



Workplace Safety

Fall Protection Spotlight: Safety Railings and OSHA Guardrail Requirements

Gillian Scott | Nov 08, 2018

What You Need to Know

Fall protection is covered under OSHA's walking-working surfaces standards.

A 2017 update to the standards provides flexibility for employers providing fall protection, as well as consistency across industries.

In OSHA's standards, the terms guardrail, handrail and stair rail all mean different things.

From stairs to platforms to openings in the floor, there are many places in a facility where employees might slip and fall if not adequately protected. Using safety railing and guardrail systems is one way to help prevent falls and their resulting injuries.

In 2018, fall protection once again topped the list of *most-cited Occupational Safety and Health Administration (OSHA) violations*, with more than 7,200 violations cited. Common citations are, among other things, failure to provide fall protection in the form of guardrail, safety net or personal fall arrest systems.

What Are OSHA's Guardrail Requirements?

Fall protection in general—and the use of railings and guardrail systems in particular—is covered under OSHA's walking and working surfaces rule, 1910 Subpart D, which was updated in 2017.

Karen Hamel, a regulatory compliance specialist and technical writer at New Pig Corp., *writes in EHS Today* that the old rule emphasized the use of guardrails. "Under the old rule, which was established in 1971, guardrails were the primary method of fall protection that employers were required to use when guarding against fall hazards," she says. "The new rule is performance-based, acknowledging that guardrails aren't always the best way to protect workers from falls."

A variety of provisions in the 2017 final rule cover when guardrails and railings should be used and how they should be constructed.

For instance, OSHA standard **29 CFR 1910.23** covers requirements for ladders and includes information on when handrails are required on mobile ladder stands or platforms (when they have a top step height of 4 feet or more) and how high a railing must be (29.5 inches for stands with a top height of 4 feet or more, 36 inches for stands with a top step of 10 feet or more).

In addition, OSHA standard **29 CFR 1910.28**, duty to have fall protection and falling object protection, states that fall protection must be provided to any employee working on a “walking-working surface with an unprotected side or edge that is 4 feet or more above the lower level.” That fall protection could include guardrails, safety net systems or personal fall protection systems.

Confused about harnesses? Get help. Read “How to Choose the Right PPE: Fall Protection Harness.”

Common Sites for Injuries from Falls

Where do falls in the workplace happen too often? Ed Wieczorek, former director of marketing and quality manager at US Netting, outlines fall hazards in an *article for Safety and Health Magazine*. Areas where dangerous falls could occur include:

- Mezzanine areas
- Wall and floor openings, such as pits, skylights and ladder openings
- Vats containing acids or other chemicals
- Around major equipment, including hoppers, grinders and crushers
- Loading docks

Wieczorek notes that falling or flying debris is another hazard that may need to be guarded against, either with personal protective equipment like hard hats and steel-toe boots or with safety netting, debris nets or even blast blanket systems.

OSHA Fall Protection Update Brings Consistency, Increased Flexibility

Jennifer Stroschein of J. J. Keller & Associates says *in a white paper* that the 2017 update “incorporates technical information and guidance from American National Standards Institute (ANSI) and other national consensus standards, the National Fire Protection Association’s Life Safety Code, and the International Code Council’s International Building Code.

In addition, the update brought the standard more in line with the fall protection standard for the construction industry.

“OSHA says that fall protection measures in general industry were absent, inadequate, or simply unclear,” says Stroschein. “For example, old Subpart D recognized the use of guardrails as the primary method to protect employees against falls, but did not directly recognize that personal fall protection systems could also provide an effective means for employee protection.”

With the new flexibility provided by the update, employers can decide which fall protection method is most effective for their facility and their employees. “General industry employers can utilize guardrails and handrails, personal fall protection, designated areas, and safety net systems under the new standard,” says Stroschein.

Andrew Miller, president of Dakota Safety, *told EHS Today* that the added flexibility for employers is just one way the update aligned the requirements more closely with those for the construction industry. Other alignments included how guardrails are constructed and placed, and requirements for scaffolds, safety net systems and rope descent systems.

With the new rules in place, *OSHA expects* that 29 workplace fatalities and 5,842 lost-workday injuries will be prevented each year.

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Regulatory Compliance Specialist and Technical Writer, New Pig Corp.

Guardrail vs. Handrail vs. Top Rail

Say “guardrail” and many people may think of the barriers along highways that keep cars from sliding off the road. But in OSHA’s standards, it’s something different. OSHA also refers to handrails, stair rails, midrails and top rails.

OSHA’s *29 CFR 1910.29*, fall protection systems and falling object protection-criteria and practices, includes diagrams that help clear up any confusion about the differences:

- Guardrail: A system of railings used to prevent falls.
- Top rail: The top rail of a guardrail system. The top rail should be 42 inches (plus or minus 3 inches) over the walking-working surface, but may be over 45 inches in some instances.
- Midrail: The middle rail of a guardrail system, installed midway between the top rail and the walking-working surface.
- Handrail: A railing attached to a wall next to stairs, specifically designed to be grasped. Handrails must be between 30 and 38 inches from the leading edge of the stair to the top of the rail.
- Stair rail system: A railing system between a stairway and an open area. Stair rails installed before Jan. 17, 2017, must be at least 30 inches from the leading edge of the stair tread to the top surface of the top rail, while those installed on or after Jan. 17, 2017, must be at least 42 inches. A stair rail may serve as a handrail only when the top surface of the top rail is between 36 and 38 inches from the leading edge of the stair.

The regulation also lays out how guardrails and railings must be installed in different situations, how many pounds of pressure they must be able to withstand (200), what their surface must be like (smooth), and more.

The first step to determining if you need a guardrail, handrail or railing system—or a different type of fall protection system altogether—is to conduct a hazard assessment of your workplace. And once your fall protection is in place, it’s important to get workers up to speed on what it’s for and how it’s used. The updated OSHA walking-working surfaces standard includes a new requirement that workers be trained to recognize fall hazards, know what to do about them and know how to use fall protection equipment.

Workplace falls are common, but making sure your workplace follows OSHA’s updated standard is an important first step in keeping your employees safe.

For more detailed info on OSHA’s guidelines for fall protection, check out our *workplace injury infographic*.

Are handrails and guardrails part of your fall protection system?

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