Construction & Contractor

SAFETY

COMPLYING WITH OSHA STANDARDS IN CONSTRUCTION

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FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Control of Hazardous Energy (Lockout/Tagout) General Industry

Regulation 29 CFR 1910.147

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.

Workers servicing or maintaining machines or equipment may be seriously injured or killed if hazardous energy is not properly controlled. Injuries may include electrocution, burns, crushing, cutting, lacerating, amputating or fracturing body parts.

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

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ABOUT THE STANDARD

The OSHA standard for The Control of Hazardous Energy (Lockout/Tagout), Title 29 Code of Federal Regulations (CFR) Part 1910.147, addresses the practices and procedures necessary to disable machinery or equipment, thereby preventing the release of hazardous energy while employees perform servicing and maintenance activities. The standard outlines measures for controlling hazardous energies — electrical, mechanical, hydraulic, pneumatic, chemical, thermal and other energy sources. In addition, 29 CFR 1910.333 sets forth requirements to protect employees working on electric circuits and equipment. This

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,532	1,368	$20,728,257	*Total for All Industries*
753	410	$3,626,384	33 / Manufacturing (part 3 of 3)
694	377	$5,685,548	32 / Manufacturing (part 2 of 3)
439	211	$7,821,217	31 / Manufacturing (part 1 of 3)
159	97	$858,675	42 / Wholesale Trade
92	49	$834,833	56 / Administrative and Support and Waste Management and Remediation Services
65	38	$335,529	81 / Other Services (except Public Administration)
41	23	$184,764	44 / Retail Trade (part 1 of 2)
38	29	$217,636	23 / Construction
34	18	$185,141	11 / Agriculture, Forestry, Fishing and Hunting
32	18	$197,621	49 / Transportation and Warehousing (2 of 2)

section requires workers to use safe work practices, including lockout and tagging procedures. These provisions apply when employees are exposed to electrical hazards while working on, near, or with conductors or systems that use electric energy.

29 CFR 1910.147 gives each employer the flexibility to develop an energy control program suited to the needs of the particular workplace and the types of machines and equipment being maintained or serviced. This is generally done by affixing the appropriate lockout or tagout devices to energy isolating devices and by de-energizing machines and equipment:

- If an energy isolating device is not capable of being locked out, the employer's energy control program shall utilize a tagout system.
- If an energy isolating device is capable of being locked out, the employer's energy control program shall utilize lockout, unless the employer can demonstrate that the utilization of a tagout system will provide full employee protection.
- When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

TRAINING

The standard mandates training for workers, to ensure that they know, understand, and are able to follow the applicable provisions of the hazardous energy control procedures:

- 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.
- Specific procedures and limitations relating to tagout systems where they are allowed.
- Retraining of all employees to maintain proficiency or introduce new or changed control methods.

Resources

OSHA's Lockout/Tagout Fact Sheet1 describes the practices and procedures necessary to disable machinery or equipment to prevent the release of hazardous energy. CS

1 https://bit.ly/3YEm2gB

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Eye and Face Protection

Regulation 29 CFR 1926.102

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. According to the U.S. Bureau of Labor Statistics, there were 38,390 eye-related injury or illness cases that resulted in at least one day away from work from 2021-2022.[1] The direct and indirect cost of an occupational vision loss incident can be upwards of $160,000 according to the Occupational Safety and Health Administration (OSHA) Safety Pays Estimator.[2]

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ABOUT THE STANDARD

Personal protective equipment (PPE) for the eyes and face is designed to prevent or lessen the severity of injuries to workers when engineering or administrative controls are not feasible or effective in reducing these exposures to acceptable levels.

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.

The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

The employer shall ensure that each affected employee uses eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

The employer shall ensure that each affected employee who wears prescription lenses while engaged in

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,049	2,048	$7,507,349	*Total for All Industries*
2,019	2,019	$7,423,954	23 / Construction
8	8	$19,910	56 / Administrative and Support and Waste Management and Remediation Services
7	7	$20,404	42 / Wholesale Trade
4	4	$16,640	53 / Real Estate and Rental and Leasing
3	3	$8,751	33 / Manufacturing (part 3 of 3)
2	2	$2,544	54 / Professional, Scientific, and Technical Services
2	1	$5,743	22 / Utilities
1	1	$4,688	32 / Manufacturing (part 2 of 3)
1	1	$3,108	48 / Transportation and Warehousing (1 of 2)
1	1	$1,607	11 / Agriculture, Forestry, Fishing and Hunting

operations that involve eye hazards wears eye protection that incorporates the prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

Eye and face PPE shall be distinctly marked to facilitate identification of the manufacturer.

Eye protection shall meet the following minimum requirements:

- They shall provide adequate protection against the particular hazards for which they are designed.
- They shall be reasonably comfortable when worn under the designated conditions.
- They shall fit snugly and shall not unduly interfere with the movements of the wearer.
- They shall be durable.
- They shall be capable of being disinfected.
- They shall be easily cleanable.

BEST PRACTICES FOR EYE AND FACE PROTECTION

According to the National Institutes of Occupational Health and Safety (NIOSH), the following steps can be taken to prevent eye injuries.[3]

- Identify eye hazards before work begins and wear the correct eye protection for those hazards.
- Wear safety glasses marked with "Z87+" on the frame or lenses, as an indicator of impact protection.
- Use vented goggles for dust, such as cement dust, and non-vented goggles for chemicals.
- Use face shields with safety glasses or goggles for protection from flying objects or chemical splashes.
- When welding, use a welding helmet or goggles with the correct lens shade for the job (shade 10–14 for arc welding; 4–8 for gas welding; and 3–6 for torch brazing).
- Helpers and bystanders also need UV protection.
- Take care of your eye protection and replace it when damaged.
- Do not rub your eyes if injured by small particles such as wood, cement or drywall dust, or chemicals. Use the eyewash station. Rinse with clean water for at least 15 to 20 minutes.
- Get medical help for cuts, punctures, and objects in the eyes such as metal slivers, rebounding nails or wood shavings. Do not wash out your eyes or try to remove objects yourself.

KEEPING WORKERS SAFE

There are four things employers and workers can do to prevent eye injuries, according to the American Optometric Association.[4]

1. Know the eye safety dangers in the workplace.
2. Eliminate hazards before starting work by using machine guards, work screens or other engineering controls.
3. Use proper eye protection.
4. Keep safety eyewear in good condition and have it replaced if it becomes damaged. CS

References

1 https://tinyurl.com/2ydxsc86
2 https://www.osha.gov/safetypays/estimator
3 www.cdc.gov/niosh/docs/2022-136/2022-136.pdf
4 https://tinyurl.com/bddcmkec

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Fall Protection Training

Regulation 29 CFR 1926.503

Falls cause more deaths in construction than any other hazard. Hundreds of workers die from falls each year. Many construction workers perform tasks at a height that requires protection from fall hazards. Having a serious injury or death occur at work affects everyone at a worksite. A fall can occur in a split second without any time for the worker to react. Deaths from falls can be prevented by training all workers to recognize hazards and to use fall protection equipment correctly, along with providing that equipment and planning to get the job done safely.

The Occupational Safety and Health Administration (OSHA) recommends that fall prevention training should take place in short sessions. The agency provides Toolbox Talks that should last approximately 5-10 minutes. Additionally, sessions should be participatory. When workers attending a training session/Toolbox Talk are able to ask questions and discuss the topic, it increases the likelihood they will remember the information. As with other work hazards, workers should be trained in a language they understand.

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ABOUT THE STANDARD

Employers must train all employees who might be exposed to fall hazards. The training program must include hazard recognition and ways to minimize or eliminate workplace fall hazards. The training must be done by a competent person who is qualified to teach:

- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The use and operation of

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,104	2,056	$4,470,190	*Total for All Industries*
2,050	2,003	$4,348,478	23 / Construction
14	14	$29,411	33 / Manufacturing (part 3 of 3)
11	11	$44,268	22 / Utilities
5	5	$8,371	42 / Wholesale Trade
5	5	$4,353	53 / Real Estate and Rental and Leasing
4	4	$6,000	56 / Administrative and Support and Waste Management and Remediation Services
4	3	$4,000	72 / Accommodation and Food Services
2	2	$5,469	62 / Health Care and Social Assistance
2	2	$0	81 / Other Services (except Public Administration)
1	1	$5,358	92 / Public Administration

guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.

- The role of each employee in the safety monitoring system when this system is used.
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
- The role of employees in fall protection plans.

Conducting training isn't sufficient for compliance with the standard. The employer must keep a written certification record that lists the names of trainees, the dates they received training and the signature of the trainer or employer. If the employer relies on training conducted by another employer or completed prior to the effective date in the record, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

If an employee has received training but the employer has reason to believe that they do not have adequate understanding of fall hazard recognition and fall prevention procedures, the employer must retrain that employee. Circumstances where retraining is required include:

- Changes in the workplace that render previous training obsolete
- Changes in the types of fall protection systems or equipment used
- 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

KEEPING WORKERS SAFE

In addition to training workers on the proper use of fall protection equipment, construction industry falls can be prevented by training and assigning a person to inspect fall protection equipment before each use. Other measures include ensuring the correct anchorage for fall arrest systems; extending the side rails of the ladder 3 feet above a roof edge; using a "buddy system" when working at heights and monitoring weather conditions.

Many of construction industry fatalities caused by falls involve roofs. Some factors that contribute to that are: worker inexperience or lack of training; a lack of a fall protection program or a personal fall arrest system; failure to use personal fall protection; an incorrect fall arrest system anchorage method; a lack of a fall arrest system lanyard connection point; incorrect working length of a fall arrest system lifeline; working alone when working at elevations and working during inclement weather, such as wind or heavy rain. CS

Resources

1 *Fall Prevention Training Guide: A Lesson Plan for Employers:* https://bit.ly/3YIs2F5

2 *Prevent Construction Falls from Roofs, Ladders & Scaffolds:* https://www.cdc.gov/niosh/docs/2019-128/pdfs/2019-128Revised112019.pdf

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Fall Protection

Regulation 29 CFR 1926.501

Falls are the leading cause of death in construction. In 2022, nearly 1 in 5 workplace deaths occurred in the construction industry and 38.4 percent of these deaths were due to falls, slips, and trips. The construction industry accounted for close to half, 47.4 percent, of all fatal falls, slips, and trips in 2022. These deaths are preventable.[1]

The importance of fall protection cannot be stressed enough. Fall hazards are present at most construction worksites and many workers are exposed to these hazards on a daily basis. A fall hazard is anything that could cause a worker to lose their balance or lose bodily support and result in a fall. Any walking or working surface can be a potential fall hazard. Any time someone is working at a height of four feet or more, they are at risk. Falls from heights are the leading cause of fatalities in construction, while falls on the same level (slips and trips) are one of the leading causes of injuries.


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Falls are one OSHA's Fatal Four – the top four categories of hazards that cause construction industry fatalities. Most construction worker deaths (60+%) can be attributed to the Fatal Four. OSHA is understandably focused on these hazards as a result. More than half of Focus Four fatalities are caused by falls to a lower level, making that the most common cause of death among construction personnel.

ABOUT THE STANDARD

Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls.

OSHA requires that fall

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
7,144	6,984	$47,020,533	*Total for All Industries*
6,969	6,812	$45,685,494	23 / Construction
30	28	$254,857	33 / Manufacturing (part 3 of 3)
29	29	$289,197	22 / Utilities
24	24	$122,641	56 / Administrative and Support and Waste Management and Remediation Services
20	20	$162,577	42 / Wholesale Trade
12	12	$58,893	53 / Real Estate and Rental and Leasing
12	12	$55,809	54 / Professional, Scientific, and Technical Services
8	8	$54,015	72 / Accommodation and Food Services
8	8	$47,152	32 / Manufacturing (part 2 of 3)
5	5	$24,970	44 / Retail Trade (part 1 of 2)

protection be provided at elevations of six feet in the construction industry. In addition, fall protection must be provided when someone is working over dangerous equipment and machinery, regardless of the fall distance.

1926.501 is a robust standard with many provisions and specifications. Among them:

Personal fall arrest systems, guardrail systems or safety net systems must be used to protect employees who are potentially exposed to falls of six feet or more while they are:

- On ramps, runways, walkways, the edge of excavations, wells, pits, shafts or above dangerous equipment
- Performing overhand bricklaying and related work
- Engaged in roofing activities on low-slope roofs, with unprotected sides and edges (warning line systems may also be used)
- Engaged in residential construction activities
- On a walking/working surface (horizontal and vertical surface) with an unprotected side or edge
- Constructing a leading
- In a in a hoist area
- Near holes, including skylights (covers may also be used)
- On the face of formwork or reinforcing steel

PREVENTING FALLS

Each year, OSHA partners with the National Institute for Occupational Safety and Health (NIOSH), and CPWR-The Center for Construction Research and Training in a National Safety Stand-Down to Prevent Falls in Construction. This is held the first week of May, and is aimed at preventing fatal falls from roofs, ladders and scaffolds among residential construction contractors.

A Safety Stand-Down is a voluntary event for employers to talk directly to employees about safety. Any workplace can hold a stand-down by taking a break to focus on fall hazards and reinforcing the importance of fall prevention. It can also be an opportunity for employees to talk to management about fall and other job hazards they see.

Anyone who wants to prevent hazards in the workplace can participate in the Stand-Down. In past years, participants included commercial construction companies of all sizes, residential construction contractors, sub- and independent contractors, highway construction companies, general industry employers, the U.S. Military, other government participants, unions, employer's trade associations, institutes, employee interest organizations, and safety equipment manufacturers.

Companies can conduct a Safety Stand-Down by taking a break to have a toolbox talk or another safety activity such as conducting safety equipment inspections, developing rescue plans, or discussing job specific hazards. Managers are encouraged to plan a stand-down that works best for their workplace anytime.

For information on how to participate in the National Safety Stand-Down, visit www.osha.gov/stop-falls-stand-down. CS

Resources

1 Five Ways to Prevent Workplace Falls (video) https://bit.ly/3AnSZUy

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Hazard Communication, General Industry

Regulation 29 CFR 1910.1200

Manufacturing, construction, mining, warehousing, welding, transportation and oil and gas are among the industries in which hazardous chemicals are routinely used. Exposure to toxic substances can cause both short-term health emergencies and long-term illnesses, including severe burns and inflammation, respiratory difficulties and cancer. In order to ensure worker safety, information about the identities and hazards of the chemicals must be available and understandable to workers. The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) requires the development and dissemination of such information.

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ABOUT THE STANDARD

HCS requires chemical manufacturers and importers to evaluate chemicals produced in their workplaces, or imported by them, and classify the chemicals in accordance with this section. For each chemical, the chemical manufacturer or importer shall determine the hazard classes, and, where appropriate, the category of each class that apply to the chemical being classified. Major provisions of the standard include:

- When classifying mixtures, they produce or import, chemical manufacturers and importers of mixtures may rely on the information provided on the current safety data sheets of the individual ingredients, except where the chemical manufacturer or importer knows, or in the exercise of reasonable diligence should know, that the safety data sheet misstates or omits information required by this section.
- Employers shall develop, implement, and maintain at each workplace, a written hazard communication program which includes a list of the hazardous chemicals known to be present

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
3,201	1,745	$5,146,902	Total for All Industries
643	366	$1,219,069	33 / Manufacturing (part 3 of 3)
543	284	$750,181	23 / Construction
384	207	$655,256	32 / Manufacturing (part 2 of 3)
245	127	$230,242	81 / Other Services (except Public Administration)
227	109	$352,268	72 / Accommodation and Food Services
146	86	$193,313	44 / Retail Trade (part 1 of 2)
144	74	$227,309	42 / Wholesale Trade
143	84	$277,570	56 / Administrative and Support and Waste Management and Remediation Services
131	78	$260,043	31 / Manufacturing (part 1 of 3)
88	49	$202,797	48 / Transportation and Warehousing (1 of 2)

using a product identifier that is referenced on the appropriate safety data sheet.

- Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site) shall additionally ensure that the hazard communication programs developed and implemented include the following:
  - The methods the employer will use to provide the other employer(s) on-site access to safety data sheets for each hazardous chemical the other employer(s)' employees may be exposed to while working.
  - The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies.
  - The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace.
  - The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director, in accordance with the requirements of 29 CFR 1910.1020 (e).
- Where employees must travel between workplaces during a work shift, i.e., their work is carried out at more than one geographical location, the written hazard communication program may be kept at the primary workplace facility.
- The chemical manufacturer, importer or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Hazards not otherwise classified do not have to be addressed on the container. Where the chemical manufacturer or importer is required to label, tag or mark the following information shall be provided:
  - Signal word
  - Hazard statement(s)
  - Pictogram(s)
  - Precautionary statement(s)
  - Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party
  - Product identifier and words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical
- The employer shall ensure the written materials are readily

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accessible to the employees in their work area throughout each work shift

ABOUT THE STANDARD

The Hazard Communication Standard (HCS) is aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). It provides a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. This update will also help reduce trade barriers and result in productivity improvements for American businesses that regularly handle, store, and use hazardous chemicals while providing cost savings for American businesses that periodically update safety data sheets and labels for chemicals covered under the hazard communication standard.

MAJOR PROVISIONS OF THE STANDARD

In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. OSHA's Hazard Communication Standard (HCS) requires the development and dissemination of such information:

- Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and safety data sheets to convey the hazard information to their downstream customers.
- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.
- Hazard classification: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.
- Labels: Chemical manufacturers and importers are 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: Must have a specified 16-section format. The chemical manufacturer, importer, or distributor shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged or marked. Hazards not otherwise classified do not have to be addressed on the container.
- Information and training: Employers are required to train workers on the labels elements and safety data sheets format to facilitate recognition and understanding. **CS**

Resources

1 OSHA Fact Sheet: Steps to an Effective Hazard Communication Program for Employers That Use Hazardous Chemicals: https://www.osha.gov/sites/default/files/publications/OSHA3696.pdf

2 OSHA Hazard Communication: Small Entity Compliance Guide for Employers That Use Hazardous Chemicals https://www.osha.gov/sites/default/files/publications/OSHA3695.pdf

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Respiratory Protection, General Industry

Regulation 29 CFR 1910.134

Respirators protect workers against insufficient oxygen environments, harmful dusts, fogs, smokes, mists, gases, vapors and sprays. These hazards may cause cancer, lung impairment, diseases or death. Compliance with the Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard could avert hundreds of deaths and thousands of illnesses annually.

Respirators protect the user in two basic ways. The first is by the removal of contaminants from the air. Respirators of this type include particulate respirators, which filter out airborne particles, and air-purifying respirators with cartridges/canisters which filter out chemicals and gases. Other respirators protect by supplying clean respirable air from another source. Respirators that fall into this category include airline respirators, which use compressed air from a remote source, and self-contained breathing apparatus (SCBA), which include their own air supply.

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ABOUT THE STANDARD

The primary objective of the standard is to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

- A respirator shall be provided to each employee when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program.
- In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employ-

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,476	1,054	$4,365,289	*Total for All Industries*
781	324	$1,121,771	33 / Manufacturing (part 3 of 3)
382	156	$812,002	32 / Manufacturing (part 2 of 3)
360	159	$466,168	23 / Construction
199	64	$192,742	81 / Other Services (except Public Administration)
189	96	$660,861	62 / Health Care and Social Assistance
91	41	$160,457	56 / Administrative and Support and Waste Management and Remediation Services
89	38	$127,751	42 / Wholesale Trade
61	22	$74,971	71 / Arts, Entertainment, and Recreation
50	17	$42,751	44 / Retail Trade (part 1 of 2)
131	78	$260,043	31 / Manufacturing (part 1 of 3)
88	49	$202,797	48 / Transportation and Warehousing (1 of 2)

er, the employer shall establish and implement a written respiratory protection program with worksite-specific procedures. The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. The employer shall include in the program the following provisions of this section, as applicable:

- Procedures for selecting respirators for use in the workplace
- Medical evaluations of employees required to use respirators
- Fit testing procedures for tight-fitting respirators
- Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators
- Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators
- Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations
- Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance
- Procedures for regularly evaluating the effectiveness of the program

• An employer may provide respirators at the request of employees or permit employees to use their own respirators, if the employer determines that such respirator use will not in itself create a hazard.

• In addition, the employer must establish and implement those elements of a written respiratory protection program necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user. Exception: Employers are not required to include in a written respiratory protection program those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

• The employer shall designate a program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

• The employer shall provide respirators, training and medical evaluations at no cost to the employee.

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- The employer is required to evaluate respiratory hazard(s) in the workplace, identify relevant workplace and user factors, and base respirator selection on the respiratory hazard(s) to which the worker is exposed.
- The employer shall select a NIOSH-certified respirator. The respirator shall be used in compliance with the conditions of its certification.
- The employer shall identify and evaluate the respiratory hazard(s) in the workplace; this evaluation shall include a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Where the employer cannot identify or reasonably estimate the employee exposure, the employer shall consider the atmosphere to be immediately dangerous to life or health (IDLH).
- The employer shall select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
- The employer shall provide the following respirators for employee use in IDLH atmospheres:
  - A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or a combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
  - Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.
  - All oxygen-deficient atmospheres shall be considered IDLH. Exception: If the employer demonstrates that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges specified in Table II of this section of the Standard (i.e., for the altitudes set out in the table), then any atmosphere-supplying respirator may be used.
- For atmospheres that are not IDLH, the employer shall provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations. CS

Resources

1 OSHA Poster: 7 Steps to Correctly Wear a Respirator at Work https://www.osha.gov/sites/default/files/publications/OSHA4015.pdf

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Scaffolding

Regulation 29 CFR 1926.451

Millions of workers in the construction industry work on scaffolds. Protecting these workers from scaffold-related incidents can prevent injuries and deaths attributed to falls from scaffolding each year. Scaffold incidents causing injury or death to workers are often the result of either the planking or support giving way, by the worker slipping, the absence of fall protection, or being struck by a falling object. These incidents can be avoided by compliance with Occupational Safety and Health Administration (OSHA) standards.

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ABOUT THE STANDARD

The major provisions of 1926.451 are:

- With exceptions, each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.
- Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.
- Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.
- Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,795	1,364	$9,528,430	*Total for All Industries*
2,698	1,311	$9,164,470	23 / Construction
30	13	$102,436	42 / Wholesale Trade
12	5	$62,348	53 / Real Estate and Rental and Leasing
11	7	$18,444	33 / Manufacturing (part 3 of 3)
8	6	$59,785	32 / Manufacturing (part 2 of 3)
6	3	$21,477	71 / Arts, Entertainment, and Recreation
5	2	$10,298	11 / Agriculture, Forestry, Fishing and Hunting
5	1	$14,377	31 / Manufacturing (part 1 of 3)
4	3	$18,528	72 / Accommodation and Food Services
3	2	$15,494	44 / Retail Trade (part 1 of 2)

shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

- The stall load of any scaffold hoist shall not exceed 3 times its rated load.
- Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with paragraph (a) of this section.

Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:

- Each platform unit (e.g., scaffold plank, fabricated plank, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch (2.5 cm) wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).
- Where the employer makes the demonstration provided for in paragraph (b)(1)(i) of this section, the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9 1/2 inches (24.1 cm).
- Exception to paragraph (b)(1): The requirement in paragraph (b)(1) to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees performing scaffold erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe working conditions is required.
- With exceptions, each scaffold platform and walkway shall be at least 18 inches (46 cm) wide.
- Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches (30 cm) wide. There is no minimum width requirement for boatswains' chairs.
- Where scaffolds must be used in areas that the employer can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches (46 cm) wide, such platforms and walkways shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.
- The front edge of all platforms shall not be more than 14 inches (36 cm) from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used in accordance with paragraph (g) of this section to protect employees from falling.

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- The maximum distance from the face for outrigger scaffolds shall be 3 inches (8 cm).
- The maximum distance from the face for plastering and lathing operations shall be 18 inches (46 cm).
- Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches (15 cm).
- Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches (30 cm) unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees and/or materials without tipping, or has guardrails which block employee access to the cantilevered end.
- Each platform greater than 10 feet in length shall not extend over its support more than 18 inches (46 cm), unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end.
- On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate support surface. This provision does not preclude the use of common support members, such as "T" sections, to support abutting planks, or hook on platforms designed to rest on common supports.
- On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches (30 cm) unless the platforms are nailed together or otherwise restrained to prevent movement. CS

Resources

1 A Guide to Scaffold Use in the Construction Industry https://www.osha.gov/sites/default/files/publications/osha3150.pdf

FREQUENTLY CITED OSHA STANDARDS FOR CONSTRUCTION

Ladders

Regulation 29 CFR 1926.1053

Falls from ladders can result in serious injuries, permanent disability and death. Injuries related to ladders can be traced to a variety of causes. Overreaching instead of descending and moving the ladder to a different location is a common cause. Using a ladder when some other piece of equipment is called for – like a scissor lift, mobile elevated platform or scaffolding – can also result in injuries. A ladder that is in poor condition or is not designed to handle the weight of the user is a hazard. So is placing the base of the ladder on unlevel or soft ground, as well as failing to maintain a 3-point contact with it.

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ABOUT THE STANDARD

The standard states that ladders shall be capable of supporting the following loads without failure:

- Each self-supporting portable ladder: At least four times the maximum intended load, except that each extra-heavy-duty type 1A metal or plastic ladder shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction. Ladders built and tested in conformance with the applicable provisions of appendix A of this subpart will be deemed to meet this requirement.
- Each portable ladder that is not self-supporting: At least four times the maximum intended load, except that each extra-heavy-duty type 1A metal or

OSHA Enforcement from October 2022 through September 2023:

CITATIONS	INSPECTIONS	PENALTY	INDUSTRY CLASSIFICATION
2,925	2,504	$9,599,734	*Total for All Industries*
2,867	2,454	$9,368,539	23 / Construction
10	9	$19,828	33 / Manufacturing (part 3 of 3)
10	8	$29,855	22 / Utilities
9	7	$100,669	42 / Wholesale Trade
6	6	$12,374	72 / Accommodation and Food Services
5	5	$11,282	53 / Real Estate and Rental and Leasing
3	3	$9,242	56 / Administrative and Support and Waste Management and Remediation Services
3	2	$10,626	11 / Agriculture, Forestry, Fishing and Hunting
3	2	$5,150	81 / Other Services (except Public Administration)
2	2	$12,590	71 / Arts, Entertainment, and Recreation

plastic ladders shall sustain at least 3.3 times the maximum intended load. The ability of a ladder to sustain the loads indicated in this paragraph of the standard shall be determined by applying or transmitting the requisite load to the ladder in a downward vertical direction when the ladder is placed at an angle of 75 1/2 degrees from the horizontal. Ladders built and tested in conformance with the applicable provisions of appendix A will be deemed to meet this requirement.

- Each fixed ladder: At least two loads of 250 pounds each, concentrated between any two consecutive attachments (the number and position of additional concentrated loads of 250 pounds each, determined from anticipated usage of the ladder, shall also be included), plus anticipated loads caused by ice buildup, winds, rigging, and impact loads resulting from the use of ladder safety devices. Each step or rung shall be capable of supporting a single concentrated load of at least 250 pounds applied in the middle of the step or rung. Ladders built in conformance with the applicable provisions of appendix A will be deemed to meet this requirement.
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.
- The rungs of individual-rung/step ladders shall be shaped such that employees' feet cannot slide off the end of the rungs.
- The rungs and steps of fixed metal ladders manufactured after March 15, 1991, shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.
- The rungs and steps of portable metal ladders shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.
- Ladders shall not be tied or fastened together to provide longer sections unless they are specifically designed for such use.
- A metal spreader or locking device shall be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.
- When splicing is required to obtain a given length of side rail, the resulting side rail must be at least equivalent in strength to a one-piece side rail made of the same material.
- Except when portable ladders are used to gain access to fixed ladders (such as those on utility towers, billboards, and other structures where the bottom of the fixed ladder is elevated to limit access), when two or more separate ladders are used to reach an elevated work area, the ladders shall be offset with a platform or landing between the ladders.
- Ladder components shall be surfaced so as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

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- Wood ladders shall not be coated with any opaque covering, except for identification or warning labels which may be placed on one face only of a side rail.

Where the total length of a climb equals or exceeds 24 feet, fixed ladders shall be equipped with one of the following:

- Ladder safety devices, or
- Self-retracting lifelines, and rest platforms at intervals not to exceed 150 feet, or
- A cage or well, and multiple ladder sections, each ladder section not to exceed 50 feet in length. Ladder sections shall be offset from adjacent sections, and landing platforms shall be provided at maximum intervals of 50 feet.

Cages for fixed ladders shall conform to all of the following:

- Horizontal bands shall be fastened to the side rails of rail ladders, or directly to the structure, building, or equipment for individual-rung ladders.
- Vertical bars shall be on the inside of the horizontal bands and shall be fastened to them.

PROTECTING WORKERS WHO USE EXTENSION LADDERS

Construction workers who use extension ladders risk permanent injury or death from falls and electrocutions. These hazards can be eliminated or substantially reduced by following good safety practices. These include:

- Planning ahead to get the job done safely.
- Having a competent person must visually inspect all extension ladders before use for any defects such as: missing rungs, bolts, cleats, screws and loose components.
- Allowing sufficient room to step off the ladder safely.
- Keeping the area around the bottom and the top of the ladder clear of equipment, materials and tools.
- Setting up the ladder at the proper angle: When a ladder is leaned against a wall, the bottom of the ladder should be one-quarter of the ladder's working length away from the wall. For access to an elevated work surface, extend the top of the ladder three feet above that surface or secure the ladder at its top. CS

Resources

1 OSHA Fact Sheet: Reducing Ladder Falls in Construction: Safe Use of Extension Ladders: https://www.osha.gov/sites/default/files/publications/OSHA3660.pdf