

ROOF FALL PROTECTION 101

— AVOIDING THE CONFUSION —



Working on rooftops is a dangerous business. We often meet safety professionals who are confused about what the safe distance is away from the edge of a roof. Is it six feet or fifteen feet? Can a warning line be used? What exactly does OSHA say? OSHA Standards are often confusing and left for interpretation. There are also several Letters of Interpretation which are OSHA's way of answering formal questions sent in by users. Safety professionals need to be able to interpret the OSHA Standards that pertain to using fall protection on roofs. Here are the most important highlights and links to OSHA standards and Letters of Interpretation.

OSHA REQUIREMENTS FOR FALL PROTECTION ON ROOFS

In the Preamble to Part 1926 Subpart M (Volume 59 of the Federal Register, page 40683), OSHA determined in the rulemaking that there is no safe distance from an unprotected side or edge of a walking/working surface that would render protection unnecessary. However, in the rulemaking for Subpart M, OSHA determined that in certain very limited situations, warning lines are an appropriate means of protection.

THE FIVE MAIN POINTS OF ROOF FALL PROTECTION FOR THE CONSTRUCTION INDUSTRY:

- 1. NO SAFE DISTANCE FROM THE EDGE.**
OSHA has determined there is no safe distance from the edge of a roof that would render protection unnecessary. OSHA January 3, 2005 Letter of Interpretation
- 2. WARNING LINES ACCEPTABLE FOR ROOFERS ON LOW-SLOPED ROOFS**
OSHA 1926.501(b)(10) Allows roofers working on low-sloped roofs to have several additional fall protection options...including a combination of warning lines and safety monitor
OSHA 1926.502(f) For roofing on low-sloped roofs and using a warning line, 1926.502(f) states that the warning line needs to be 6 ft (and in some cases 10 feet) back from the edge and used with a safety monitor.
- 3. WARNING LINES ARE ACCEPTABLE IF USED 15 FEET FROM EDGE FOR NON-ROOFING TRADES**
OSHA states that warning lines 15 ft from the edge, combined with effective work rules, can be expected to prevent workers (non-roofing trades) from going past the line and approaching the edge. OSHA December 15, 2003 Letter of Interpretation
- 4. MUST HAVE A DOCUMENTED PLAN**
OSHA will consider the use of certain physical barriers that fail to meet the criteria for guardrail a de minimis violation of the guardrail criteria where the following are met:
 1. A warning line is used 15 feet or more from the edge;
 2. The warning line meets or exceeds the requirements in 1926.502(f)(2);
 3. No work or work related activity is to take place in the area between the warning line and the edge;
 4. The employer effectively implements a work rule (documented in a plan) prohibiting the employees from going past the warning line
- 5. DE MINIMIS CONDITIONS**
De minimis conditions are violations of standards that, for whatever reason, do not at the time of the inspection have an immediate relationship to safety and health and therefore are not included in the violation. OSHA July 23, 1996 Letter of Interpretation

ROOF FALL PROTECTION FOR GENERAL INDUSTRY:

2016 OSHA FINAL RULE: WALKING AND WORKING SURFACES

On November 17, 2016, OSHA published its final rule on Walking and Working Surfaces (General Industry 29 CFR 1910). This document can be downloaded by clicking here.

The final rule applies to all general industry workplaces and covers all walking-working surfaces, which include roofs. The final rule also has provisions affecting fall protection systems.

LOW SLOPE ROOF

Low Slope Roof is a new term OSHA added to the final rule and is defined as a roof with a slope less than or equal to a ratio of 4 in 12.

Final Rule 1910.28(b)(13) states the following regarding work on Low Sloped Roofs:

- 1. LESS THAN 6-FEET FROM THE EDGE**
Acceptable forms of fall protection are guard rails, nets, travel restraint or personal fall arrest systems.
- 2. 6-FEET TO LESS THAN 15-FEET FROM THE EDGE**
Acceptable forms of fall protection are guard rails, nets, travel restraint or personal fall arrest systems. Employer may use a designated area (warning line) when performing work that is both infrequent and temporary. A Designated Area is distinct portion of a walking-working surface delineated by a warning line in which work may be performed without additional fall protection.
- 3. 15-FEET OR MORE FROM THE EDGE**
Acceptable forms of fall protection are guard rails, nets, travel restraint or personal fall arrest systems. Employer is not required to provide any fall protection (including warning lines) if work is both infrequent and temporary, and they implement and enforce a work rule prohibiting employee from going within 15 feet of edge without using fall protection.



SOLUTIONS FOR SAFETY AND MEETING OSHA STANDARDS

The warning line itself, must meet certain criteria which for General Industry can be found in 1910.29(D) and for Construction can be found in 1926.502(f)(2).

WARNING LINES IN CONSTRUCTION - OSHA 1926.502(F)(2)

- The rope, wire, or chain shall be flagged at not more than 6-foot (1.8 m) intervals with high-visibility material;
- Has a minimum tensile strength of 500 pounds
- Must be installed so that at its lowest point, including sag, is not less than 34 inches and no more than 39 inches above the walking working surface
- Stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge
- The line shall be attached at each stanchion in such a way that pulling on one section of the line will not result in slack being taken up in adjacent sections before the stanchion tips over.

WARNING LINES IN GENERAL INDUSTRY - OSHA 1910.29(D)

- A warning line must consist of rope, wire, tape or chain
- Has a minimum breaking strength of 200 lbs.
- Must be installed so that at its lowest point, including sag, is not less than 34 inches and no more than 39 inches above the walking working surface
- The warning line must be supported in such a manner that pulling on one section of the line will not result in slack being taken up in adjacent sections causing the line to fall below the previously mentioned 34 inches from the walking/working surface
- The warning line must be clearly visible from a distance of 25 ft away and anywhere within the designated area.

PASSIVE SOLUTIONS FOR ROOF FALL PROTECTION

If workers have to go between the warning line and the roof edge, traditional fall protection systems must be used for example, guardrail systems or personal fall arrest systems.



ROOF EDGE DELINEATOR FOR WARNING LINES BY VIZCON

- Warning line system providing quick set-up and removal.
- 30 lb. Recycled Rubber Base weight stays in place. Won't damage the roof.
- Durable Low Density Plastic Delineator Cones stack with or without base.
- Base drops over cone for easy set-up, bases stack for easy transport & storage.
- Meets OSHA Regulation 16 lb. pull test.



PERMANENT GUARDRAIL BY ROOFTOP ANCHOR

The Sector Safety Guard Rail Systems are a passive safety system, offering fall protection without the need for training or additional personal protective equipment.



TEMPORARY PORTABLE GUARDRAIL BY 3M DBI-SALA

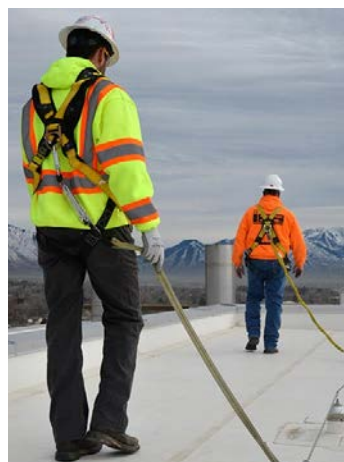
- 6 ft. (1.8 m) guardrail section, powder coated steel.
- Free-standing guardrail system doesn't require attachment to surface
- Built-in rail and toe board receptacles on base (order separately)
- Base has integral rubber pad
- Simple set-screw design
- Compact and lightweight design
- Various lengths and individual components are available

ACTIVE SOLUTIONS FOR ROOF FALL PROTECTION



ROOF TOP FREESTANDING COUNTERWEIGHT ANCHOR BY 3M DBI-SALA

- Installs to flat or up to 5 degree sloped roofs
- Non-penetrating design simply sits on working surface
- Built-in shock absorbing system for added safety
- Complete with sixteen 45 lb. (20 kg) counterweights - includes four PVC coated base plates
- Integral carrying handles for easy transport
- Compatible with various fall arrest connecting systems
- Portable and reusable



PERMANENT HORIZONTAL LIFELINE SYSTEM BY ROOFTOP ANCHOR AND 3M DBI-SALA

Horizontal Lifeline Systems can be used as a fall restraint or a fall arrest system. Either system can be engineered for single or multiple workers.