

# THE ILLUSTRATED FACILITY SAFETY GUIDE

featuring  
Facility Frank



## HEAD PROTECTION

Things can get dangerous out there on the jobsite so workers need to keep their heads on straight. To make sure that they literally keep their heads, OSHA standards require the use of hard hats whenever there may be a risk of head injury. Additional requirements state that hard hat suspensions must be replaced annually, according to the manufacturer's specifications.

- ❖ Common hazards include falls and objects falling from above but some hard hats may also offer protection against electric shock. These hats are rated C, G, or E.
- ❖ Hard hats come in several different styles such as front brim, full brim and cowboy or a combination system that allows for the addition of a face shield or earmuffs.

## EYE & FACE PROTECTION

Keeping eyes and faces safe is important so OSHA has standards in place which require the use of eye and face protection when workers are exposed to certain hazards. In approximately 60% of all reported eye injury cases, the injured person was not wearing any eye protection. Even the most basic protective measures can go a long way:

- ❖ Safety glasses come with a variety of additional features like magnification, special lens for clearer vision in certain environments, and built-in or attached lighting.
- ❖ Face shields and goggles vary depending on the hazard and may protect against chemicals, impact, heat, arc flash, and many other hazards to the facial region. They can be attached to headgear or directly to a hard hat with the use of brackets.

## HEARING PROTECTION

Besides interfering with communication, high noise levels can cause temporary or permanent hearing loss. The risks don't end there either: hearing loss has been linked to Alzheimer's disease and dementia. OSHA's permitted exposure limit is 90 dBA for all workers for an 8 hour day. When noise hazards cannot be eliminated, providing properly rated hearing protection is the next best thing:

- ❖ Ear Plugs are small, convenient, and more comfortable for long term wear. Some find that they irritate the ear canal though and they may also be difficult to insert and remove.
- ❖ Earmuffs are designed to have a one size fits most capability. They are heavier and bulkier than earplugs though, and the use of glasses may break the seal between the skin and ear, decreasing protection.

## ARC RATED/ FR CLOTHING

Save your skin from arc flash and other fire hazards. Arc rated and flame resistant clothing is designed to resist ignition and insulate from heat. OSHA requirements also state that workers should be knowledgeable about the potential risks of electrical arcs and the flames that they may produce.

- ❖ All garments should be properly labeled so check NFPA 70E to make sure that you have the right combination of PPE for proper protection.
- ❖ Flame resistant coveralls are often made of a cotton-like material and are to be worn as a secondary level of protection over a primary thermal protection

## HAND PROTECTION

OSHA requires the use of gloves when hands are exposed to hazards which could lead to lacerations, abrasions, punctures, chemical burns and thermal burns. The different fibers and coatings used in gloves provide different levels of protection so the type of gloves needed depends on the type of work being done. Types of gloves which contractors may use include:

- ❖ Rubber insulated gloves which protect against energizing conductors
- ❖ Cut- and abrasion-resistant gloves and those which also protect against hot and cold conditions

## FOOT PROTECTION

Everyone knows how bad a stubbed toe hurts so just think that facility workers need to protect their toes and feet from much worse. OSHA requires preventative measures such as foot protection to guard against hazards like falling objects, punctures and electrical hazards.

- ❖ Steel-toed safety shoes are impact and compression resistant, offering protection from falling objects.
- ❖ Outer soles can be rated for puncture-resistance, electrical hazard, static-dissipation, and more.

## RESPIRATORY

A respirator is a protective device covering the nose, mouth or entire face to guard against hazardous atmospheres. Respirators keep you safe from harmful dusts, smokes, fumes and gases that may be present at the workplace. To ensure maximum protection, all NIOSH-approved respirators require an annual fit test.

- ❖ ½ Mask respirator: the low profile construction covers the nose and mouth and allows for a wide field of vision plus room for protective eyewear
- ❖ Full face respirator: covers the entire face, including the eyes, nose and mouth

## GAS DETECTION

A gas detector is a device used in the workplace to detect gas leaks, explosive atmospheres and oxygen deficiencies, which would otherwise not be smelled by humans. Without the use of OSHA-required gas detectors, workers' health and lives could be at risk.

- ❖ Gas detectors may be fixed-position, wall-mounted models used to monitor the air in a specific place.
- ❖ Portable gas detectors may monitor for combustible gas, carbon monoxide, hydrogen sulphide, oxygen, and other gases in confined spaces or other locations where fixed-mounted detectors would not be suitable.

## ERGONOMICS

Ergonomics means tailoring a job around the person doing it. Tasks involving heavy lifting, bending, reaching, or repetitive motions may put workers at risk for musculoskeletal disorders. Ergonomic aids and adjustments help to prevent such injuries by helping to reduce muscle fatigue.

- ❖ An elastic back brace provides firm support and oftentimes includes a two-stage closure system that adjusts workers' desired tension level
- ❖ Wide cap knee pads offer protection and flexibility and may also feature soft foam padding for extra comfort
- ❖ Ergonomic mats offer cushioned support for workers who stand for extended periods of time, helping to ease fatigue and pain in the feet, legs, and lower back. There are different types available, depending on the intended environment.

## FALL PROTECTION

Fall protection is any planned backup system to manage or eliminate a possible injury caused by losing your balance at height in the workplace. OSHA requires employers to ensure that environments are free of known dangers, provide required PPE at no cost to workers and train workers about job hazards.

- ❖ Fall protection includes safety harnesses and lines, safety nets, stair railings, hand rails, guardrails and toe-boards. To ensure optimum performance and safety, the equipment should be inspected daily by the authorized user as well as annually by a competent person.
- ❖ When ladders are in use, workers must maintain 3-point contact with the ladder: either two feet and one hand, or both hands and one foot.

## EMERGENCY EYE WASH / SHOWERS

Even with the best precautions, accidents can still happen and it is important to have wash areas for workers to clean their eyes or skin from harmful irritants. Emergency stations should be present in areas where hazardous substances are in use or present.

- ❖ Portable eye wash stations are easy and convenient to install in any facility and have several mounting options for ease of use and proximity of hazards.
- ❖ Plumbed shower stations are important for emergency decontamination should a worker come into contact with dangerous irritants.

## SOAP & SKIN CARE

Hygiene is important in any situation. Providing proper hygiene care for workers improves the sanitation and productivity of the facility and most importantly safeguards the health of workers.

- ❖ Barrier or pre-work creams form a protective layer on the skin and offer a first line of defense against contaminants which may cause skin irritation. Even when using barrier creams, gloves must still be worn to ensure maximum skin protection.
- ❖ Alcohol based hand sanitizers and wipes are an extra defense against germs that may cause illness. Taking precautions to minimize exposure can help reduce absenteeism, leading to increased productivity.

## HI-VIS APPAREL

This is PPE worn so that workers may be visible to other individuals in low light and dark conditions. High-visibility apparel comes in the form of clothing, headwear and gloves.

- ❖ High-visibility utility gloves provide visibility and durability
- ❖ High-visibility thermal jackets adapt to weather while also providing visibility

## DISPOSABLE CLOTHING

Often referred to as "paper suits" though not actually made of paper, these are the kind of suits that never go out of style. When workers are exposed to different types of chemicals, disposable clothing is needed to protect against skin damage.

- ❖ Coveralls with an attached hood and boots can provide a head-to-toe barrier against hazardous and non-hazardous liquids, dusts and particles.

## HEAT STRESS

Working in hot environments can be brutal. Workers are at risk for heat rash, heat cramps, heat exhaustion or heat stroke so it's important to help them keep their cool! A variety of PPE exists to help workers beat the heat:

- ❖ Cooling towels: cool through rapid evaporation and are activated by dousing in water.
- ❖ Sports drinks: replace electrolytes and help to regulate body temperature.

## MIRRORS

Mirrors are especially important in industrial settings to reduce blind spots and increase visibility and avoid collisions.

- ❖ Dome mirrors are ideal for being able to see oncoming traffic in heavy traffic areas up to 360°
- ❖ Forklift mirrors can be placed anywhere on truck to increase driver and pedestrian visibility from the rear and sides.

## FORKLIFT SAFETY

Incidents involving forklifts are common and often lead to injury or death so it's important to take the proper safety precautions necessary to minimize that risk.

- ❖ Barriers such as dock safety gates and proper edge guarding help to minimize forklift drive-off hazards
- ❖ Warning signs placed in areas with obstructed views can alert pedestrians of forklift use.
- ❖ Warning lights are effective at reducing the chance of injury when visibility is not optimal by alerting pedestrians with bright lights when a forklift is approaching.

## FIRST AID / AED

Preparedness is paramount when confronted with workplace injuries. OSHA requires that in the absence of an infirmary, clinic or hospital in close proximity to the workplace, a person or multiple people should be trained to give first aid with readily available supplies.

- ❖ First aid kits should include compresses, bandages, antiseptic, burn treatment, medical grade latex gloves, sterile pads and a triangular bandage. Optional items may include, eye wash, cold packs and a CPR barrier device among others.
- ❖ AEDs or Automated External Defibrillators are life saving devices used in the event of cardiac arrest. The NSC estimates that AEDs could save around 40,000 lives per year if usage were more widespread.

## HAZARDOUS STORAGE

Hazardous substances used in the workplace can pose serious risks to the safety of workers and the facility so proper storage is necessary. OSHA has several regulations which stipulate how hazardous substances such as chemicals and gasoline must be stored. Some requirements include:

- ❖ Adequate signage: signs should be placed on or near the designated storage area to alert workers to the presence of toxic material, potential hazards, and any necessary precautions.
- ❖ Hazardous substances should be stored in cabinets to prevent accidental spillage. These cabinets should have the capability of being locked in order to prevent improper usage.

## SORBENTS

Sorbents clean up spills through the process of sorption. They are made from different materials depending on their intended purpose: some are intended for oily spills only, some can be universal, and others are for chemical spills. Spill control kits should be readily available for any time a spill may happen in the workplace. Different forms of sorbents include:

- ❖ Pads and rolls: the most common type of sorbent. They are easy to dispose of and often have perforations for easy dispensing
- ❖ Booms or socks: ideal for use around machines and for keeping larger spills from spreading

## FANS / VENTILATION

Maintaining air flow, removing potentially dangerous fumes and minimizing heat stress are all high priorities in facilities, for both workers and machinery. Common ways to improve air quality are:

- ❖ Exhaust fans help control an indoor environment by forcing out stale air, excessive heat, and unwanted odors or other dangerous contaminants.
- ❖ Ventilation helps to introduce fresh air into an environment and helps to improve the quality of air in a facility.

## LOCKOUT/TAGOUT

Lockout/tagout is a distinct set of procedures to inhibit the use of machinery and equipment while they are undergoing service or maintenance. Machinery could release hazardous energy or unexpected energization during this time. Lockout/tagout devices include:

- ❖ Cylinder lockouts: prevent unauthorized access to propane or gas cylinders and canisters, preventing startup or the release of energy from certain machinery.
- ❖ Group lock box: storage device that stores keys for efficient lockout of large equipment

## MACHINE GUARDING

Moving machinery present several safety hazards proper safeguards must be in place to protect against crushed fingers, amputations, burns, and other injuries from machines that cut, punch, shear or rotate. Common examples of guarding include:

- ❖ Physical barriers: can be fixed or adjusted in order to prevent workers from making contact with dangerous moving parts.
- ❖ Safety trip controls: can also be used to quickly deactivate a machine by way of pressure sensitive body bars, tripods or tripwires.



## Frequently Cited OSHA Violations

- 1926.501**  
*Lack of proper fall protection in hazardous areas*
- 1910.1200**  
*Failure to develop, implement, and maintain written hazard communication*
- 1926.451**  
*Improper scaffolding construction and usage.*
- 1910.134**  
*Failure to provide and use appropriate respiratory protection in hazardous breathing conditions*
- 1910.147**  
*Lockout/Tagout: isolation of machine or equipment from the energy source before a worker performs servicing or maintenance.*
- 1910.178**  
*Failure to meet standards for powered industrial vehicles*
- 1926.1053**  
*Improper usage, type or construction of ladders*
- 1910.305**  
*Wiring methods and equipment for general use that do not meet the requirements or standards*
- 1910.212**  
*Failure to provide one or more methods of machine guarding*
- 1910.303**  
*Improper examination, installation, and use of approved electrical equipment*



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