



Best Practices for Fixed Ladder Safety

Scope

The scope of this best practice is to provide guidelines for injury prevention by safely using fixed ladders. Fixed ladder safety is included in OSHA's General Industry Standards 29 CFR Part 1910 Subpart D – Walking-Working Surfaces revised in 2017 and OSHA Construction Standards 29 CFR Part 1926.1053 (Subpart X – Stairways and Ladders). The reader must be thoroughly familiar with these regulations as they apply to fixed ladders. In cases where the standards may differ, the most stringent and safer of the standards will apply.

Key Points

- Cages and wells on fixed ladders are being phased out as fall protection per the timeline described in this document.
- Ladders shall be inspected before use for defects and other hazards, such as slippery surfaces. Also, perform periodic inspections/audits of fixed ladders.
- Maintain three points of contact when on a ladder performing work.
- Use the "belt buckle rule" when on a ladder. This means the centerline of the body must be maintained between the side rails.

Definitions

Fixed Ladders – Ladders that are permanently attached to a structure, building, or equipment. These include individual-rung ladders, but not ship stairs, step bolts, or manhole steps.

Fixed Ladder Extending More than 24 Feet above a Lower Level - For purposes of §1910.28(b)(9), the employer must measure the distance from the ground/lower level to the top of the fixed ladder, defined by the top rung. If that distance exceeds 24 feet, regardless of the length of the ladder, the employer must equip the ladder with fall protection per the schedule indicated.

Personal Fall Arrest System - A system that arrests/stops a fall before the worker contacts a lower level. Consists of a body harness, anchorage, and connector, and may include a lanyard, deceleration device, lifeline, or a suitable combination.

Ladder Safety System - A system attached to a fixed ladder designed to eliminate or reduce the possibility of a worker falling off the ladder. A ladder safety system usually consists of a carrier, safety sleeve, lanyard, connectors, and body harness. Cages and wells are not considered ladder safety systems.



2017 Changes to U.S. Regulations, 1926 Subpart X

As regards fixed ladders, the new rule phases in a requirement for employers to have ladder safety or personal fall arrest systems for fixed ladders that extend more than 24 feet.

The new rule also phases out the use of cages or wells for fall protection under the following timeline. Note that the cages or wells do not have to be removed. Also note that the 24 foot distance doesn't apply to the ladder length, but the distance above the lower level:

- Starting November 19, 2018, all new fixed ladders and replacement ladder/ladder sections extending more than 24 feet above a lower level must have a ladder safety or personal fall protection system.
- For existing fixed ladders extending more than 24 feet above a lower level and installed before November 19, 2018, employers must install a cage, well, ladder safety system, or personal fall arrest system on fixed ladders that do not have any fall protection.
- Starting November 18, 2036, all ladders extending more than 24 feet above a lower level must have a ladder safety or personal fall arrest system. Cages will not be considered fall protection.

There are OSHA interpretations regarding what defines a "lower level." For example, a small landing/rest platform for a ladder that starts, say, 100 feet above grade does not qualify as the "lower level." The lower level would be grade 100 feet below since the worker could fall past the landing. Similarly, multiple offset sections of fixed ladders should be evaluated based on height above lower level versus height from a landing/rest platform. See these OSHA interpretations:

<https://www.osha.gov/laws-regs/standardinterpretations/2019-05-17>

<https://www.osha.gov/laws-regs/standardinterpretations/2019-10-18>

General Requirements and Best Practices

Inspect ladders prior to each use. Do not use ladders with slippery material on the rungs, rails, or feet or having structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components. These shall be immediately marked or be tagged with "Dangerous-Do Not Use" or similar language and shall be withdrawn from service until repaired.

Fixed ladders that are used to gain access to a platform must have a 42" grab bar extension above the top of the access level. Ensure that there is at least a 7" stand-off distance with no obstruction behind the ladder. Additional critical dimensions are included in the regulation.

Safe ladder use includes the following:

- Use the ladder as intended;
- Ladders shall not be used by more than one employee at a time unless the ladder is specifically designed for more than one climber;
- When ascending or descending, the user must face the ladder;



- At least one hand must be free to grasp the ladder at all times. Maintain at least three points of contact with the ladder (two feet and one hand or two hands and one foot) when working from a ladder;
- Shoes and rungs shall be free of mud, soil, paint, ice, or other slippery materials;
- Supplies or equipment shall not be hand carried by the worker on the ladder; instead, a rope, block, tool belt, or pulley system shall be used to carry tools or equipment;
- When working to the side of a ladder, the centerline of the body must be maintained between the side rails. Do not overreach or lean too far to one side. Follow the “belt buckle rule,” keeping one’s belt buckle between the rails; and
- If one feels sick or dizzy while climbing or standing on a ladder, do not try to climb down in a hurry. Drape your arms around the rungs and rest your head against the ladder until you feel better. Then climb down slowly.

Self-Closing Gates

- These are often called swinging gates and are used to protect workers from falls through floor openings and open-sided platforms to access fixed ladders, for example. However, in addition to swinging gates, there are automatically closing sliding gates that are currently manufactured, readily available, and in use to protect workers from falling into ladderway floor and platform holes. OSHA believes these sliding gates provide protection that is as effective as the protection swinging gates provide. Therefore, to give employers the flexibility to use the type of automatically closing gate that works best for them, OSHA uses the term “self-closing” gates.
- Must be self-closing;
- Must either slide or swing away from the hole; and
- Be equipped with top rails and midrails or equivalent intermediate members that meet the OSHA requirements.
- Chains to protect openings are not allowed.

Training

The rule adds a requirement that employers ensure workers who use personal fall protection are trained, and retrained as necessary, about fall and equipment hazards, including how to use fall protection systems and understand their limitations. A qualified person must train these workers to correctly: identify and minimize fall hazards; use personal fall protection systems; and maintain, inspect, and store equipment or systems used for fall protection.

When there is a change in workplace operations or equipment, or the employer believes that a worker would benefit from additional training based on a lack of knowledge or skill, then the worker must be retrained. The training must be provided in a language and vocabulary that workers understand. Otherwise, best practice is to conduct recurring training every three years.



Inspections

Best practice is to perform routine inspections of fixed ladders for mechanical integrity and unauthorized modifications, obstructions, etc. One method is to include the fixed ladder inspection as part of routine tank integrity inspections when the fixed ladder is attached to a tank. Another best practice is to include fixed ladders in a preventive maintenance program. Also, best practice is to have occasional audits/inspections that focus specifically on fixed ladders, based on the criteria contained within this document, OSHA required dimensions, and any other issues pertinent to the site.

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