

**TO: Director, Occupational Health Surveillance Program
Massachusetts Department of Public Health**

**FROM: Massachusetts Fatality Assessment and Control Evaluation
Program (MA FACE)**

**SUBJECT: Massachusetts Roofing Company Laborer Dies in Fall
Through Skylight - 93-MA-016**

DATE: October 17, 1994

SUMMARY

On September 3, 1993, a 32 year old male Massachusetts roofing company laborer died in a fall through a skylight. Taking a break from his work on a flat, built-up roof, the victim sat on a skylight to have a drink from his water cooler. Moments later the victim broke through the skylight and fell approximately twenty-eight feet to the building's concrete floor. Within minutes of the incident, emergency medical services personnel were summoned and arrived to transport the victim to a regional hospital. He was pronounced dead at the hospital approximately forty minutes after his fall.

In order to prevent similar future occurrences, the Massachusetts FACE Project recommends that employers:

- ensure that all workers required to work near roof openings or skylights are adequately trained to recognize the serious hazard of falls through roof openings, and the danger of sitting or stepping on a skylight
- guard skylight openings with screens or railings
- develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, job site hazard surveys and worker training in fall hazard recognition.

Furthermore, manufacturers of skylights should:

- affix conspicuous decals to each skylight, warning individuals against sitting or stepping on these units.

Lastly, state building code officials should:

- consider including a provision in the building code which would require all skylights installed in new or renovated buildings to be of the sufficient strength to support the weight of a worker who sat, stepped, or fell on one.

INTRODUCTION

On September 3, 1993, a local police department notified the MA FACE Program's fatality hotline that a 32 year old male Massachusetts roofing company laborer had died earlier in the day from a fall through a skylight. An investigation was immediately initiated.

On September 9 and 10, 1993, the MA FACE Investigator travelled to the incident site and conducted interviews with the victim's employer, municipal police, and building department personnel. The death certificate, police report, employer organization information, preliminary data from OSHA and multiple photographs were obtained during the investigation.

The employer was a roofing and sheet metal company in business for approximately fifteen years. At the time of the incident, the company had been on the job site for four days and employed twelve persons. Of these twelve employees, seven were roofing laborers, performing the same duties as the victim. The company did not employ a designated safety officer, but had some written company safety rules and procedures in place.

The victim was employed by the company for less than two days. He was a long term U.S. military law enforcement officer who had recently returned from Operation Desert Storm. He had no known previous roofing experience and was to be trained on-the-job.

INVESTIGATION

On the day of the incident, the employer was under contract to provide roofing services on a large commercial building, approximately 360 feet by 900 feet in size. These services included, but were not limited to, the placement of protective weather barrier materials on the flat, built-up roof.

The only witness to the incident was a co-worker who was standing approximately ten feet away from the victim when he fell. According to the co-worker, the victim took a break from his job to transfer drinking water from a large cooler to his smaller, more manageable cooler. The victim then sat down on a nearby skylight to have his drink. Aware of the danger in sitting on the skylight, the co-worker no sooner yelled " No!, " when the victim broke through the skylight and fell twenty-eight feet to the concrete floor below. The employer later claimed that the victim had been warned not to sit on the skylight.

Approximately six minutes following notification, emergency medical services arrived at the site, administered CPR and transported the victim to the regional hospital. He was pronounced dead at the hospital forty minutes later.

CAUSE OF DEATH

The medical examiner listed the cause of death as multiple traumatic injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: **Employers should ensure that all workers required to work near roof openings or skylights are adequately trained to recognize the serious hazard of falls through roof openings, and the danger of sitting or stepping on a skylight.**

Discussion: The victim fell his second day on the job. Although he reportedly had been warned about the danger of sitting on skylights, it is doubtful he fully understood the seriousness of the hazard. Employers should confirm that employees, and especially new hires, fully understand the danger of sitting or stepping on a skylight. Had the victim been completely aware of the danger, he most likely would not have chosen to sit on the skylight.

Recommendation #2: **Employers should guard skylight openings with screens or railings.**

Discussion: The OSHA General Industry Standard 29 CFR 1910.23(a)(4) requires that "every skylight opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides." OSHA standard 29 CFR 1910.23 (e)(8) further specifies that skylight screens shall be capable of withstanding at least 200 pounds applied perpendicular at any one area on the screen. In addition, the screens should not deflect downward or break the glass below them under ordinary loads or impacts. This incident could have been prevented if the skylights had been guarded.

Recommendation #3: **Employers should develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, job site hazard surveys and worker training in fall hazard recognition.**

Discussion: The company did not have a designated safety officer (competent person), nor a comprehensive safety program. Although the company reportedly had some safety procedures, it provided minimal safety training. Employers should develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, routine job site hazard surveys, the use of appropriate fall protection, and worker training on the recognition and avoidance of fall hazards. The training program should include provisions for orienting new employees to the hazards of their job before they begin work.

Furthermore, employers should appoint an individual with safety knowledge, and the authorization to take corrective measures to eliminate hazards, to be the designated safety officer, or competent person, on site. Currently most OSHA construction standards (29 CFR 1926) require the involvement of a "competent person" in the implementation of safety provisions.

Recommendation #4: **Manufacturers or purchasers of skylights should affix conspicuous decals to each skylight, warning individuals against sitting or stepping on these units.**

Discussion: The victim in this case sat on the skylight to have a drink of water. If a decal alerting individuals to the danger of sitting or stepping on skylights had been affixed to the unit, the victim may not have sat on the skylight and fallen to his death.

Recommendation #5: **State building code officials should consider including a provision in the building code which would require all skylights installed in new or renovated buildings to be of the sufficient strength to support the weight of a worker who sat, stepped, or fell on one.**

Discussion: The most certain way to prevent workers from breaking through skylights is to prohibit the use of skylights unable to support the weight of a worker who sits, steps, or falls on one. State building code officials should explore the feasibility of developing performance standards for skylights geared towards protecting workers from breaking through them during construction, renovation, or maintenance work.

REFERENCES:

Code of Federal Regulations Title 29, Part 1926.23(a)(4). 1926.32(f), 29 CFR 1910.23 (e)(8) revised July 1, 1993.

"Preventing Worker Deaths and Injuries from Falls through Skylights and Roof Openings," NIOSH Alert, December 1989, U.S. Department of Health and Human Services, Publication No. 90-100.