

CSI Country-Wide Case Study Safety Strategy Discussion

Construction Safety Investigator



Instructions:

The objective of this tool is to provide field supervisors with information to proactively engage workers and discuss safety related concerns that they may encounter. Safety discussions typically pertain to all activities that workers will be involved in that may have the potential for safety related exposures. This case study is based on facts and materials developed and first published by the agency/organization identified in the section below entitled Source of Case Study Investigative Information.

Case Day:

January 2023

Accident Type:

Fall From Height — Skylight Accident

Relevant Laws, Rules, and Codes May Include:

29CFR 1926.20(a)(1); 29 CFR 1926.20(b)(2); 1926.20(f)(2); 1926.21;
Head Protection: Safety Helmets in the Workplace (SHIB 3-6-2024);
29 CFR 1926.501(b)(4)(ii); 29 CFR 1926.501 (b)(1)

Case:

Project Manager Dies After Falling Through Skylight

Accident Detail:

The employer is a roofing contractor that specializes in both commercial and residential roofing projects including asphalt shingle replacement and repair, metal roof replacement and repair, roof inspections, and commercial roof coating systems.

The commercial warehouse had recently been purchased. The new owner requested an evaluation of the condition of the metal roof and asked that temporary repairs be made on any holes that were found upon the inspection.

A roofing project manager (victim) employed by the roofing contractor was performing the requested post-purchase roof inspection for the buyer of a commercial warehouse when the incident occurred. The roof is constructed of corrugated metal with a total of 16 polycarbonate skylights within the roof, all original to the construction of the building.

The roofing project supervisor and manager were both involved in the inspection. Once on the roof, the supervisor placed the bucket of patching silicone on the peak of the roof in the center of the building so that it would be centrally located and accessible to both employees. The supervisor and project manager (victim) split up to address both sides of the roof at once. When a hole was located, the employees would walk to the peak, dip their brush applicator into the bucket of silicon, walk back to the hole and apply it accordingly. At one point the victim verbally reminded his supervisor to be careful around the skylights, stating that he had nearly stepped on one. Thirty minutes later, the project manager (victim) stepped directly onto one of the roof's 16 polycarbonate skylights and fell 25ft. to the concrete surface below.

The victim succumbed to his injuries while en route to the hospital.

Reconstructive Safety Evaluation:

- What are some of the possible causes of the accident being discussed?
- What actions could have been taken that might have prevented this accident from occurring?

Agency's Accident Scene Conclusion:

Key contributing factors identified in this investigation include:

- Failure to recognize job hazards
- Failure to guard skylights with railings or skylight screen. Skylights present risk to workers, as they can often be difficult to differentiate from roof panels. Even in instances where skylights are clearly visible, workers may be task focused and lose sight of skylight placement
- Failure to utilize fall protection when working at heights. The victim and his supervisor were working at heights above six feet when the incident occurred
- Failure to enforce the use of fall protection. Although policies requiring fall protection were in place, neither of the employees utilized fall protection on the day the event occurred

Preventive Safety Measures Identified by the Investigating Agency Include:

Although a copy of the program was not provided to FACE investigators, the company stated that fall protection training, OSHA-required training, drug- and alcohol-free workplace training, and bloodborne pathogens training were some examples of the training provided to employees.

The company representative stated that all employees are issued a National Roofing Contractors Association (NRCA) Pocket Guide to Safety. The pocket guide covers topics such as fall protection, electrical hazards safety, heat illness guidelines, personal protection equipment guidance, and fire prevention methods.

The investigators concluded that, to help prevent similar occurrences, employers should:

- Implement a job hazard analysis process. A JHA can be used to identify the existing or potential hazards involved in each step of a work task. The following are the basic elements of a JHA:
 - Task description,
 - Hazard description
 - Hazard control(s)

Had a JHA been performed prior to the incident at the warehouse, the employer could have likely observed the hazards associated with the job site, specifically the exposure to the polycarbonate skylights and the need for adequate fall protection and skylight guarding.

- Guard skylights with railings or a skylight screen. OSHA standard 29 CFR 1926.501(b) (4)(ii) states that walking surfaces shall be protected from tripping on or stepping into or through holes, including skylights. Employers should guard skylights with railings or a skylight screen prior to performing work on roofs equipped with skylights. Skylight guarding provides employees with a physical barrier of protection from falling through skylights and serves as a visual aid by clearly identifying the location of the skylights.
- Require and enforce the use of fall protection when working at heights above 6 feet. Failure to protect employees while working at heights and failure to properly train and document completion of fall protection training directly violate two separate OSHA standards. OSHA states, each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge that is 6 feet (1.8m) or more above a lower level shall be protected from falling using guardrail systems, safety net systems, or personal fall arrest systems

- Consider prevention through design (PtD) to “design out” or minimize hazards and risk. This can be achieved by:
 - Eliminating hazards and controlling risks to workers to an acceptable level “at the source” or as early as possible in the life cycle of items or workplaces
 - Including design, redesign, and retrofit of new and existing work premises, structures, tools, facilities, equipment, machinery, products, substances, work processes, and the organization of work
 - Enhancing the work environment through the inclusion of prevention methods in all designs that impact workers and others on the premises
 - PtD encompasses all the efforts to anticipate and “design out” hazards to workers. Such efforts can include changes to construction design, work methods and operations, equipment, and the organization of work along with use of new technologies

Additional Commentary on Preventive Safety Measures from Chubb Include:

- Complete a Job Safety Task Analysis that includes scope of work, anticipated exposures, and safety equipment and/or procedures needed to ensure the task is completed successfully and safely
- Conduct a pre-work meeting to review the JSTA and ensure workers understand the task to be completed, any safe working procedures and have the necessary safety equipment
- Employees should have adequate training on job-specific tasks. Proper training must extend to all workers, including day laborers. Language barriers and communication should also be considered during training

Attendance Roster

Source of Case Study Investigative Information:

This case study is based on facts and materials developed and first published by the following agencies during their investigation of the applicable incident:

- U.S. Centers for Disease Control and Prevention (CDC) and National Institute for Occupational Safety and Health Office of the Director (NIOSH)
- The Kentucky Fatality Assessment and Control Evaluation (FACE) program

The source material is otherwise available on the agency website for no charge. Chubb’s use of information sourced from these or any other governmental agency does not constitute endorsement or recommendation of Chubb by these governmental agencies.

Source and Links to Relevant Material:

Kentucky FACE Program, FACE Report 23KY00901;
<https://kiprc.uky.edu/sites/default/files/2023-04/23KY00901%20Project%20Manager%20Dies%20after%20Falling%20through%20Skylight.pdf>

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10/2025