



Workplace Skylight Safety

How can states address workplace skylight safety?

Skylights can create a rooftop fall hazard for workers.

The Occupational Safety and Health Administration (OSHA) considers skylights to be holes because most can not stop a worker from falling through. Falls commonly occur when workers are backing up into an unprotected skylight while performing another task. Inclement weather can also increase the risk of falls. The industries most affected by skylight falls include construction, maintenance, and emergency services.

Unspecified Rooftop Falls: Falls from an upper level are the number one cause of death in the construction industry. In 2019, there were 401 construction deaths from falls to a lower level and 13,770 injuries from similar falls [Bureau of Labor Statistics, 2021].

- In 2013, falls from roofs resulted in an average of 26-31 lost work days per worker injury [Bureau of Labor Statistics, 2016].
- Workplace safety training saves U.S. employers over \$100 billion annually [Centers for Disease Control, 2010].
- In a study of 800 businesses, employers who receive random inspections have a 9.4% decrease in injury rates without losses in sales or employment [Levine et al., 2012].

Research Summary

Skylights can be a serious workplace threat for laborers in the roofing, construction, maintenance, and emergency services industries. For example, falls through skylights constitute roughly 1-in-10 falls in the construction industry. The Occupational Safety and Health Administration (OSHA) establishes workplace safety guidelines that treat skylights as roof holes for hazard standards. Missouri does not currently have workplace safety guidelines in addition to federal OSHA standards. With the exception of California, most OSHA state plans do not exceed federal skylight safety standards.

Skylight Fatalities: Between 2017-2021, 75 worker fatalities occurred in the United States due to falls through skylights [OSHA, 2022]. No skylight-related fatalities were reported in Missouri during this time period.

Skylight Injuries: Between 2015-2021, 130 reported severe injuries resulting from falls through skylights [OSHA, 2021].

- During this time period, one skylight-related injury of severe brain damage was reported in Missouri in 2020.
- The most common injuries included bone fractures, intracranial injuries, internal injuries, and other bodily traumas and severe pain [Bureau of Labor Statistics, 2016].

Incomplete fall data likely results in undercounting skylight fatalities and injuries. Missing information in federal databases include:

- Statistics from 22 states with OSHA-approved state plans
- Causes of unspecified rooftop falls

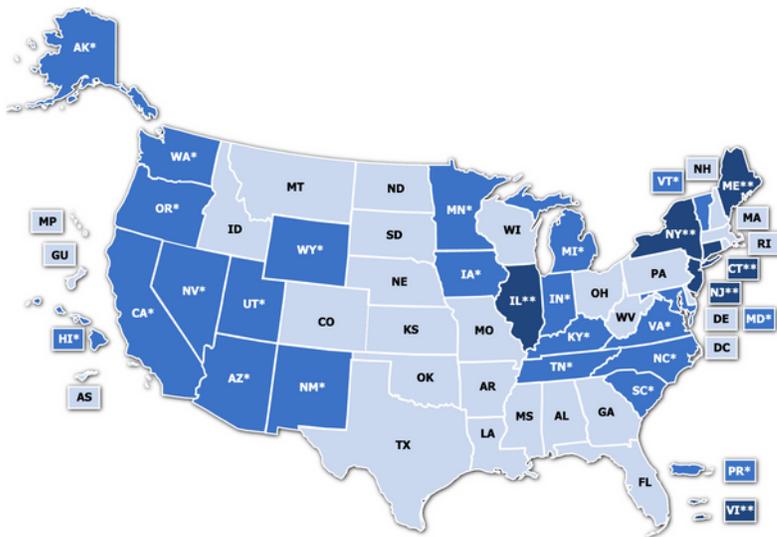


Figure 1. Map of States with OSHA State Plans. OSHA-approved State Plans are agreements that allow states to regulate their own workplace safety as long as state standards meet or exceed federal standards.

- States in dark blue (**) have an approved state plan that covers government workers only.
- States in medium blue (*) have an approved state plan that covers private and government workplaces.
- States in light blue (no asterisk) do not have a state plan.

OSHA sets federal standards for rooftop and skylight safety.

Skylights must follow General Industry & Construction regulations [OSHA, 1994 & 2017], which require at least one of the following fall protection measures for workers on roofs with skylights:

- **Screens or Nets:** Typically installed above a skylight; must be able to withstand twice the maximum load they may face
- **Guardrails:** Most effective around larger skylights where a screen is not practical
- **Personal Fall Protection Systems:** Full body harness with a lanyard attached to a secure anchor point/system

Individuals younger than 18 (<16 in agricultural work) are not permitted to do roofing work, be on ladders or scaffolds near roofs, or access equipment on roofs [Title 29—Labor § 570.67].

The maximum fine for an OSHA violation is \$14,502 and repeated violations can result in fines up to \$145,207 dollars [US Dept. of Labor, 2022]. **Citations and penalties from OSHA strongly reduce the frequency of injuries**, but it is not clear that the threat of inspections and regulations reduce injury frequency and severity.

In addition to OSHA standards, the Centers for Disease Control and Prevention (CDC) recommends internal worksite inspections, worker training, warning labels, and maps of worksite hazards [CDC, 2004].

OSHA-Approved State Plans typically do not add to federal safety requirements.

Twenty-two states (including IA, IL, KY, and TN) have OSHA State Plans (**Figure 1**). In general, states without OSHA State Plans do not have additional workplace safety regulations in state statute [OSHA, 2006].

- **California** has skylight screen-specific standards, including warning labels and requirements for screens to be able to hold approximately twice the weight of a worker and equipment. Screens are optional if other safety measures are used.

The Missouri Department of Labor provides On-Site Safety & Health Consultation inspections following OSHA guidelines for small employers in high-hazard industries, but does not issue fines for workplace hazards.