



Roof and Skylight Safety

Preventing Worker Falls through Skylights and from Roofs

Failing to implement proper fall protection requirements is the No. 1 violation of the “2018 Top Ten OSHA Violations”

Falls from roofs are far more common than they should be. Inadequate guarding and worker fall protection around skylights and roofs can result in fatal falls and serious injuries. Employers should ensure that proper controls are established and in place before allowing employees to work on roofs and around skylights. Following are some proven controls and tips to consider in preventing these far-too-common accidents.

General Safety Requirements for Working on Roofs

There are many instances in which an employer would need to allow an employee to work on the roof of their building. This work may include servicing HVAC equipment and exhaust fans and vents, clearing drains, patching holes, snow removal and more. If an employer is in a leased building, responsibility can rest with both the landlord and occupier, whoever will be working on the roof. Employers have the responsibility to employees from fall risks associated with working on roofs. Employees are not permitted to work within 6 feet of the leading edge of the roof. If this is necessary, safety controls must be established and effectively in place.

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For complete regulatory information on safety guardrail requirements, refer to Cal/OSHA Title 8 Section 3209.



Guardrails

Safety guardrails which meet Cal/OSHA requirements are required at locations where there is a routine need for employees to approach 6 feet of the leading edge of the roof. The use of guardrail protection is the most important priority and control method when employees work at elevated heights. When guardrail protection is required, the following structure will be maintained:

- Standard guardrail will consist of top rail, midrail (or equivalent protection) and posts.
- The guardrail will have a nominal height of 42 inches to 45 inches from the upper surface of the top rail to the roof level (working surface).
- The top rail will be smooth-surfaced throughout the length of the railing. The midrail will be approximately halfway between the top rail and the working surface.
- The guardrails, all connectors and anchorage will be capable of withstanding a force of at least 200 pounds.

Required fixed and/or portable guardrails required will be provided along the roof edge extending at least 6 feet beyond the areas occupied by the person(s) accessing, servicing or repairing permanently-mounted machinery and equipment, such as swamp coolers, exhaust systems and HVAC systems.

If performing only intermittent work with no roof guardrail, employees will use appropriate fall protection, such as approved portable railings or personal fall arrest systems.

Roof Hatch

If there is a roof access hatch, the hatch opening must be protected by a standard safety guardrail system. This is to protect the employee from the opening and to allow safe ascent and descent to and from the roof.

Protecting Skylights

Any employee approaching 6 feet of a skylight must be protected from falling through the skylight or its opening. Only authorized employees are permitted on the roof. Skylight designers, manufacturers and installers should be consulted to assist with proper skylight evaluation and fall protection controls.

Training

All employees must be trained on fall hazards and fall prevention controls associated with working on the roofs and around skylights. Training must occur before an employee is permitted to work on the roof or around skylights. The following training topic criteria should be used related to what risks employees are exposed to and the equipment they are using:

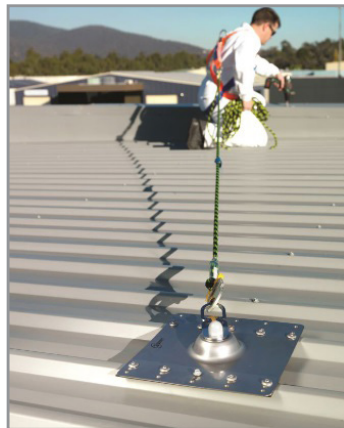
- Be sure that fall protection is in place on roofs and skylights. If there is no protection, an employee must notify his or her supervisors.
- Know how to recognize fall hazards associated with working on roofs and near skylights.
- Never lean, push against or stand on safety guardrails or skylights.
- Never remove guardrails or skylights screens/covers. If necessary, PFAS is be required.
- Know how to safely access the roof, work on the roof and work around skylights.
- Notify another employee when working on the roof alone.
- Understand the use and limitations of fall protection and fall protection equipment.
- Understand the use and limitations of PFAS and how to inspect the safety equipment.

Skylights can be protected in one of the following ways:

- **Skylight screens.*** Above or below the skylight.
- **Guardrails.** Provided on all exposed open sides of the skylight to a fall of 6 feet or more. The design, construction and installation of skylight screens and guardrails will need to meet the strength requirements equivalent to that of guardrails and covers.
- **Covers.** Covers should meet fall protection requirements when installed over the skylight. Or, the skylight itself may serve as a cover and meet manufacturer requirements.
- **A fall protection plan.** Refer to Construction Safety Orders, Section 1671.1. This is only to be used when the above fall protection methods can demonstrably create a greater hazard.



*Skylight Screens. "Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied perpendicularly at any one area on the screen."



Personal Fall Arrest Systems

Where there is no other physical fall protection in place, i.e., no guardrails or skylight protection, a personal fall arrest system (PFAS) is required for the safety of the employee. This PFAS consists of a full-body harness, lanyard, connectors and appropriate anchorage points (tie-offs) when working over an unguarded or uncovered opening more than 6 feet above a lower level. The systems are to be inspected prior to use by the employee and semi-annually by a competent person.

Where PFAS will be used on the roof in lieu of guardrails, safety lines and/or lanyards shall be attached to the roof tie-backs meeting the requirements for appropriate and approved anchorage points for building systems.

The building/roof anchorage is to be used solely for fall protection equipment. A manufactured mobile anchorage system that meets fall protection requirements can also be used. *[For detailed information refer to the Cal/OSHA requirement in Section 3291(f).]*

