

**WORKPLACE**  
Material Handling & Safety

# Top OSHA Workplace Violations



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# Top OSHA Workplace Violations

3

## Eye and Face Protection - Regulation 29 CFR 1926.102

### Enforcement from Oct 2018-Sept 2019

Total citations: 1,698

Total inspections: 1,691

Total proposed penalties: \$4,372,282

Most Frequently Violated OSHA  
Standard Ranking—**Number 10**

### Industries most often violating eye and face protection requirements:

Specialty Trade Contractors \$4,099,758

Construction of Buildings \$216,923

Merchant Wholesalers, Durable Goods \$12,472

Administrative and Support Services \$12,155

Heavy and Civil Engineering Construction \$12,125

Waste Management and

Remediation Services \$6,203

Truck Transportation \$6,251

Wood Product Manufacturing \$2,500

Fabricated Metal Product Manufacturing \$2,046

Telecommunications \$998

Thousands of people are blinded each year from work-related eye injuries that could have been prevented with the proper selection and use of eye and face protection.

### Hazards

Each day, approximately 2,000 U.S. workers sustain a job-related eye injury that requires medical treatment. About one third of the injuries are treated in hospital emergency departments, and more than 100 of these injuries result in one or more days away from work. OSHA requires employers to ensure the safety of all employees in the work environment. Eye and face protection must be

provided, whenever necessary, to protect against chemical, environmental, radiological or mechanical irritants and hazards.

### How do eye injuries happen to workers?

- **Striking or scraping:** The majority of eye injuries result from small particles or objects striking or scraping the eye, such as dust, cement chips, metal slivers and wood chips. These materials are often ejected by tools; are windblown; or fall from above a worker. Large objects may also strike the eye or face, or a worker may run into an object—causing blunt-force trauma to the eyeball or eye socket.
- **Penetration:** Objects like nails, staples, or slivers of wood or metal can go through the eyeball and result in a permanent loss of vision.
- **Chemical and thermal burns:** Industrial chemicals or cleaning products are common causes of chemical burns to one or both eyes. Thermal burns to the eye also occur, often among welders. These burns routinely damage workers' eyes and surrounding tissue.

### How do workers acquire eye diseases?

Eye diseases are often transmitted through the mucous membranes of the eye, as a result of direct exposure to things like blood splashes; droplets from coughing or sneezing; or from touching the eyes with a contaminated finger or object. Eye diseases can result in minor reddening or soreness of the eye or in a life-threatening disease, such as HIV, hepatitis B virus or avian influenza. *[Editor's note: COVID-19 is, of course, now top-of-mind for all industrial hygienists and safety professionals.]*

### What can workers do to prevent eye injury and disease?

Wear personal protective eyewear, such as goggles, face shields, safety glasses or full-face respirators. The eye protection chosen for specific work situations depends upon the nature and extent of the hazard; the circumstances of exposure; other protective equipment used; and personal vision needs. Eye protection should be fit to an individual or adjustable to provide appropriate coverage. It should be comfortable and allow for sufficient peripheral vision.

### What can employers do to prevent worker eye injury and disease?

Employers can ensure engineering controls are used to reduce eye injuries and to protect against ocular infection exposures. Employers can also conduct a hazard assessment to determine the appropriate type of protective eyewear appropriate for a given task.

### Infection Control Q & A

Infectious diseases can be transmitted through various mechanisms, among which are infections that can be introduced through the mucous membranes of the eye (conjunctiva).

### What types of eye protection should be worn?

The eye protection chosen for specific work situations depends upon the circumstances of exposure, other PPE used and personal vision needs. There is wide variety in the types of protective eyewear, and appropriate selection should be based on a number of factors—the most important of which is the nature and extent of the hazard.



# Top OSHA Workplace Violations

Eye protection must be comfortable and allow for sufficient peripheral vision and must be adjustable to ensure a secure fit. It may be necessary to provide several different types, styles and sizes. Selection of protective eyewear appropriate for a given task should be made from an evaluation of each activity, including regulatory requirements, when applicable. These hazard assessments require a clear understanding of the work tasks, including knowledge of the potential routes of exposure and the opportunities for exposure in the task assessed (nature and extent of worker contact). Exposure incident reports should be reviewed to identify those incidents (whether or not infection occurred) that could have been prevented by the proper use of protective eyewear.

## **How should potentially contaminated eye protection be removed?**

Eye protection should be removed by handling only the portion of the equipment that secures the device to the head (i.e., plastic temples, elasticized band, ties), as this is considered relatively “clean.” The front and sides of the device (i.e., goggles, face shield) should not be touched, as these are the surfaces most likely to become contaminated by sprays, splashes or droplets during patient care. Non-disposable eye protection should be placed in a designated receptacle for subsequent cleaning and disinfection. The sequence of PPE removal should follow a defined regimen that should be developed by infection-control staff and take into consideration the need to remove other PPE. (See “Donning and Removing PPE” at [cdc.gov](https://www.cdc.gov).)

## **Is it safe for others to reuse my eye protection?**

Safety eyewear is generally not disposable and must be disinfected before reuse. Where possible, each individual worker should be assigned his/her own eye protection to ensure appropriate fit and to minimize the potential of exposing the next wearer. A labeled container for used (potentially contaminated) eye protection should be available in the HCW change-out/locker room. Eye protection deposited here can be collected, disinfected, washed and then reused.

**WMHS**

*Source: NIOSH*



## 5 Steps to Improve Machine Safety

So the story starts with you looking at a plant full of equipment, some new, some old, with the operators working hard to meet production requirements. If your safety sign reads: “We Have Worked 1 Day(s) with Zero Accidents”, then maybe it’s time to review and improve your plant safety program.

It’s everyone’s responsibility to work carefully and report unsafe conditions on the plant floor. In particular, personnel working around machines must be aware of and protected from hazards created by point-of-operation, pinch points, rotating machinery, flying debris and sparks.



Plant summer shutdowns and holidays are a great time for maintenance folks and engineers to plan for machine and process upgrades. Safety upgrades are appropriately sized projects to complete during these

shutdowns—but the work must be carefully identified, defined and scheduled to be successful. Another key component to success is involving operators and maintenance techs every step of the way, as they are on the front lines where hazards are most pronounced.

Safety starts with the right plant culture, which creates awareness and prioritizes safety over production. Safety can then be improved through this five-step program:

1. Review and document plant safety requirements
2. Perform a risk assessment on all machines
3. Order and install signs identifying hazards
4. Identify and install new safety components
5. Train operators on new requirements and designs

### BE SAFE, IT'S REQUIRED

If your facility doesn’t have safety requirements, the first step is to create them. But in most cases, safety requirements exist and just need to be reviewed, updated and disseminated to all plant personnel. Proper plant policy, standards and requirements go a long way toward promoting vigilant workers.

### ASSESS MACHINE RISK

A key to improved safety is to identify, analyze and remove hazards. From a machine safety and related electrical standpoint, there are many potentially hazardous situations such as boom, crush, zap, burn and cut. Lots of online information is available regarding risk assessment, allowing you to make a proper assessment and answer these three questions:

1. What are the hazards?
2. How can the hazard hurt personnel?
3. How can the hazard be removed or controlled?

Answering these questions for all machines in your facility will likely identify many areas for safety improvements. Make a list and start going after the low hanging fruit, and continue until the tree is picked clean.



Image courtesy of Putman Media  
www.sustainableplant.com

## I SEE SAFETY

With a safety mindset in place, it is important to identify specific hazards with signage. Not only do signs remind workers to think about safety every day, they also point out hazards that may go unnoticed. Whether it's chemical, electrical, personal protection, personal awareness or machine safety—all hazards must be identified.

OSHA and ANSI Z535-2011 standards exist to present safety and accident prevention information. There are hundreds if not thousands of signs available for purchase, but don't go crazy as too much of a good thing will overwhelm operators and maintenance techs.

## REVIEW DESIGNS, INSTALL COMPONENTS

The risk assessment will likely show that some machines have had safety systems modified, adjusted, bypassed, disabled or removed.

It will also probably show areas requiring installation of new safety components. In both cases, the safety systems must be brought up to date, either by restoring original designs, or by adding new components.

Typical safety design and maintenance improvements projects include:

- Improve point-of-access control using a light curtain
- Install two-hand control on assembly equipment
- Upgrade poorly designed guarding
- Replace troublesome guard safety switches

- Improve guard mechanical design and safe-state monitoring
- Add emergency stop pushbuttons

Remember, some safety systems are disabled by operators because they are poorly designed, and in these cases it's better to improve upon the design instead of just restoring the machine to its original state.



courtesy of [Safetyposter.com](https://www.safetyposter.com)

## TRAIN OPERATORS

Because the plant operators and maintenance techs were involved from the get go, training on the new safety regime should primarily consist of review. It's imperative to make sure everyone in the plant is on board and fully aware of all changes and upgrades, as even the best designed facilities can become unsafe with untrained or careless workers. Emergency response training should also be included in these review sessions.

Whether it's a new corporate push for safety or simply a continuation of existing practices, actively identifying areas to improve safety and implementing corrective measures is a never-ending yet necessary process.

Visit our website and store to see solutions that could fit your facility: <https://www.automationdirect.com/adc/overview/catalog/safety>

# Top OSHA Workplace Violations

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## Machinery & Machine Guarding, General Industry - Regulation 29 CFR 1910.212

### Enforcement from Oct 2018-Sept 2019

Total citations: 1,981

Total inspections: 1,803

Total proposed penalties: \$13,392,337

Most Frequently Violated OSHA  
Standard Ranking—**Number 9**

### Industries most often violating machine & machine guarding requirements in general industry:

Fabricated Metal Product Manufacturing \$2,731,872

Food Manufacturing \$1,755,562

Plastics and Rubber Products

Manufacturing \$1,311,936

Machinery Manufacturing \$783,597

Transportation Equipment Manufacturing \$565,516

Wood Product Manufacturing \$516,015

Paper Manufacturing \$502,798

Primary Metal Manufacturing \$492,576

Nonmetallic Mineral Product

Manufacturing \$470,419

Merchant Wholesalers, Durable Goods \$340,691

### Hazards

Moving machine parts have the potential to cause severe workplace injuries, such as crushed fingers or hands, amputations, burns or blindness. Safeguards are essential for protecting workers from these preventable injuries. Any machine part, function or process that may cause injury must be safeguarded. When the operation of a machine or accidental contact injures the operator or others in the vicinity, the hazards must be eliminated or controlled. This page contains general information on the various hazards of mechanical motion and techniques for protecting workers.

### Amputation Prevention

Amputations occur most often when workers operate unguarded or inadequately safeguarded mechanical power presses, power press brakes, powered and non-powered conveyors, printing presses, roll-forming and roll-bending machines, food slicers, meat grinders, meat-cutting band saws, drill presses and milling machines—as well as shears, grinders and slitters.

### What types of machine components are hazardous?

The following types of mechanical components present amputation hazards:

- **Point of operation:** the area of a machine where it performs work on material.
- **Power-transmission apparatuses:** flywheels, pulleys, belts, chains, couplings, spindles, cams and gears, in addition to connecting rods and other machine components that transmit energy.
- **Other moving parts:** machine components that move during machine operation, such as reciprocating, rotating and transverse moving parts, as well as auxiliary machine parts.

### What kinds of mechanical motion are hazardous?

All mechanical motion is potentially hazardous. In addition to in-running nip points (“pinch points”)—which occur when two parts move together and at least one moves in a rotary or circular motion that gears, rollers, belt drives and pulleys generate—the following are the most common types of hazardous mechanical motion:

- *Rotating* – circular movement of couplings, cams, clutches, flywheels and spindles, as

well as shaft ends and rotating collars that may grip clothing or otherwise force a body part into a dangerous location.

- *Reciprocating* – back-and-forth or up-and-down action that may strike or entrap a worker between a moving part and a fixed object.
- *Transversing* – movement in a straight, continuous line that may strike or catch a worker in a pinch or shear point created between the moving part and a fixed object.
- *Cutting* – action generated during sawing, boring, drilling, milling, slicing and slitting.
- *Punching* – motion resulting when a machine moves a slide (ram) to stamp or blank metal or other material.
- *Shearing* – movement of a powered slide or knife during metal trimming or shearing.
- *Bending* – action occurring when power is applied to a slide to draw or form metal or other materials.

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# Top OSHA Workplace Violations

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## What can employers do to help protect workers from amputations?

You should be able to recognize, identify, manage and control amputation hazards commonly found in the workplace, such as those caused by mechanical components of machinery; the mechanical motion that occurs in or near these components; and the activities that workers perform during mechanical operation.

Work practices, employee training and administrative controls can help prevent and control amputation hazards. Machine safeguarding with the following equipment is the best way to control amputations caused by stationary machinery:

- **Guards** provide physical barriers that prevent access to hazardous areas. They should be secure and strong, and workers should not be able to bypass, remove or tamper with them. Guards should not obstruct the operator's view or prevent employees from working.
- **Devices** help prevent contact with points of operation and may replace or supplement guards. Devices can interrupt the normal cycle of the machine when the operator's hands are at the point of operation; prevent the operator from reaching into the point of operation; or withdraw the operator's hands if they approach the point of operation when the machine cycles.

They must allow safe lubrication and maintenance and not create hazards or interfere with normal machine operation. In addition, they should be secure, tamper-resistant and durable.

You are responsible for safeguarding machines and should consider this need when purchasing machinery. New machinery is usually available with safeguards installed by the manufacturer. You can also purchase appropriate safeguards separately or build them in-house. **WMHS**

## RESOURCES - The following references aid in recognizing hazards from ineffective machine guarding:

*Machine Guarding*. OSHA eTool. Focuses on recognizing and controlling common amputation hazards associated with the operation and use of certain types of machines.

*Machine Guarding: Horizontal Injection Molding Machines - Interactive Safety Tour*. Allows user to take a virtual tour of an injection molding machine.

*Amputations*. OSHA Fact Sheet, (2002). Provides a general overview of amputations in the workplace.

*Potential Hazards Associated with the Use of Replacement Materials for Machine Guarding (PDF)*. OSHA Hazard Information Bulletin (HIB). Clarifies that replacement machine guard windows must meet or exceed the manufacturer's original design specifications.

*29 CFR 1910.217(g) Mechanical Power Press Point of Operation Injury Reports: 8/1994-12/2000*. OSHA. Summarizes "point of operation" injuries from mechanical power presses.

*Electrical*. OSHA Safety and Health Topics Page.

*Preventing Cuts and Amputations from Food Slicers and Meat Grinders*. OSHA Fact Sheet (Publication 3794), (May 2015).

*ANSI B11 Subcommittees*. Provides brief descriptions of the subcommittees and the hazards they are addressing. The American National Standards Institute's (ANSI) B11 committee is responsible for developing machine tool safety standards. Additional information about ANSI standards is available on their website.

*Injuries and Amputations Resulting from Work with Mechanical Power Presses*. U.S. Department of Health and Human Services (DHHS), National Institute for Occupational Safety and Health (NIOSH) Publication No. 87-107 (Current Intelligence Bulletin 49), (March 1987). Describes the hazards of mechanical power presses and provides safety recommendations.

*Machine Safety*. National Institute for Occupational Safety and Health (NIOSH) Workplace Safety & Health Topic. Links to several documents that discuss machinery safety for different types of agricultural equipment, and machine guarding in general.

*Hazards of Operating Unguarded Stone Cutters and Splitters in Landscaping and Other Worksites*. OSHA Safety and Health Information Bulletin (SHIB), (January 25, 2013).

# Flexbar Machine Corporation



## FLEXBAR 3-AXIS UNIVERSAL MOUNT INTERLOCKED GUARDS

As the need for electrically interlocked machine guards increases, Flexbar has designed a line of **3-Axis Universal Mount Interlocked Guards**. These guards are not only designed to protect the operator from direct contact with rotating parts of the vertical spindle and from the projection of shavings and lubricant-coolant, but will automatically shut down the machine once the shield is moved out of position.

These can be used for a wide variety of machine guarding applications including mills, drill presses, and band saws. The 3-Axis positioning system allows all models to be positioned vertically, horizontally, or “in and out” allowing protection virtually for any machine. Also, all models are permanently attached to an adjustable vertical post which is mounted through a Flexbar Electrical Interlocking device.



Quality manufactured in the USA; these guards are available right now to help solve your immediate needs.

Please contact us with any questions or machine guarding issues you are currently having. We have over 40 years of experience guarding all types of machines and look forward to working together to solve any issues you have.



## Flexbar Machine Corporation

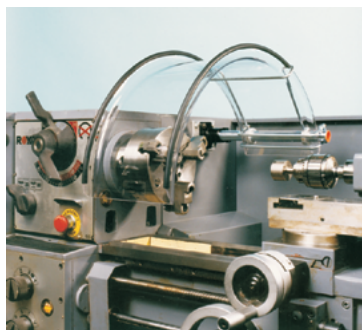
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## FLEXBAR LATHE AND CHUCK GUARDS

Guarding Lathes can be tricky and problematic especially for older machines. With our wide variety of Shields and Mounting Brackets, Flexbar Machine **Latheguards™** and **Chuckguards™** can resolve these issues quickly and easily.

We offer multiple sizes and styles of guards: Clear Lexan Wraparound Shields, Steel Wraparound Shields, and Slide-Track style that can be easily moved offering full access to the chuck. We also can custom manufacture guards for chucks up to 74”.



We also offer many styles of Mounting Brackets. All units come with a standard Side Mounting Bracket but we offer other styles so you can attach to various points on the headstock of your Lathe. We also

offer **Flexbar EIMB™** Electrical Interlocking Brackets as an option that will automatically shut down your machine once the lathe shield is moved out of position.

Quality manufactured in the USA; these guards are available right now to help solve your immediate needs.

Please contact us with any questions or machine guarding issues you are currently having. We have over 40 years of experience guarding all types of machines and look forward to working together to solve any issues you have.

## FLEXBAR PANELGUARD™ MODULAR MACHINE GUARDING SYSTEM

What can be done when you have a machine or manufacturing area where a standard machine guard does not provide enough protection? Flexbar Machine offers our **Panelguard™** system, which is a moveable, multi-function four panel setup proving complete flexibility and can be used for a variety of applications including:

- Machine Safety Areas
- Perimeter Guarding
- Temporary Guarding
- Reducing Machine Noise
- Social Distancing



The **Flexbar Panelguard™** system has four modular panels 16”W x 71”H and opens 66” across. Its simple construction conforms to fit different configurations. The upper half of each panel has crystal clear high impact resistant LEXAN®, which gives operator protection and a full view of guarded machines or areas. It can be used free-standing or can be more permanently affixed to the shop floor. You can also attach additional panels and accessories creating complete machine enclosures with access doors and interlocks.

Quality manufactured in the USA; these guards are available right now to help solve your immediate needs.

Please contact us with any questions or machine guarding issues you are currently having. We have over 40 years of experience guarding all types of machines and look forward to working together to solve any issues you have.

# Top OSHA Workplace Violations

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## Fall Protection Training Requirements, Construction - Regulation 29 CFR 1926.503

### Enforcement from Oct 2018-Sept2019

Total citations: 2,168

Total inspections: 2,111

Total proposed penalties: \$3,361,214

Most Frequently Violated OSHA  
Standard Ranking – **Number 8**

### Industries most often violating fall protection training requirements in construction standard:

Specialty Trade Contractors \$3,064,014  
(in proposed penalties)

Construction of Buildings \$251,036

Merchant Wholesalers, Durable Goods \$15,201

Telecommunications \$11,950

Administrative and Support Services \$5,364

Fabricated Metal Product Manufacturing \$2,457

Justice, Public Order and Safety Activities \$4,641

Nonmetallic Mineral Product Manufacturing \$2,652

Heavy and Civil Engineering Construction \$1,875

Waste Management and Remediation Services \$569

### The following training provisions supplement and clarify fall protection training:

- The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.
- The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:
  - 1.The nature of fall hazards in the work area
  - 2.The correct procedures for erecting, maintaining, disassembling and inspecting the fall protection systems to be used
  - 3.The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and other protection to be used
  - 4.The role of each employee in the safety monitoring system when this system is used
  - 5.The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
  - 6.The correct procedures for the handling and storage of equipment and materials, and the erection of overhead protection
  - 7.The role of employees in fall protection plans
  - 8.The standards contained in this subpart

- 3.The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and other protection to be used
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- 5.The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs
- 6.The correct procedures for the handling and storage of equipment and materials, and the erection of overhead protection
- 7.The role of employees in fall protection plans
- 8.The standards contained in this subpart

### Certification of Training

- The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained; the date(s) of the training; and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
- The latest training certification shall be maintained.

### Retraining

When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required

by paragraph (a) of this section, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

### Training Benefits

- *Recognize what a fall hazard is, including:*
  - Identify fall hazards
  - Describe what a fall hazard is
  - Identify how to prevent injuries from fall hazards
- *Recognize major types of fall hazards, including:*
  - List the major types of fall hazards in construction
  - Identify unprotected edges
  - List potential injuries caused by fall hazards
  - List factors contributing to falls
- *Recognize methods for protecting yourself from fall hazards, including:*
  - Explain how fall protection is used to prevent injuries
  - List the different types of fall protection systems
  - Explain the proper uses of fall protection systems
  - Describe important aspects of personal fall arrest systems and fall protection
- *Recognize employer requirements to protect workers from fall hazards:*



# Top OSHA Workplace Violations

- Describe ways the employers can protect workers from fall hazards
- List the general requirements of employers to protect their workers from fall hazards
- Explain the employers requirements for providing worker training

Source: <https://www.oshaeducationcenter.com/fall-protection-certificate/>

## Fall Protection Training Toolbox Talks

*How Toolbox Talks are formatted:*

- Each Toolbox Talk begins with an example of the types of incidents that are possible if workers do not follow the fall prevention guidelines outlined in the training.
- Following the job site example, the Toolbox Talk lists guidelines for preventing falls related to the topic (e.g., ladders).
- Finally, each training sheet includes blank lines for workers to include ways that the topic is applicable to their job site.

*Preparing to teach the training sessions:*

1. Spend about 15 minutes to become familiar with the Toolbox Talk.
2. Print a copy of a relevant Toolbox Talk and think about how the topic relates to your specific worksite.
3. Look through the educational materials and resources listed at the end of the training guide, along with other materials on OSHA's web site, to find materials to supplement the Toolbox Talk.

## Advice for Trainers:

Safety meetings work best if the whole crew actively participates. This makes it more interesting and more likely that people will remember the information you've given them. Here are some ways to encourage everyone to get involved:

- *Ask questions, instead of simply giving them information.* After you ask a question, wait a short time to let people think. Then, call on volunteers to answer.
- *Ask about personal experience.* This can help the group see how the topic is relevant to them. You could ask: "Has anyone here fallen off a ladder? What happened?"
- *Make sure everyone has a chance to talk.* If a crew member is talking too much, invite someone else to speak.
- *Never make fun of anyone* or put anyone down, especially for asking questions.
- *Don't fake it.* If you don't know the answer to a question, don't guess. Write the question down and promise to get back to them.
- *Stick to the topic.* If the crew's questions and comments move too far from the topic, tell them their concerns can be addressed later, either privately or in a future safety meeting. **WMHS**

# Combilift Lifting Innovation

**COMBiLiFT**  
LIFTING INNOVATION

## SAFER MATERIALS HANDLING

When personnel and equipment are working in close proximity in the warehouse, occupational health and safety needs to be given the highest priority. And this doesn't mean just adhering to statutory guidelines; creating and promoting a safety strategy across the whole of the workforce encourages a culture of vigilance which ensures that risks are kept to a minimum. Logistic processes rely on forklifts to keep things moving, but people working around them need to be constantly aware, as do the drivers, of the danger they can pose, particularly when their paths may cross.

## DRIVER AWARENESS

Forklift operators need to be aware of rules and regulations at all times and this starts even before the truck has been switched on. Checks must be carried out to ensure that it is in a fit state to be operated, and if any faults are identified they should be reported immediately. When driving, the operator needs to keep a keen



DOUBLE STORAGE WITH COMBILIFT

Using patented, leading edge technology, Combilift forklifts are equipped with a unique 4-way steering system that allows the vehicle to travel sideways with long loads. This system gives the user multi-directional capability, allowing possible space savings of up to 100%.



eye on the surroundings in order to be able to spot personnel or obstacles that may be in the vicinity. In order to avoid tip-over, overloading must be avoided and loads must be correctly secured. This involves knowing the maximum load capacity of the truck, plus the weight of any attachments, as even any minor deviations can have serious consequences.

## THE RIGHT INDUSTRIAL TRUCKS FOR THE JOB

Handling long loads in busy manufacturing facilities, through access doors and around obstacles for example, can pose all sorts of risks. Trying to solve this by using a couple of counterbalance forklifts at either end of a load is a definite no-no from a health and safety point of view and travelling with elevated loads to avoid obstacles in the yard or warehouse is deemed to be hazardous practice too.

Instead of relying on trucks with limited maneuverability, specialist trucks such as Combilift's multidirectional models are the solution. Designed specifically for the challenges of long and bulky loads, they combine the advantages of a counterbalance forklift, sideloader and narrow aisle truck in one machine to ensure safe as well as space saving and efficient handling. The very low center of gravity and integrated platform provides a stable, low level base for resting loads on during transportation. 4-way ability enables quick change of the wheel direction to sideways travel in confined spaces or through doorways.

## REDUCE RISKS WITH PEDESTRIAN MODELS

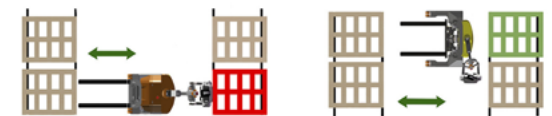
Replacing ride-on forklifts with pedestrian models when possible also improves safety. These naturally operate at slower speeds than ride-on forklifts, and operators have a heightened awareness of their environment and good all-round visibility of the load and the forks. Combilift's pedestrian trucks all feature its unique, patented multi-position tiller arm, which

ensures maximum safety for the operator and other people nearby. This can be turned to the left or right of the truck, allowing the operator to remain in the safest possible position when working in narrow aisles - at the side rather than at the rear, reducing the risk of the operator being crushed or trapped between the truck and racking.



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Standing to the side of the truck eliminates the risk of being trapped or crushed while allowing the combi-WR to operate in very narrow aisles.

## DESIGNED FOR SAFETY

Since Combilift was established in 1998, a cornerstone of the company's design philosophy has been to supply innovative handling solutions that reduce risk and prevent accidents, and more secure and safer handling is cited by many of the company's customers in over 85 countries as the reason why they opted for a Combilift product over other types of forklifts.

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# Top OSHA Workplace Violations

14

## Powered Industrial Trucks, General Industry - Regulation 29 CFR 1910.178

### Enforcement from Oct 2018-Sept 2019

Total citations: 2,414

Total inspections: 1,652

Total proposed penalties: \$7,227,548

Most Frequently Violated OSHA  
Standard Ranking – **Number 7**

### Industries most often violating the powered industrial trucks standard:

Merchant Wholesalers, Nondurable Goods  
\$684,737 (in proposed penalties)

Merchant Wholesalers, Durable Goods \$671,462

Warehousing and Storage \$669,725

Fabricated Metal Product Manufacturing \$481,315

Specialty Trade Contractors \$488,136

Food Manufacturing \$282,251

Nonmetallic Mineral Product

Manufacturing \$256,368

Plastics and Rubber Products

Manufacturing \$224,466

Machinery Manufacturing \$206,869

Wood Product Manufacturing \$169,249

*Note:* Truck Transportation received  
\$367,239 in proposed penalties

### Hazards

There are many types of powered industrial trucks. Each type presents different operating hazards. For example, a sit-down, counterbalanced high-lift rider truck is more likely than a motorized hand truck to be involved in a falling load accident, because the sit-down rider truck can lift a load much higher than a hand truck. Workplace type and conditions are also factors in hazards commonly associated with powered industrial trucks. For example, retail establishments often face greater challenges than other worksites in

maintaining pedestrian safety. Beyond that, many workers can also be injured when (1) lift trucks are inadvertently driven off loading docks; (2) lifts fall between docks and an unsecured trailer; (3) they are struck by a lift truck; or (4) they fall while on elevated pallets and tines.

### Reducing Hazards

Determining the best way to protect workers from injury largely depends on the type of truck operated and the worksite where it is being used. Employers must ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the training and evaluation. (This is specified in 29 CFR 1910.178(l)(1).)

### Age Limit

It is a violation of Federal law for anyone under 18 years of age to operate a forklift or anyone over 18 who is not properly trained and certified to do so.

### Daily Inspection Checklist: Electric Forklift Truck KEY OFF Procedures

- The vehicle inspection
    - Overhead guard
    - Hydraulic cylinders
    - Mast assembly
    - Lift chains and rollers
    - Forks
    - Tires
  - Examine the battery
  - Check the hydraulic fluid level
- ### KEY ON Procedures
- Check the gauges
    - Hour meter
    - Battery discharge indicator

- Test the standard equipment
  - Steering
  - Brakes
  - Front, tail and brake lights
  - Horn
  - Safety seat (if equipped)
- Check the operation of load-handling attachments

### Daily Inspection Checklist: Propane Forklift Truck

#### KEY OFF Procedures

- The vehicle inspection
    - Overhead guard
    - Hydraulic cylinders
    - Mast assembly
    - Lift chains and rollers
    - Forks
    - Tires
    - LPG tank and locator pin
    - LPG tank hose
    - Gas gauge
  - Check the engine oil level
  - Examine the battery
  - Check the hydraulic fluid level
  - Check the engine coolant level
- #### KEY ON Procedures
- Test the front, tail, and brake lights

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## **ENGINE RUNNING Procedures**

- Check the gauges
  - Oil pressure indicator lamp
  - Ammeter indicator lamp
  - Hour meter
  - Water temperature gauge
- Test the standard equipment
  - Steering
  - Brakes
  - Horn
  - Safety seat (if equipped)
- Check the operation of load-handling attachments
- Check the transmission fluid level

## **Where can an operator obtain the training required to become a certified forklift operator?**

The employer is responsible for implementing a training program and ensuring that only trained drivers who have successfully completed the training program are allowed to operate powered industrial trucks. An evaluation of each trained operator must be conducted during the initial training, at least once every three years, and after refresher training. The training and evaluation may be conducted by the employer, if qualified, or an outside training organization.

## **What type of training is required?**

The training must be a combination of formal (lecture, video, etc.) and practical (demonstration and practical exercises), and include an evaluation of operator performance in the workplace. Truck-related and workplace-related topics must be included, along with the requirements of the OSHA standard. The specific training topics are listed in the standard.

## **Who should conduct the training?**

All training and evaluation must be conducted by a person with the necessary knowledge, training and experience to train operators and evaluate their competency. This may be the employer, another employee or other qualified person. The training and evaluation does not have to be conducted by a single individual, but can be done by several persons, provided each one is qualified.

## **Is refresher training required?**

Refresher training is required when the operator has been observed driving unsafely; been involved in an accident or near-miss; received an evaluation that indicates unsafe operation; is assigned to drive a different type truck; or if a workplace condition affecting safe operation changes. An operator evaluation is required after refresher training.

## **What does “certified” mean?**

The employer must certify that each operator has been trained and evaluated as required by the standard. The certification must include the name of the operator, date of training, date of evaluation, and the identity of the person(s) performing the training or evaluation.

## **Does an operator who has already been trained as a powered industrial truck operator have to be retrained under the new standard?**

If an operator has received training in a required topic and the training is appropriate to the truck and the working conditions encountered, additional training in that topic is not required—if the operator has been evaluated and found competent. *WMHS*



# LadderPort

Every year falls make and often top the “Fatal Four” list as the most common cause of injuries, death and most cited OSHA violations in the construction industry. OSHA found falls were accountable for 33.5% of construction worker deaths in the United States in 2019. According to the Census of Fatal Occupational Injuries in 2017 fatal falls were at their highest level in the 26-year history of the CFOI.

Inadequate fall protection and unsafe ladders are two of the most common causes of worker death and injuries. In 2018, over 52,000 OSHA recordable injuries were reported. The National Safety Council estimates falls constitute a considerable amount of workers compensation and medical costs. One estimate approximates the cost at \$ 70 billion dollars annually in the United States.

Construction death and injuries from falls are preventable. Every contractor and building owner must work together to establish a “Safety First” culture. The experts in safety suggest the following steps in creating a safe workplace.

Plan ahead on each and every job prior to starting. Verify roof heights to confirm what safety protection is required. Determine if the building has a roof hatch that requires safe passage. How close to the edge will personnel perform work.

Provide the right equipment for the working height and condition. Can a ladder receiver be installed to hold the extension ladder in place or does the building height require a permanent ladder? Will the hatch be safe with just hand grab rails installed or is a full cage and gate required? Determine what type of harnesses are required.

Train workers in the proper use of safety equipment. Safety training should extend to all areas of the job in addition to fall safety. There are multiple tools for providing training. Many of them are free. NIOSH, OSHA, the Center for Construction Research and Training along with the NORA Construction Sector Council launched a nationwide National Campaign to Prevent Falls in Construction. Visit the NIOSH web page for more information. This group also invited companies to join the Stand Down for Falls program that coincides with Construction Safety Week each year.

A strong safety culture starts with company leadership and trickles down to every employee. It is not a one and done program.

The LadderPort company was started to manufacture USA made safety product and help decrease falls. After working in the construction industry for many years, the inventor of LadderPort products recognized a safety void when climbing extension ladders. LadderPort ladder receiver was invented to fill the void. LadderPort ladder receiver meets OSHA requirements and provides a safe means of accessing the roof from extension ladders. Once a LadderPort is installed there is no need to worry about where to tie off. LadderPort holds the extension ladder safely in place in wind, snow, uneven ground and any weather. The ladder cannot fall in any direction.

LadderPort discovered other safety needs and continued to manufacture additional safety products.

Roof Hatches are always scary and unsafe. LadderPort manufactures Roof Hatch Grab Bars with or without cages that meet OSHA Walking- Working Surface

rules. Never worry about falling thru the hole again. Hand grab rails are always available and do not require the worker to manually move a hand hold up/down or maneuver around it while on the ladder.

LadderPort manufactures many additional ladder and roof access safety products in our plant in Brighton, Michigan. Whether Up a Ladder, Through A Hatch or Over a Wall – LadderPort has a safety solution for all.

By working together, we can create a safer environment for all workers.

Visit our website [www.ladderport.com/email\\_michele@ladderport.com](http://www.ladderport.com/email_michele@ladderport.com) /call 800-770-8851 for more information.





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# Top OSHA Workplace Violations

18

## Ladders, Construction - Regulation 29 CFR 1926.1053

### Enforcement from Oct 2018-Sept 2019

Total citations: 2,907

Total inspections: 2,392

Total proposed penalties: \$7,172,688

Most Frequently Violated OSHA  
Standard Ranking – **Number 6**

### Industries most often violating the ladders in construction standard:

Specialty Trade Contractors \$6,428,762  
(in proposed penalties)

Construction of Buildings \$544,596

Heavy and Civil Engineering Construction \$75,873

Merchant Wholesalers, Durable Goods \$34,127

Real Estate \$14,624

Administrative and Support Services \$12,323

Utilities \$11,987

Accommodation \$3,500

Electrical Equipment, Appliance  
and Component Mfg. \$2,919

Food Services and Drinking Places \$1,895

### Hazards

Falls from portable ladders (step, straight, combination and extension) are one of the leading causes of occupational fatalities and injuries.

### Portable Ladder Safety

- Read and follow all labels/markings on the ladder.
- Avoid electrical hazards! Look for overhead power lines before handling a ladder. Avoid using a metal ladder near power lines or exposed energized electrical equipment.

- Always inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- Always maintain a three-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing. Keep your body near the middle of the step and always face the ladder while climbing.
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Ladders must be free of any slippery material on the rungs, steps or feet.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose.
- Use a ladder only on a stable and level surface, unless it has been secured (top or bottom) to prevent displacement.
- Do not place a ladder on boxes, barrels or other unstable bases to obtain additional height.
- Do not move or shift a ladder while a person or equipment is on the ladder.
- An extension or straight ladder used to access an elevated surface must extend at least 3ft above the point of support. Do not stand on the three top rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface.
- A ladder placed in any location where it can be displaced by other work activities must be secured

to prevent displacement or a barricade must be erected to keep traffic away from the ladder.

- Be sure that all locks on an extension ladder are properly engaged.
- Do not exceed the maximum load rating of a ladder. Be aware of the ladder's load rating and of the weight it is supporting, including the weight of any tools or equipment.

### Ladder Selection

Ladder safety starts here. Not all ladders are created equal, and different styles are designed to keep you safe in different situations and conditions. Here are a few tips to help you choose the right ladder for any job:

- **Select the right ladder style.** Extension ladders, platform ladders, work platforms and even step ladders all have a place at home and on job sites. Choosing the correct ladder will help you stay safe when climbing or standing to perform a specific task.
- **Pick the right material.** Aluminum ladders are lightweight and durable, but are not weather-resistant or non-conductive. Fiberglass ladders are weather-resistant and have non-conductive siderails, which make them a safe choice around electrical components.

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- **Make sure the height is correct.** Climbing to the top steps or standing too high on a ladder can put you at risk. Pick the ladder height that's correct for the job. Extension ladders should be 7-10ft longer than your highest support point. Avoid standing above the fourth rung from the top on an extension ladder.
- **Make sure you choose a ladder that provides ample reach.** A safe reach height is no more than 4ft from the top of the ladder.
- **Check ladder duty ratings or maximum load capacity before purchase.** These ratings and a corresponding chart will tell you how much weight each ladder is capable of supporting. Light-duty ladders typically hold 200lbs; medium-duty and painter's and handyman ladders hold about 22lbs. Heavy-duty, heavy-duty industrial ladders and special duty ladders can hold 250-375lbs.
- **Choose a ladder that meets OSHA or ANSI regulations for industrial or commercial purposes.** OSHA-approved and ANSI-approved ladders help keep your employees safe.

## Ladder Inspection

- Inspect your ladder before using it. Don't use a ladder with structural damage.
- Clean your ladder regularly. A clean ladder is much safer than a dirty ladder.
- Check to make sure all moving parts work properly and are secured in place.
- Never check a ladder by jumping up and down on it or using excess force to test for strength and integrity.

## Climbing Tips

- Face the ladder and keep three points of contact when climbing. Two hands and one foot or one hand and two feet is considered safe.
- Make sure your ladder's feet are firmly and securely on the ground.
- Always face the ladder and use the rungs as grips. Avoid using the side rails to pull yourself up. Keep your body centered on the ladder.
- Never climb with your back to the ladder.
- Wear the right shoes. When climbing a ladder, you want to be wearing work boots or work shoes. Tennis shoes with appropriate tread are acceptable for light-duty jobs.
- Avoid using your ladder outside in bad weather whenever possible. [WMHS](#)

# Lock America System Enhances Lockout/Tagout Programs

For nearly four decades, Lock America of Corona, CA ([www.laigroup.com](http://www.laigroup.com)) has been a leader in developing innovative security lock programs for the gaming, information destruction, fuel marketing and self-storage industries. After years supplying this customer base with lockout/tagout locks, they have decided to expand their lockout/tagout program to the industrial safety market. Lock America develops and markets locks at all security and price levels. They offer the standard hardware with keyed different brass or steel locks in eight colors, with various message options. For those applications that go beyond the basic, they have a range of high security locks with thousands and even millions of key codes, with the option of key codes registered exclusively to the client. They can even match the key codes for many companies' current locks.

CEO Frank Minnella is excited about opening up a new market. "Over the years, many of our customers have requested lockout/tagout packages, and we've provided them for specific applications. We know the applications our customers wanted. Now we can offer the same level of experience and service to a new market. We're developers. While we market directly, we prefer to use distributors for our new markets. We're a small innovative manufacturer, and don't want a big sales force. We want to make our product part of a larger distribution stream. We know that's the best way to get our products out."



Lock America produces a full range of locks:

- Inexpensive brass locks in seven colors which can be all keyed alike or keyed differently by color.
- Brass body locks with steel shackles that can be keyed alike or differently, with the option of a warning message.
- Laminated steel locks keyed alike or keyed different.
- A vinyl clad version of the laminated steel lock, in a wide variety of colors and customer logos.
- Aluminum body locks in eight colors with removable lock cylinders.
- Disk locks in standard key, tubular key and high security versions, with seven colors available.
- High security locks with drill and pick resistant keyways, millions of key codes, with each lock's key code registered exclusively to each customer. Master keying available.

Lock America was founded in 1981 by Steve Shiao, president, and Frank Minnella, vice-president and CEO. Their first products were vending machine locks and hardware, and then the company quickly moved into amusements, gaming and self-storage.



Lock America developed the original enforcer cylinder lock system for self-storage in 1986. Since then they have expanded their reach to provide locks and latches for shredding machines, and since 2010, fill valve and outlet locks for propane tanks, and lock upgrade kits for petroleum dispensers and ATM machines. Lock America has developed successful distributor relationships for their self-storage, propane and petroleum markets, which allows them to focus on what they do best: listening to their customers and developing new products that solve old and new problems. Minnella explains that "we develop

products that meet a need. The industrial safety market has vendors in place, but we can offer more than just your standard lock or off-the-shelf package. We can configure any type of lockout system, and we can usually provide additional locks with compatible key combinations. We're the innovators. We've had great success partnering with developers in a number of markets. We look forward to doing that in the material safety market as well."

For additional information, go to [www.laigroup.com](http://www.laigroup.com) or contact Lock America, 9168 Stellar Court, Corona, CA. Phone: 800-422-2866 or 951-277-5180, fax 951-277-5170, or [sales@laigroup.com](mailto:sales@laigroup.com).



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# Top OSHA Workplace Violations

22

## Control of Hazardous Energy (Lockout/Tagout) General Industry - Regulation 29 CFR 1910.147

### Enforcement from Oct 2018-Sept 2019

Total citations: 2,839

Total inspections: 1,617

Total proposed penalties: \$15,732,317

Most Frequently Violated OSHA  
Standard Ranking – **Number 5**

### Industries most often violating LOTO standard:

Food Mfg. \$2.9 million (in proposed penalties)

Plastics and Rubber Products Mfg. \$1.8 million

Fabricated Metal Product Mfg. \$1.6 million

Wood Product Mfg. \$836,574

Nonmetallic Mineral Product Mfg. \$787,787

Paper Mfg. \$696,444

Machinery Mfg. \$610,391

Chemical Mfg. \$583,117

Transportation Equipment Mfg. \$540,211

Merchant Wholesalers, Durable Goods \$477,499

### What is hazardous energy?

Energy sources, including electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other sources in machines and equipment can be hazardous to workers. During the servicing and maintenance of machines and equipment, the unexpected startup or release of stored energy can result in serious injury or death to workers.

### What are the harmful effects of hazardous energy?

Workers servicing or maintaining machines or equipment may be seriously injured or killed if hazardous energy is not properly controlled. Injuries resulting from the failure to control hazardous energy

during maintenance activities can be serious or fatal. Injuries may include electrocution, burns, crushing, cutting, lacerating, amputating, fracturing body parts and others.

### Examples include:

- A steam valve is automatically turned on burning workers who are repairing a downstream connection in the piping.
- A jammed conveyor system suddenly releases, crushing a worker who is trying to clear the jam.
- Internal wiring on a piece of factory equipment electrically shorts, shocking worker who is repairing the equipment.

### Workers Most at Risk

Craft workers, electricians, machine operators and laborers are among the millions of workers who service equipment routinely and face the greatest risk of injury.

### What can be done to control hazardous energy?

- Proper lockout/tagout (LOTO) practices and procedures safeguard workers from hazardous energy releases. The LOTO standard establishes the employer's responsibility to protect workers from hazardous energy. Workers must be trained in the purpose and function of the energy-control program and have the knowledge and skills required for the safe application, usage and removal of the energy control devices.
- All employees who work in an area where energy control procedure(s) are utilized need to be instructed in the purpose and

use of the energy- control procedure(s), especially prohibition against attempting to restart or reenergize machines or other equipment that are locked or tagged out.

- All employees who are authorized to lockout machines or equipment and perform the service and maintenance operations need to be trained in recognition of applicable hazardous energy sources in the workplace; the type and magnitude of energy found in the workplace; and the means and methods of isolating and/or controlling the energy.
- Retraining of all employees to maintain proficiency or introduce new or changed control methods.

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## Why is controlling hazardous energy sources important?

Employees servicing or maintaining machines or equipment may be exposed to serious physical harm or death if hazardous energy is not properly controlled. Compliance with the LOTO standard prevents an estimated 120 fatalities and 50,000 injuries each year. Workers injured on the job from exposure to hazardous energy lose an average of 24 workdays for recuperation.

## What do employees need to know?

Employees need to be trained to ensure that they know, understand and follow the applicable provisions of the hazardous energy-control procedures. The training must cover at least three areas: aspects of the employer's energy-control program; elements of the energy-control procedure relevant to the employee's duties or assignment; and the various requirements of the OSHA standards related to lockout/tagout.

## What must employers do to protect employees?

- Develop, implement and enforce an energy-control program.
- Use lockout devices for equipment that can be locked out. Tagout devices may be used in lieu of lockout devices, only if the tagout program provides employee protection equivalent to that provided through a lockout program.
- Ensure that new or overhauled equipment is capable of being locked out.
- Develop, implement and enforce an effective tagout program if machines or equipment are not capable of being locked out.

- Develop, document, implement and enforce energy-control procedures. *[See the note to 29 CFR 1910.147(c)(4)(i) for an exception to the documentation requirements.]*
- Use only LOTO devices authorized for the particular equipment or machinery and ensure that they are durable, standardized and substantial.
- Ensure that LOTO devices identify the individual users.
- Establish a policy that permits only the employee who applied a LOTO device to remove it. *[See 29 CFR 1910.147(e)(3) for exception.]*
- Inspect energy-control procedures at least annually.
- Provide effective training as mandated for all employees covered by the standard.
- Comply with the additional energy-control provisions in OSHA standards when machines or equipment must be tested or repositioned; when outside contractors work at the site; in group lockout situations; and during shift or personnel changes. **WMHS**

## Resources

*Lockout-Tagout Interactive Training Program.* OSHA eTool.

*Small Business Handbook (PDF).* OSHA Publication 2209, (2005). Handbook is provided to owners, proprietors and managers of small businesses to assure the safety and health of workers.



# How to Reduce hazardous injuries and fatalities by up to 85%

OSHA's standard for the Control of Hazardous Energy (Lockout/ Tagout) 29 CFR 1910.147 addresses one of the most critical safety procedures in the general industry – protecting workers during servicing and maintenance of machines and equipment from unexpected startup or release of stored energy.



## WHO'S AT RISK

Craftworkers, electricians, machine operators, and laborers are among the three million workers who service and maintain equipment routinely and face the most significant risk of injury from energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, and other sources in machines and equipment. Employees in almost every industrial division are exposed to such hazards, but most lockout/tagout accidents and injuries occur in manufacturing.

Severe injuries and fatalities OSHA believes that failing to control energy adequately accounts for nearly ten percent of many industries' serious accidents.

## HOW MANY ARE AT RISK

OSHA has estimated that its lockout/tagout (LOTO) standard prevents 85 percent of the total number of injuries or fatalities from exposure to hazardous energy. It's estimated that the standard prevents approximately 31,900 minor (non-lost-workday) injuries, 28,400 lost-workday injuries, and 122 deaths per year.

## THE OSHA STANDARD

OSHA's LOTO standard was a long time in coming. When OSHA first published general industry standards in 1971 (adopting either national consensus standards or existing federal standards), there was no public, all-encompassing consensus or federal standard for locking out, tagging out, or disabling machinery or equipment to protect workers when maintenance or servicing duties were performed.

However, OSHA did adopt lockout-related provisions of consensus standards developed for specific types of equipment, such as powered industrial trucks, overhead cranes, derricks, woodworking machinery, mechanical power presses, forging machines, welding, bakery equipment, sawmills, and electrical safety-related work practices.

## THE SOLUTION

Since the inception of the OSHA enforcement program in 1971, the agency, for the most part, had to rely on the use of the "General Duty Clause" (section 5[a][1] of the Occupational Safety and Health Act) citation to ensure that employers protected their workers. OSHA conceded that this approach met with only limited success because compliance officers had to prove that the hazard was a "recognized" hazard and caused or could cause death or serious physical harm.

Regarding servicing and/or maintenance during normal production operations, OSHA stated that if a worker were protected by machine guards that could not be removed or bypassed, the lockout/tagout standard would not apply. But if an employee might need to avoid or remove the guard and reach into the point of operation, and if this kind of servicing could expose the employee to unexpected activation or the release of stored energy, the lockout/tagout standard would apply.

In the final rule, OSHA determined that lockout, not tagout, is the preferred method of assuring equipment

de-energization. But the agency stated that tagout will need to be used instead of lockout 29 CFR § 1910.147... The Control of Hazardous Energy (Lockout/Tagout) ...requires the employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and for disabling otherwise machines or equipment to prevent unexpected energization, startup or release of stored energy to avoid injury to employees.

Where the energy control device cannot accept a locking device. When an energy control device is lockable, the standard requires that lockout be used unless tagout can be shown to provide "full employee protection" equal to lockout.



More than locks and tags OSHA states that its standard is not merely focused on lockout versus tagout; rather, locks and/or tags are part of an OSHA-mandated comprehensive energy control program.

## GET STARTED TODAY

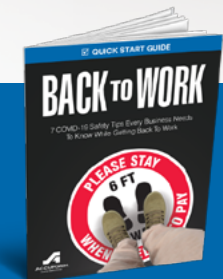
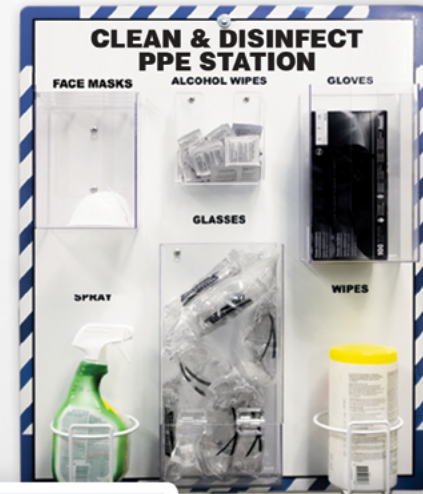
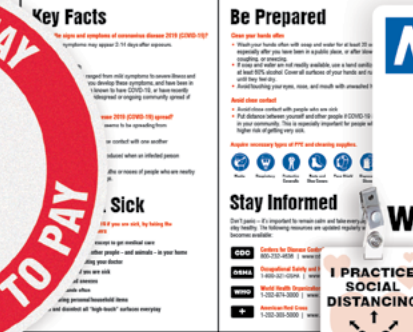
Learn more about an effective lockout tagout program at [Accuform.com/STOPOUT](http://Accuform.com/STOPOUT).



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# Top OSHA Workplace Violations

26

## Respiratory Protection, General Industry - Regulation 29 CFR 1910.134

### Enforcement from Oct 2018-Sept 2019

Total citations: 2,931

Total inspections: 1,298

Total proposed penalties: \$3,808,871

Most Frequently Violated OSHA  
Standard Ranking – **Number 4**

### Industries most often violating the respiratory protection standard:

Fabricated Metal Product Mfg.

\$359,052 (in proposed penalties)

Specialty Trade Contractors \$329,422

Chemical Mfg. \$227,992

Nonmetallic Mineral Product Mfg. \$213,493

Transportation Equipment Mfg. \$183,956

Furniture and Related Product Mfg. \$148,276

Machinery Mfg. \$163,008

Repair and Maintenance \$146,999

Merchant Wholesalers, Durable Goods \$101,285

Construction of Buildings \$81,669

*Note:* Support Activities for Transportation  
received \$646,164 in proposed penalties

### Are there any cautions or limitations when using respirators?

Yes. Each type of respirator can come in several varieties, each with its own set of cautions, limitations and restrictions of use. Tight-fitting respirators require fit-testing, to ensure an adequate fit to the face, and cannot be used with facial hair. Certain escape respirators use a nose-clip and mouthpiece, which is clenched between your teeth, similar to a snorkel. Some respirators prevent the user from talking, while others have speaking diaphragms or electronic communication devices. Every respirator contaminated

with hazardous chemicals should be cleaned and decontaminated or disposed of properly.

All respirators require training in order to be properly used. Sometimes you can practice using your own respirator. Some escape respirators come in a package that must remain sealed until use, so you need to be trained using a special “practice” version. Training is extremely important in regard to the storage, maintenance, use and disposal of the respirator. This information is provided by the supplier of the respirator (i.e., seller, distributor or manufacturer). If you do not use a respirator correctly, it is very likely that it will not adequately protect you and might even hurt you.

### How well does a respirator need to fit?

If your mask does not make a tight seal all the way around your face when you inhale, you may breathe contaminated air that leaks around the edges of the face seal. Most respirators come in various styles and sizes and fit people differently, because people’s faces have different shapes. You also need training to know how to correctly put the mask on and wear it correctly. This information should be provided by the supplier of the respirator.

The only way to tell if a tight-fitting respirator fits you properly and is capable of protecting you is to fit-test the respirator. Fit-testing can be accomplished a number of different ways and should be done by a health and safety professional before workers wear a respirator in a hazardous environment. Respirators must be checked for proper fit each time they are donned to ensure they provide adequate protection.

### Can I wear a respirator if I have a beard?

Anything that prevents the face mask from fitting tightly against your face, such as a beard or long sideburns, may cause leakage. If your respirator requires a tight fit, you must trim back your beard so that it will not interfere with the face-facepiece seal. If your respirator is a loose-fitting (hooded) positive-pressure respirator (e.g., a powered air-purifying respirator, PAPR), then you may have a beard.

### If I have the right cartridges/filters for a certain hazard, and my mask fits, will they always protect me against that hazard?

No. Gas masks and respirators reduce exposure to the hazard, but if the exposure is such that it goes beyond what the filter is capable of handling (either because the amount of toxic gas or particles is more than what the filter is designed to handle, or because the exposure lasts longer than what the filter is designed to handle), the filter may not be effective in providing required protection. Also, there may be a small amount of leakage, even if the fit of the respirator has been tested. If so, and if there is a large amount of a toxic chemical in the outside air, even that small leakage can be dangerous.

### Can anyone wear a respirator?

No. Breathing through a respirator is more difficult than breathing in open air. This includes people with lung diseases, such as asthma or emphysema, elderly people and others may have trouble breathing. People with claustrophobia may not be able to wear a full facepiece or hooded respirator. People with vision problems may have trouble seeing while wearing a mask or hood (there are special masks for people who



need glasses). Employees must be medically evaluated before assigned to use a respirator.

## **Will my cartridge/filter and respirator mask protect forever?**

No. Cartridges, filters and masks get old. If the filter cartridges are outdated; have been open to the air; or are damaged, you may not be protected. Cartridges that contain charcoal or other chemicals for filtering the air should be kept in air-tight packages until use. If cartridges are open or not packed in air-tight packaging, they should not be used. Even cartridges in original packaging have expiration dates that should be checked before purchase and use. Also, over time, your mask can get old and break down. Keep your mask in a clean, dry place—away from extreme heat or cold. Inspect it before and after use, according to the manufacturer's instructions. Cartridges also have a limited service life; they must be changed periodically during use.

## **Will a gas mask protect me if there is not enough oxygen in the air?**

No. Air-purifying respirators do not provide oxygen. If used in an environment with low oxygen levels, such as in a fire or a confined space, you are in danger of asphyxiation.

## **Will a gas mask protect me if there is a fire?**

Most will not. It's important to read the manufacturer's information if your main concern is to be able to escape from a smoke-filled building. Smoke particles can rapidly clog gas mask filters, and filters with special chemicals are needed to protect against carbon

monoxide and other gases that may occur in a fire. Not all gas masks or escape respirators protect against these hazards. Some components, including hoods and facepieces, of many of the gas masks and escape respirators may melt if exposed to fire.

## **Once I put on my gas mask, how long will it last?**

That depends on how much filtering capacity the respirator has and the amount of hazard in the environment—the more chemical or biological hazard in the air (higher concentration), the shorter the time your filter will last. There is no absolute time limit, and it will vary by each respirator model's capacities and the concentration of the hazard.

## **Questions to consider regarding any respirator you are considering purchasing:**

- What protection (which chemicals and particles, and at what levels) does the respirator provide?
- Is there more than one size?
- Which size should I use?
- How do I know if the gas mask or respirator will fit?
- What type of training do I need?
- Are there any special maintenance or storage conditions?
- Will I be able to talk while wearing the respirator?
- Does the hood restrict vision or head movement in any way?
- Can I carry the device in the trunk of my automobile?
- Is a training respirator available? [WMHS](#)

# Top OSHA Workplace Violations

28

## Scaffolding, General Requirements, Construction - Regulation 29 CFR 1926.451

### Enforcement from Oct 2018-Sept 2019

Total citations: 3,400

Total inspections: 1,680

Total proposed penalties: \$10,485,196

Most Frequently Violated OSHA  
Standard Ranking – **Number 3**

### Industries most often violating the scaffolding in construction standard:

Specialty Trade Contractors \$8,401,079  
(in proposed penalties)

Construction of Buildings \$1,507,877

Fabricated Metal Product Mfg. \$285,956

Heavy and Civil Engineering Construction \$53,720

Merchant Wholesalers, Durable Goods \$49,650

Administrative and Support Services \$34,133

Performing Arts, Spectator Sports  
and Related Industries \$15,370

Support Activities for Transportation \$11,602

Wood Product Mfg. \$10,394

Educational Services \$10,000

### Hazards

The Bureau of Labor Statistics' Census of Fatal Occupational Injuries (CFOI) reported 54 fatalities occurred in the year 2009 from scaffolds and staging. In a Bureau of Labor and Statistics (BLS) study, 72 % of workers injured in scaffold accidents attributed the accident either to the planking or support giving way; or to the employee slipping or being struck by a falling object. All of these can be controlled by compliance with OSHA standards.

### What are scaffold platform construction requirements?

Each platform must be planked and decked as fully as possible with the space between the platform and uprights not more than 1in (2.5cm) wide. The space must not exceed 9½-in (24.1cm) when side brackets or odd-shaped structures result in a wider opening between the platform and the uprights. [29 CFR 1926.451(b)(1)]

### What are the requirements for scaffold planking?

Scaffold planking must be able to support, without failure, its own weight and at least four times the intended load. [29 CFR 1926.451(a)(1)]

Solid sawn wood, fabricated planks and fabricated platforms may be used as scaffold planks following the recommendations by the manufacturer or a lumber grading association or inspection agency. [29 CFR 1926 Subpart L Appendix A(1)(b) & (c)]

Tables showing maximum permissible spans, rated load capacity and nominal thickness are in 29 CFR 1926 Subpart L Appendix A(1)(b) & (c) of the standard.

### How wide does the work area need to be on scaffolding?

Each scaffold platform and walkway must be at least 18 inches (46cm) wide, guardrails and/or personal fall arrest systems must be used. [29 CFR 1926.451(b)(2)]

### Are guardrails required on all open sides of scaffolding?

The standard requires employers to protect each employee on a scaffold more than 10ft (3.1m) above a lower level from falling to that lower level. [29 CFR 1926.451(g)(1)]

To ensure adequate protection, install guardrails along all open sides and ends before releasing the scaffold for use by employees, other than the erection and dismantling crews. [29 CFR 1926.451(g)(4)(i)]

### Guardrails are not required, however:

- When the front end of all platforms are less than 14in (36cm) from the face of the work. [29 CFR 1926.451(b)(3)]
- When outrigger scaffolds are 3in (8cm) or less from the front edge. [29 CFR 1926.451(b)(3)(i)]
- When employees are plastering and lathing 18in (46cm) or less from the front edge. [29 CFR 1926.451(b)(3)(ii)]

### What materials are unacceptable for guardrails?

Steel or plastic banding must not be used as a toprail or a midrail. [29 CFR 1926.451(g)(4)(xiii)]

### Using Aerial Lifts

The major causes of injuries and fatalities involving aerial lifts are falls, electrocutions and collapses or tip-overs. Aerial devices include boom-supported aerial platforms, such as cherry pickers or bucket trucks, aerial ladders and vertical towers (OSHA regulates scissor lifts as mobile scaffolds, not as aerial devices). **WMHS**



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# Top OSHA Workplace Violations

31

## Hazard Communication Standard, General Industry - Regulation 29 CFR 1910.1200

### Enforcement from Oct 2018-Sept 2019

Total citations: 4,111

Total inspections: 2,280

Total proposed penalties: \$5,074,981

Most Frequently Violated OSHA  
Standard Ranking – **Number 2**

### Industries most often violating the hazard communication standard:

Specialty Trade Contractors \$556,264  
(in proposed penalties)

Fabricated Metal Product Mfg. \$483,739

Administrative and Support Services \$270,410

Nonmetallic Mineral Product Mfg. \$259,348

Chemical Mfg. \$230,722

Repair and Maintenance \$223,266

Merchant Wholesalers, Durable Goods \$181,559

Transportation Mfg. \$139,977

Motor Vehicle and Parts Dealers \$115,722

Furniture and Related Product Mfg. \$107,709

### Why did OSHA modify the hazard communication standard to adopt to the Globally Harmonized System?

OSHA has modified the Hazard Communication Standard (HCS) to adopt the Globally Harmonized System (GHS) to improve safety and health of workers through more effective communications on chemical hazards. While the available information has been helpful in improving employee safety and health, a more standardized approach to classifying the hazards and conveying the information will be more effective. The GHS provides such a standardized approach, including detailed criteria for determining

what hazardous effects a chemical poses, as well as standardized label elements assigned by hazard class and category. The safety data sheet requirements establish an order of information that is standardized. The harmonized format of the safety data sheets will enable employers, workers, health professionals and emergency responders to access the information more efficiently and effectively, thus increasing their utility.

### What are the major changes to the hazard communication standard?

The three major areas of change are in hazard classification, labels and safety data sheets.

- **Hazard classification:** The definitions of hazard have been changed to provide specific criteria for classification of health and physical hazards, as well as classification of mixtures. These specific criteria will help to ensure that evaluations of hazardous effects are consistent across manufacturers, and that labels and safety data sheets are more accurate as a result.
- **Labels:** Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets:** Will now have a specified 16-section format.

The GHS does not include harmonized training provisions but recognizes that training is essential to an effective hazard communication approach. The revised HCS requires that workers be retrained within two years of the publication of the final rule to facilitate

recognition and understanding of the new labels and safety data sheets.

For a side-by-side comparison of the current HCS and the final revised HCS, go to OSHA's hazard communication safety and health topics webpage at: <http://www.osha.gov/dsg/hazcom/index.html>.

### What hazard communication standard provisions are unchanged?

The revised HCS is a modification to the existing standard. The parts of the standard that did not relate to the GHS (such as the basic framework, scope and exemptions) remained largely unchanged. There have been some modifications to terminology in order to align the revised HCS with language used in the GHS. For example, the term "hazard determination" has been changed to "hazard classification" and "material safety data sheet" was changed to "safety data sheet."

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## Employer Responsibilities

Employers must ensure that the SDSs are readily accessible to employees for all hazardous chemicals in their workplace. This may be done in many ways. For example, employers may keep the SDSs in a binder or on computers, as long as the employees have immediate access to the information without leaving their work area when needed and a back-up is available for rapid access to the SDS—in the case of a power outage or other emergency. Furthermore, employers may want to designate a person(s) responsible for obtaining and maintaining the SDSs. If the employer does not have an SDS, the employer or designated person(s) should contact the manufacturer to obtain one.

## Training Requirements

Employers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new chemical hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and safety data sheets.

*Employees shall be informed of:*

- The requirements of this section;
- Any operations in their work area where hazardous chemicals are present; and,
- The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals and safety data sheets required by this section.

*Employee training shall include at least:*

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
- The physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area;
- The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures and PPE to be used; and,
- The details of the hazard communication program developed by the employer, including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer; and the safety data sheet, including the order of information and how employees can obtain and use the appropriate hazard information.

## Inspection Procedures for the Hazard Communication Standard

Are end-user employers required to re-label existing stock of containers?

End-users (i.e., employers) with existing stock or who have received shipped containers of hazardous chemicals with HCS 1994 labels (even after the June 1, 2016, final effective date) are allowed to maintain and use those containers with HCS 1994 labels. The end-user must not remove or deface any chemical

containers with HCS 1994 labels, unless the end-user immediately marks the containers with workplace labeling. If an end-user receives HCS 2012 labels from an upstream supplier for its existing stock, it is advisable to affix the HCS 2012 label over the HCS 1994 label, although it is not required. The end-user is responsible for training its workers regarding the new label elements.

## Is “trade secret” the only compliant wording allowed on a safety data sheet to indicate that an ingredient is being withheld per the trade secret provisions of HCS?

In addition to the use of “trade secret,” OSHA would also accept language such as “confidential,” “confidential business information” or “proprietary” when indicating on an SDS that information is being withheld when that information is subject to trade secret provisions of HCS. [See 77 FR 17474, 17738 (Mar. 26, 2012).] *WMHS*



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But how do we communicate hazards to each other and keep each other safe? We do that by labeling containers, by having more detailed access in MSDS repositories, and by training each other on safe handling and working with hazardous substances.

Let's talk about labeling.

Products are labeled in different ways and for different audiences. Often, the changes as it arrives and then is consumed inside the organization.



The original container of a chemical – a drum for example – will have labels on the outside of it identifying the substance, special handling it might require, and the hazards that it presents to humans. It will also have NFPA labeling on it to identify the reactivity for first responders. A commercial product will often have a brand name – used in marketing – and its chemical name.

For our discussion, we are going to look at JT's Best Degreaser. It's not just JT's Best Degreaser, though – it's also 1,1,1-Trichloroethane aka methyl chloroform. You can buy JT's in a variety of packaging - 55-gallon drums, five gallon buckets, one gallon cans, and 18 ounce bottles. When you buy JT's as a packaged product, that package must have hazcom warnings on the container so that everyone knows how to use the product safely.

Let's think about that – what does the drum label tell us about the JT Company's Degreaser product? Well – the labeling **MUST** disclose hazards associated with this substance. It is highly flammable, for example. It is toxic – exposure causes lung damage. It could tell us more, such as that it should not be used near an open flame. There might be some first aid instructions on the drum label and there will probably be an NFPA decal on the drum, to warn first responders of the reactivity, flammability, health/exposure risks, and any other special hazards.

Good to know, but did you also know that once you dispense some of the degreaser into a smaller container

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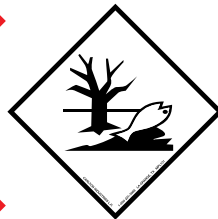
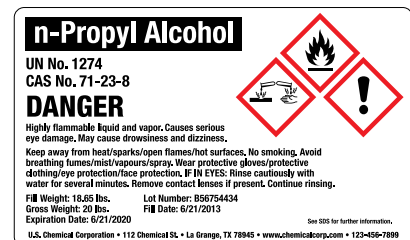
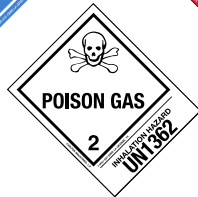
– say, a 5-gallon bucket and pump – that the bucket needs labeling, too? So do the individual bottles you might fill from the 5-gallon bucket. If you bought JT's at the store, the can or bottle would have these warnings on them. As it turns out, **EVERY** time a product is disbursed into a smaller container, that container needs to be marked with the name of the product and the hazards associated with it.

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# Top OSHA Workplace Violations

36

## Fall Protection, Construction - Regulation 29 CFR 1926.501

### Enforcement from Oct 2018-Sept 2019

Total citations 7,242

Total inspections: 7,039

Total proposed penalties: \$39,489,226

Most Frequently Violated OSHA  
Standard Ranking – **Number 1**

### Industries most often violating LOTO standard:

Special Trade Contractors \$35.3

Million (in proposed penalties)

Construction of Buildings \$3.5 Million

Merchant Wholesalers, Durable Goods \$203,085

Heavy & Civil Engineering Construction \$151,595

Administrative & Support Services \$33,552

Repair And Maintenance \$32,771

Waste Management & Remediation Services \$31,273

Real Estate \$29,003

Fabricated Metal Product Mfg. \$28,770

Utilities \$19,383

### Hazards: Falls are the Leading Cause Of Death In Construction

In 2018, there were 320 fatal falls to a lower level out of 1,008 construction fatalities (BLS data).

### Why is fall protection important?

Falls are among the most common causes of serious work-related injuries and deaths. Employers must set up the workplace to prevent employees from falling off of overhead platforms, elevated workstations, or into holes in the floor and walls.

### What can be done to reduce falls?

Employers must set up the workplace to prevent employees from falling off of overhead platforms, elevated workstations, or into holes in the floor and walls. OSHA requires that fall protection be provided at elevations of 4ft in general industry workplaces, 5ft in shipyards, 6ft in the construction industry and 8ft in longshoring operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance.

*To prevent employees from being injured from falls, employers must:*

- Guard every floor hole into which a worker can accidentally walk (using a railing and toe-board or a floor hole cover).
- Provide a guard rail and toe-board around every elevated open sided platform, floor or runway.
- Regardless of height, if a worker can fall into or onto dangerous machines or equipment (such as a vat of acid or a conveyor belt), employers must provide guardrails and toe-boards to prevent workers from falling and getting injured.
- Other means of fall protection that may be required on certain jobs include safety harness and line, safety nets, stair railings and handrails.

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# Top OSHA Workplace Violations

37

OSHA requires employers to:

- Provide working conditions that are free of known dangers.
- Keep floors in work areas in a clean and, so far as possible, a dry condition.
- Select and provide required personal protective equipment at no cost to workers.
- Train workers about job hazards in a language that they can understand.

## Three strategies to prevent falls in construction

### 1. Plan ahead to get the job done safely

When working from heights, employers must plan projects to ensure that the job is done safely. Begin by deciding how the job will be done; what tasks will be involved; and what safety equipment may be needed to complete each task.

When estimating the cost of a job, employers should include safety equipment and plan to have all the necessary equipment and tools available at the construction site. For example, in a roofing job, think about all of the different fall hazards, such as holes or skylights and leading edges, then plan and select fall protection suitable to that work, such as personal fall arrest systems (PFAS).

### 2. Provide the right equipment

Workers who are 6ft or more above lower levels are at risk for serious injury or death if they should fall. To protect these workers, employers must provide fall protection and the right equipment for the job, including the right kinds of ladders, scaffolds and safety gear.

Use the right ladder or scaffold to get the job done safely. For roof work, if workers use personal fall arrest systems (PFAS), provide a harness for each worker who needs to tie off to the anchor. Make sure the PFAS fits, and regularly inspect it for safe use.

### 3. Train everyone to use the equipment safely

Every worker should be trained on proper set-up and safe use of equipment they use on the job. Employers must train workers in recognizing hazards on the job.

### At-Risk Fall Exposures

Ladders  
Floor openings  
Fixed scaffolds  
Bridge decking  
Reroofing  
Leading edge work  
Solar industry  
Skylights  
Wind towers  
Telecommunication towers  
Residential construction  
Commercial construction  
Aerial devices & elevating equipment

### Fatality reports:

- Roofer Falls 20ft from Roof (PDF). Washington Report: 71-139-2015, (September 2015).
- Hispanic Roofer's Fall Protection Failed Causing Him to Fall 29.91 Feet to his Death, Kentucky. NIOSH, Kentucky Case Report: 14KY030, (July 2015).

- Horse Breeder Falls 11-12ft from Hayloft When Throwing Hay Bale - Michigan. NIOSH, Michigan Case Report: 12MI281, (July 2015).
- Two Construction Workers Fall to Their Death through Temporary Wooden Bridge Platforms (PDF). New Jersey Department of Health. [WMHS](#)

### Resources:

*OSHA Fall from a Telecommunications Tower (PDF)*. OSHA FATAL Facts No. 7, (2014)

*OSHA Fall Prevention Training Guide - A Lesson Plan for Employers (PDF)*

*OSHA Alliance Program Toolbox talks and Training products*

### 7th Annual Safety Stand-Down Rescheduled for Sept. 14 -18!

The Safety Stand-Down, originally scheduled for May 4-8, 2020, has been rescheduled for September 14-18, 2020. Visit OSHA's website for more information on participating virtually or holding your stand-down with safe social distancing in mind.

# Do You Have People Working at Heights?

Fall Protection remains in the top 10 OSHA violations. Fall Protection is widely used in Fall Prevention; but what happens after a fall from heights leaves a worker hanging in their body harness?

After a fall the response time is critical for a worker hanging for a prolonged period of time placing them at serious risk of Suspension Trauma, a danger which is life threatening when response is beyond a critical time window of several minutes.

Grace Industries has addressed this problem with the new Grace WorkForce®. WorkForce® uses an advanced gyro/accelerometer to detect a worker's fall from heights and automatically transmits an emergency alert without any action required by the worker to facilitate a "prompt rescue".

WorkForce® is used by anyone working at heights or working alone. Common applications include utilities, construction, arborist, scaffold workers and windfarms.

WorkForce® is made in the USA, has No Monthly Fees or Annual Subscriptions and uses its own autonomous high performance unlicensed radio system.

## Do You Have People Working At Heights?

### Fall Suspension Trauma Protection That Won't Leave You Hanging

**Real-Time Fall Safety**

- Avoid the risk of Suspension Trauma with Immediate Alarm Notification

**Fall Detection**

- WorkForce® detects a fall from heights

**Automatic Motion Sensing**

- Alarm is activated automatically after pre-alert timer count-down

**Manual Panic Activation**

- User activated alarm

**Display Alarm Location**

- Outdoor GPS Option – with Grace Lone Worker Advanced Monitoring
- Indoor Location – with Grace Indoor Locator Beacon

**License Free Advanced Autonomous Wireless Signaling**


- NO Cellular Service Required
- NO Internet Required

**Integrates with Grace Advanced Monitoring Systems**

- Text and Email Notification
- Automatic Voice Dialer
- Integrates with user alarm and SCADA systems
- Satellite Modems

**NO MONTHLY FEES OR ANNUAL SUBSCRIPTIONS**






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[www.GraceFallSafety.com](http://www.GraceFallSafety.com)

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# Do You Have People Working Alone?

Use an employee check-in system and a lot can happen between employee "check-in's".

Check-in systems do not work •  
You need an Immediate Notification System

Grace Lone Worker Systems:

- DO NOT - Rely upon cellular networks
- DO NOT - Require internet connections
- INTEGRATE with SCADA/Fire/Weather Alarms
- BEST OF ALL - NO Subscription Fees

Heavy Duty-Intrinsically Safe Worker Worn Alarms

Check-Out our simple Buddy System or Supervisor's Package.

Advanced Location Monitoring with MS2000X • SMS Safety Monitor • Grace-Watch®.

SC500 GracePoints GPS® provides both outdoor GPS and indoor Grace Locator Beacon locations.

Forget Check-in's • You need real-time monitoring!

## How Do You Protect Your Lone Workers?

**Employee Check-In Systems Don't Work! You Need an Immediate Notification System**

How Long Would You Expect to Wait for Help?

A Lot Can Happen Between Employee "Check-Ins"

Real-Time Immediate Notification of a Man-Down

No Monthly Fees or Annual Subscriptions

Don't Rely on Cellular Service or Cell Phone Apps

Don't Rely on the Internet or Website Monitoring

Rugged and Intrinsically Safe for Harsh Environments

Interface with SCADA and All Other Alarm Systems

Joe... Joe... Are you There, Joe?

Joe... Joe... Are you There, Joe?

**GRACE INDUSTRIES, INC.**  
LONE WORKER SAFETY

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# Protection your brain deserves

## Petzl's helmet line leading the way forward



If you were to pass by a new elementary school construction site in Portland, Oregon you might be surprised to see every worker wearing a form-fitting safety helmet with a chin strap, more commonly seen on mountain climbers. The Portland contractor is one of a growing number of construction companies switching from a simple hard hat or “skull buckets” to the new safety helmets, manufactured by companies like Petzl.

“Think of head protection as a system and a tool,” explains Petzl’s Professional Division National Sales Manager, Michel Goulet. “It’s not just a thing you wear to protect your head, which of course is its primary purpose. But it should help you do your job, too.”

Petzl offers two models: the VERTEX comes in seven standard colors and the STRATO in four colors. VERTEX helmets have a six-point webbing suspension system that conforms to the shape of the head for maximum ventilation and comfort. Shock absorption performance is achieved through deformation of the external shell. STRATO helmets have an internal foam liner designed in two parts: EPP (expanded polypropylene) and EPS (expanded polystyrene) for increased durability and lighter weight. Deformation of the liner absorbs shocks, similar to a traditional foam cycling helmet. Both the VERTEX and STRATO helmet line meet the ANSI Z89.1 and CSA Z94.1 standard.

### CHIN STRAPS MAKE A DIFFERENCE

Adjustable chin straps are one of the prominent design features of the helmets. Chin straps ensure the helmet won’t fall off if workers trip or fall. This significantly decreases the chances of a traumatic brain injury or other serious injury. Contractors are finding that workers prefer these safety helmets because of their sleek, sporting-like profile, extreme light weight, secure fit and comfort. The headband is easy to adjust so the helmet can



be perfectly centered on the head, by simultaneously rotating the two side adjustment wheels, even while wearing gloves. The adjustable 4-point chin strap strength adapts the helmet to any environment, including work-at-height or groundwork.

“Four-point chin straps, like the ones on bicycle helmets, are more secure than two-point chin straps,” Goulet says. “Helmets with two-point connections shift or dislodge more easily if they’re bumped. Helmets can only do their jobs if they stay fitted on your head.”

The work-at-height chin strap mode has a higher strength to reduce the risk of the helmet coming off in a fall. The lower strength mode limits possible choking risk by releasing the chin strap if the helmet becomes snagged when a user is at ground level. Keep in mind, most falls occur due to trips and slips on level surfaces, a common occurrence with construction’s on-the-go, hustling workforce. Both EN 387 and EN 14052 helmets must be fitted with a chin strap and fastening system/anchorage points. The strength of the strap anchorage(s) must enable any attached chin strap to hold the helmet on the head, but not be so great to become a strangulation hazard.

### STANDARDS COMPLIANCE

Petzl helmets also satisfy requirements of the U.S. ANSI Z89.1 standard for head protection, which OSHA requires all helmets to meet. The Z89.1-2014 standard tests two types of helmet styles: one for top-of-head protection (Type I), and one for lateral-impact protection (Type II).

Helmet	Colors	Certifications	Weight
 STRATO	 H-VZ	CE EN 397 (1), EN 50365 (2), ANSI Z89.1 Type I Class E, EAC	435g
 STRATO VENT	 H-VZ	CE, EN 12492, ANSI Z89.1 Type I Class C	415g
 VERTEX*	 H-VZ	CE, EN 397, EN 12492(3), EN 50365, ANSI Z89.1 Type I Class E, EAC  * CSA models available, but not pictured	490g
 VERTEX VENT	 H-VZ	CE, EN 397, EN 12492, ANSI Z89.1 Type I Class C, EAC	490g
(1) meets all requirements of the EN 397 standard, except the requirement for internal vertical clearance (2) meets the EN 397 standard (3) meets all requirements of the EN 12492 standard, except the ventilation requirement.			

The VERTEX and STRATO helmets are rated for Type I and meet the ANSI Z89.1 standard. Both helmet models are available in high-visibility yellow and orange, featuring phosphorescent headlamp clips and reflective sticker-ing. This provides maximum visibility for workers, day or night. Modular accessories, like eye and ear protection, are compatible with both helmet lines as well as custom logo options.

Your brain deserves as much care and attention as your feet, hands and limbs. Take care of it with a helmet you can trust.

For more information visit: [www.petzlhelmet.com](http://www.petzlhelmet.com).

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