabilize the Lift

- Use the scissor lift outside only when weather conditions are good. Scissor lifts rated for outdoor use are generally limited to wind speeds below 28 miles per hour. CAUTION: Wind can make extended scissors lifts unstable!
- Follow the manufacturer's instructions for safe movement — this usually rules out moving the lift while in an elevated position.
- Isolate the scissor lift or have traffic control measures so other equipment cannot contact the scissor lift.
- Have a firm, level surface, away from hazards that can cause instability (e.g., drop-offs, holes, slopes, bumps, ground obstructions, or debris).
- Ensure that safety systems are maintained and not bypassed.
- Never allow the weight on the work platform to exceed the manufacturer's load rating.
- Never allow equipment other than the scissor mechanism to be used to raise the work platform (e.g., using a forklift to lift the work platform).
- Keep the lift from being struck by other moving equipment on the worksite.

Positioning the Lift

To help avoid crushing or electrocution hazards, be watchful when:

- A moving scissor lift is near a fixed object.
- A moving vehicle and the scissor lift are operating closely.
- The scissor lift passes under a fixed object, such as a door frame or a support beam.
- The scissor lift is used around near energized power lines.

To help ensure that scissor lifts are safely positioned:

- Use ground guides when operating or moving the scissor lift.
- Select work locations that do not approach electrical power sources (e.g., power lines, transformers) by at least 10 feet and that do not pose other overhead hazards (e.g., other utilities, branches, overhangs, etc.).
- If the job task requires work near an electrical source, ensure that the worker is qualified and has received the required electrical training.

Maintaining Scissor Lifts

- Follow the manufacturer's instructions.
- Test and inspect controls and components before each use.
- Ensure that guardrail systems are in good working condition.
- Verify that brakes once set will hold the scissor lift in position.
- Report any needed repairs.

- Protect building openings, docks, yards, and alleys with quality lighting.
- Provide interior lighting over valuable merchandise and over the safe.
- Control all security lighting by a timer or photo-electric cell.
- All outside doors should have double cylinder dead bolt locks.
- Utilize the bar extension lock on overhead doors, along with a case hardened padlock.
- Door hinges should not be located on outside of entrance doors, or be secured in such a manner that pins cannot be removed.
- Windows should be equipped with locks, bars or wire mesh. Protect window bars and wire mesh from outside tampering.
- Security fencing should be provided for the entire open lot. Try to make it a “man proof” type of fencing. Maintain the fence and check it regularly. Fence gates should have padlocks.
- Develop a written procedure for securing the building and yard at the end of the business day.
- Metal locking cross bars can also be added on outside doors to provide extra security.
- For life safety purposes, provide single cylinder locks, panic bars or alarmed releasing bars on outside doors.

Slips, trips and falls can happen to anyone, anytime, anywhere. The resulting injuries can be severe. While there is no single method to prevent all slips and falls, we should be deliberate to check the walking areas for conditions that may create slip, trip or fall hazards. The “Walking Area Check Log” is used to note periodic observations and actions taken in areas where members of the public are invited.

The most common causes of slips and falls include: unsafe use of ladders, jumping on or off lift gates, slippery surfaces, inappropriate footwear, poor lighting, and obstacles on walkways, inattention and haste.

- Mop floor in area of spills immediately and post a sign stating **“Wet Floor”**. Never leave spills unattended.
- Follow the flooring surface manufacturer instructions for cleaning and treatment.
- An oil absorbing material should be used to control small oil spills in the work place.
- During inclement weather keep rugs, mats, and floors dry. Snow and ice should be removed from all sidewalks, drives and access points used by the general public or employees. **Post wet floor signs.**
- Keep all floors, stairs, ladders, walkways, sidewalks and driveways in good repair.
- Be aware that electrical cords cause many tripping injuries.
- Good housekeeping is a must in accident prevention.
- Stairs, aisles and walkways should be clearly marked and kept free of any material.
- Look at each job and work area to consider the possible hazards.
- Special precautions such as the use of guardrails, a safety net, or personal fall protection systems is needed for when working at heights four feet above a lower level or on a roof.

Common Hazards

- Slippery areas
- Blocked walkways and stairs
- Ladders
- Electrical cords
- Poor lighting
- Housekeeping conditions

Preventative Measures

- Proper footwear
- Warning signs
- Non-skid surface
- Correct use of tools and ladders
- Floor mats
- Proper lighting

A multi-piece wheel is a vehicle wheel consisting of two or more parts, one of which is a side or locking ring holding the tire on the wheel by interlocking the components when the tire is inflated.

The wheel components can separate and release from the rim wheel with violent force. The severity is related not only to the air pressure, but also to the air volume. Accidents occur when the pressurized air contained in the tire is suddenly released, either by the bead breaking or by the bead slipping over the rim flange.

- The employees must be provided with training concerning the service aspects of split rims. This should include the contents of the OSHA Standard and information prepared by the U.S. Department of Transportation.
- Employees must demonstrate and maintain the ability to:
 - Demount tires, including deflation.
 - Inspect and identify rim wheel components.
 - Mount tires, including inflating them with in a tire cage.
 - Handle rim wheels.
 - Stand outside the trajectory during inflation.
 - Recognize defects in wheels and inflation cages.
 - Follow established safety guidelines.
- Provide and use adequate material handling equipment.
- Use automatic inflation gauge and clip-on chucks should be provided.
- A multi-piece rim/wheel matching chart should be posted in the service area for ready reference.

- Conduct all spray painting operations according to NFPA Standard No. 33 “Standard for Spray Applications Using Flammable and Combustible Materials.”
- Conduct all spray painting operations in a factory built, approved spray painting booth.
- Construct the walls, floors, ceiling and doorways of steel concrete, masonry or other noncombustible material.
- All electrical wiring and equipment should be approved for Class I, Division 1 hazardous locations.
- No open flame or spark producing equipment should be located within the spray area.
- Heat should be ducted into the booth, with no heat sources inside the booth.
- Keep only one days supply of flammable or combustible liquids stored inside the booth.
- Mechanical ventilation, adequate to remove flammable or combustible vapors, mists, residues, dusts or deposits to a safe location, should be provided and must be in operation while spray painting.
- The mechanical ventilation exhaust motor should be located outside the path of escaping vapors.
- The mechanical ventilation system should also be located within 18 inches of floor level.
- Replace filters and clean the ventilation system frequently. Remove overspray from the spray area and mechanical ventilation system on a regular basis.
- Maintain good housekeeping practices at all times.
- Personal protective equipment should be worn by all employees engaged in spray painting operations.
- Know and understand the SDS available to you.
- **“No Smoking”** signs shall be posted in the spray painting area.

Guidelines are the suggested for trenching and excavating. Additional safety guidelines may be required to meet individual specific safety needs.

Utility installations, such as sewer, telephone, fuel, electric, water, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation. This can be accomplished by contacting local or state “one-call” system before digging.

- When the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.
- Each employee in an excavation shall be protected from cave-ins by an adequate protective system:
 - 1) Any excavation more than five feet deep, slope the sides no more steeply than the proper *angle of repose* or soil conditions;
 - 2) Proper shoring; and/or
 - 3) Trench box, as recommended by OSHA.

(*angle of repose* — The greatest angle above the horizontal at which a material will lie without sliding. This varies for different soil conditions.)

- Keep excavated materials a minimum of two feet from the edge of the trench.
- In trenches more than four feet deep, locate adequate means of exit, such as ladders, or steps, so they can be reached in no more than 25 feet of travel from anywhere in the trench. Where atmospheric hazards could reasonably be expected, test for low oxygen and hazardous or toxic gases.
- Keep heavy loads of all kinds as far from the trench as possible.
- Do not allow water, rain, ground water, surface water to accumulate in a trench. Water reduces soil stability.
- Daily inspections of excavations, the adjacent areas and protective systems shall be made by a competent person prior to the start of work and as needed throughout the shift. If evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions are found, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.
- Never touch a piece of excavation machinery while it is in operation.
- Always stand in view of the machine operator, and out of the way. Never stand at the edge of the excavation.
- In locations where oxygen deficiency or gaseous conditions are possible, the air in excavations shall be tested.
- Unattended excavations must be lighted and barricaded. Keep non-workers away from the trench, particularly at night.
- When excavating near traffic areas safety vests shall be worn by all employees involved.
- Full bodied safety harness will be utilized for extreme conditions.
- Head protection shall be required of everyone at the job site.

- Wear proper eye safety protection during welding and cutting operations.
- Ventilation should be provided whenever welding, cutting or heating is being performed.
- Arc welding and cutting operations will be shielded by noncombustible or flame-proof shields to protect employees from direct rays.
- A suitable fire extinguisher should be readily available when welding, cutting or heating operations are being conducted.
- Always clear the area below cutting or welding operations so hot slag will not drop on hoses, cables, or employees.
- When electrode holders are left unattended, electrodes should be removed and the holder should be placed or protected so it cannot make electrical contact. All arc welding and cutting cables should be completely insulated.
- Always wear required eye protection to guard against slag while chipping, grinding and dressing of welds. Always wear a welding hood to protect eyes from flash burn.
- Fuel gas and oxygen hoses must be easily distinguishable and not interchangeable. Inspect hoses daily and repair or replace if defective.
- Always store cylinders properly on a welding cart or secured to a wall with a chain.
- All tank valves should be closed when equipment is not in use.
- Do not cut or weld around gasoline tanks or attempt to weld or cut a container that has stored a flammable or combustible liquid.
- Welding or cutting equipment should not be operated unless proper training has been provided.

It is important to support the Hot Work Policy of any facility where work is done. These facilities may require the use of a Hot Work Permit system where a permit is issued for a specific hot operation to be conducted during a set period of time. This is a method of work authorization that includes fire safety checks.

Hot work is any operation producing open flames, heat, or sparks. Some examples of hot work are cutting, grinding, brazing, welding, soldering, thawing pipe, and torch-applied roofing. Hot work introduces a potential ignition source to combustible materials. Failure to follow a hot work policy can contribute to an extreme fire loss.

Hot Work Permits are approved by the local facility manager. Permits are given to the person performing the work and usually only approved for 24 hours. General permits are not issued. Each specific job will be issued a separate permit. Once issued, the permit should be posted in a conspicuous location near the work site so it may be observed during welding and cutting operations.

The authorization should not be given for hot work operations until all safety precautions and requirements listed on the permit are met. Under no circumstances is a permit to be issued sight unseen. The local facility manager must inspect the area where hot work operations will be performed before a hot work permit tag is issued. Precautions to be followed before, during, and after hot work operations are listed in the following guidelines.

Fire Prevention and Protection

- Get a “Hot Work Permit” filled out by the facility manager before doing any hot work.
- If the object to be welded, cut, or soldered cannot be moved, all movable fire hazards in the vicinity should be taken to a safe place away.
- If the object to be welded or cut cannot be moved, and all the fire hazards cannot be removed, then guards must be used to confine the heat, sparks, and slag for protecting the immovable fire hazards. Only approved welding blankets should be used to cover combustible materials.
- If hot work operations are conducted in a building protected by automatic sprinklers, verify the sprinkler system is in-service before conducting any hot work operations.
- A fire watch must be continuously present during the entire hot work activity and 30 minutes after completion. In addition, a follow up check of the work area should be done every 30 minutes for 4 hours after the welding and cutting are completed where moderate combustion may occur.
- If the requirements listed above cannot be followed, welding and cutting should not be performed.

The use of permits may be discretionary in certain situations. Permits are required when a recognized fire hazard exists or there is a need for special precautions. When “hot work” is routine such as a minor soldering required in day to day maintenance, or plumbing, and there is no unusual fire hazard, then a permit may not be required. Even when a permit may not be required, persons undertaking any “hot work” are responsible for fire safety precautions appropriate to the situation.

Date: _____ Time: _____

Building: _____

Work to be Done: _____

Special Precautions: _____

Fire Watch Required? Yes No

Fire Safety Supervisor: _____

The location where this work is to be done has been examined, necessary precautions taken, and permission granted for this work (see below).

Permit Expires: _____ Time: _____

Work Authorized By: (Sign) _____

Time Started: _____ Completed: _____

Final Check

Work area and all adjacent areas to which sparks and heat might have spread [including floors above and below and on opposite side of wall(s)] were inspected 30 minutes after the work was completed and were found fire-safe.

(Sign) _____ Time: _____ Date: _____

Before approving any hot work permit the Fire Safety Supervisor will inspect the work area and confirm that precautions have been taken to prevent fire in accordance with NFPA 51B.

Precautions

- Sprinkler system in service
- Hot work equipment in good repair

Within 35 Feet of Work

- Floors swept clean of combustibles
- Combustible floors wet down, covered with damp sand, metal, or other shields
- All wall and floor openings covered
- Covers suspended beneath work to collect sparks

Work on Walls or Ceilings

- Construction is non-combustible and without combustible covering(s)
- Combustibles moved away from opposite side of wall

Work on Enclosed Equipment (Tanks, containers, ducts, dust collectors, etc.)

- Equipment cleaned of all combustibles
- Containers purged of flammable vapors

Fire Watch

- To be provided during and 30 minutes after operation
- Supplied with a fully charged and operable fire extinguisher
- Trained in use of equipment and in sounding fire alarm

Final Check

To be made 30 minutes after completion of any operation unless Fire Watch is provided

On average, 20 employees are murdered, and 18,000 assaulted, while working each week in the United States. Experience shows 75 percent of workplace homicides occur during robberies. Almost 50 percent occur in retail trade and service industries.

Some Risk Factors for Workplace Violence

The potential for workplace-related violence is usually greater if employee's jobs involve:

- Face to face contact with the public
- Exchange of money with the public
- Delivery of passengers, goods, or services
- Working alone or in small numbers
- Working late at night or during early morning hours
- Working in high-crime areas
- Working with unstable or volatile persons
- Guarding valuable property or possessions

Reducing the Potential for Workplace Violence

The following may help reduce the potential for robberies or other acts of workplace violence:

- Establish a violence prevention program for your company. It should include:
 - ✓ Written statement expressing corporate policy of zero tolerance for threats, harassment or acts of violence (all employees should receive a copy)
 - ✓ Screening applicants for jobs (check references, work record of prospective employees)
 - ✓ Fair and prompt procedures for reporting and dealing with grievances
 - ✓ Procedures for employees to report threats, harassment, acts of violence or "unusual" behavior. It is desirable to also provide a means for confidential (anonymous) reporting of such incidents.
 - ✓ Mechanism for assessing and responding to threats or acts of violence (examples: verbal confrontation between employees, workplace entered by unauthorized person, employee brandishing weapon in workplace)
 - ✓ Procedures for documenting threats, acts of violence
 - ✓ Written procedures for disciplinary action, termination of employees who threaten or harass other employees, or commit acts of workplace violence
 - ✓ Training for new employees, refresher training as needed (corporate workplace violence policy, procedure for reporting threats, what to do, or not do, if a robbery occurs, conflict avoidance/resolution, other pertinent topics)

- Implement cash control procedures (keep minimal amount of cash in registers during evenings and late night hours, use drop safes or other devices to limit readily available cash, post signs informing public amount only limited amount of cash is available and that employees do not have keys to safes)
- Adopt work practices that limit opportunities for robbery or other acts of violence (admit no one to building after closing time, no removal of trash from building after dark, do make bank deposits at same time daily, etc.)
- Physically separate workers from customers (counters, bullet-resistant barriers or enclosures)
- Control non-employee access to workplace (visitor sign-in policies, use of employee identification badges, car-key access systems)
- Monitor workplace and parking lots for presence of unauthorized persons, “unusual” activity (closed circuit cameras, two-way mirrors, other security devices)
- Provide good lighting inside and outside building
- Provide a clear, direct line of view through windows into stores (not obstructed by signs, displays, merchandise)
- Escort employees to/from parking lots
- Provide security guards