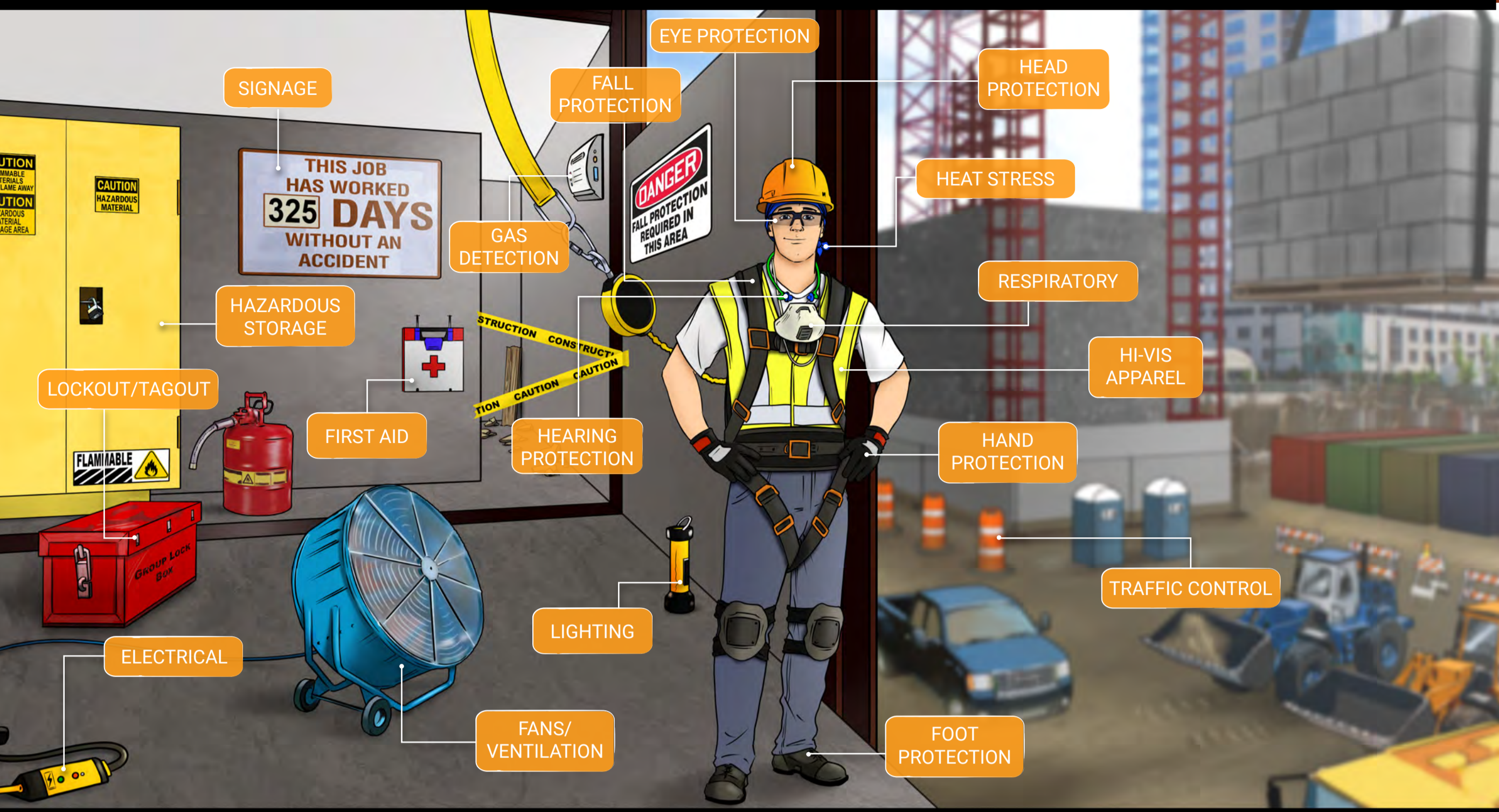


THE ILLUSTRATED CONTRACTOR SAFETY GUIDE

featuring Contractor Carl



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; 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 PROTECTION

In approximately 60% of all reported eye injury cases, the injured person was not wearing any eye protection. The eyes are especially vulnerable parts of the body so it's important to take the necessary precautions to keep them safe from potential hazards such as projectiles, chemicals, radiation, and blood-borne pathogens.

- ❖ Safety glasses are one line of defense against hazards and they can come with a variety of additional features like magnification, special lens for clearer vision in certain environments, and built-in or attached lighting.
- ❖ Safety goggles provide a tighter fit, covering the entire eye area, and protect against impact, dust and splashes.

HEAT STRESS

Working outside in the summer heat 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 bandanas: contain crystals that trap in water to keep the wearer's head cool
- ❖ Cooling towels: cool through rapid evaporation and are activated by dousing in water.
- ❖ Sports drinks: replace electrolytes and help to regulate body temperature.

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.

HEARING PROTECTION

Besides interfering with communication, high noise levels can cause temporary or permanent hearing loss. The risks don't end there: hearing loss has been linked to Alzheimer's disease and dementia. OSHA's permitted exposure limit is 90 dBA 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 and using glasses may break the seal, decreasing protection.

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

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

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.

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.

SIGNAGE

OSHA standards require proper identification of potential hazards in the work environment. Is this a hard hat zone? Put up a sign. Set a new safety record of accident-free days? Display a sign to boost worker morale.

- ❖ Signage at jobsites can serve many purposes such as alerting workers to potential hazards, identifying specific areas and the precautions needed, and encouraging safe practices.
- ❖ The right signs can reinforce your safety message, increase awareness around the jobsite, and help keep workers safe.

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.

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: Lockout/tagout devices include:

- ❖ Cable lock: a lock for a cable where the cable end is fed through the points to be locked, then back out through the lockout body
- ❖ Group lock box: storage device that stores keys for efficient lockout of large equipment

FIRST AID

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.

ELECTRICAL

OSHA's electrical standards are in place to protect employees against electric shock, fires and explosions. Engineers and electricians work with electricity directly and in many situations, protective gear such as insulating blankets and arc resistant gloves and clothing may be required. Other situations may present the risk of shock or arc flash. These situations should be evaluated in accordance with NFPA70E to ensure that the proper PPE is used. Other workplace devices that can help to protect against electrical hazards are:

- ❖ GFCI circuit analyzer: a device that monitors the imbalance of current between the undergrounded and grounded conductor of a circuit
- ❖ Triple tap GFCI: a 3-outlet triple tap that provides protection against shock from damaged cords and exposure to water

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

Frequently Cited OSHA Violations

1. **1926.501**
Lack of proper fall protection in hazardous areas
2. **1910.1200**
Failure to develop, implement, and maintain written hazard communication
3. **1926.451**
Improper scaffolding construction and usage.
4. **1910.134**
Failure to provide and use appropriate respiratory protection in hazardous breathing conditions
5. **1910.147**
Lockout/Tagout: isolation of machine or equipment from the energy source before a worker performs servicing or maintenance.
6. **1910.178**
Failure to meet standards for powered industrial trucks
7. **1926.1053**
Improper usage, type or construction of ladders
8. **1910.305**
Wiring methods and equipment for general use that do not meet the requirements or standards
9. **1910.212**
Failure to provide one or more methods of machine guarding
10. **1910.303**
Improper examination, installation, and use of approved electrical equipment

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.

LIGHTING

Poor lighting in the era of LEDs is unacceptable. There are many inexpensive ways to brighten up your work area while making it safer. A well-lit work area will limit slips and trips, relieve eyestrain and make sure you see all of those things which go bump in the night.

- ❖ Headlamps: some models can be strapped to the head while others may attach to a hard hat
- ❖ Flashlight: hand held portable lights can be used in a variety of situations.

TRAFFIC CONTROL

Traffic cones are used to redirect traffic and establish merge lanes in areas where construction work may interfere with regular traffic flow or pose a hazard. Additional signage is also required in areas where there are overhead power lines. Different types of traffic cones include:

- ❖ Grabber cones: ideal for narrow street projects where space is limited
- ❖ Traffic safety barrels: secured with a tire ring, rubber base or plastic base

