The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research NIOSH

Sheetmetal Helper Falls to His Death Through a Skylight Opening in South Carolina

FACE 8818

INTRODUCTION

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying: the working environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

On January 6, 1988, an 18-year-old male sheet metal helper in South Carolina died when he fell 33 feet through a skylight opening to a concrete floor.

CONTACTS/ACTIVITIES

Officials of the Occupational Safety and Health Program for the State of South Carolina notified DSR of this fatality and requested technical assistance. On April 19, 1988, a DSR research team collected incident data, photographed the site, and discussed the incident with the OSHA compliance officer and an employer representative.

OVERVIEW OF EMPLOYER'S SAFETY PROGRAM

The victim had been employed for 3 months as a sheet metal helper by a small roofing/sheet metal company. The company has been in existence for 14 years and employs 14 workers. Employees receive on-the-job training for assigned tasks and the supervisor reviews safety procedures to be followed before the start of each day's work. However, the employer does not have a written safety program.

SYNOPSIS OF EVENTS

On January 6, 1988, the victim was working as a member of a five-man crew assigned to replace corrugated metal roof sheeting (3 feet by 25 feet) and to install sections of chain-link fence material on top of approximately 24 white fiberglass panels (3 feet by 8 feet) used as skylights.

The fencing material was being installed to guard against the fall hazard presented by the fiberglass skylights. In October 1987, a company employee had fallen to his death through a skylight in this building. In the same month, another company employee fractured his hip and legs when he fell through a skylight of another building.

The pitch of the roof of the building is ½ foot per 12 feet. There were numerous vent stacks protruding through the roof. The victim was assigned the task of replacing sheet metal around the vent stacks to prevent water leakage. The other crew members were replacing the metal roof sheeting and installing the chain link fencing over the existing fiberglass panels (skylights). No fall protection guards of any type were present around these skylights at the time of the incident.

At 9:30 a.m. the supervisor ordered the crew to stop working until he called the office for further instructions. While awaiting further instructions, the crew left the work area and to warm themselves walked toward a vent stack which was emitting heat. The victim stepped on the unguarded fiberglass panel and fell 33 feet through the opening to a concrete floor, landing on the back of his head and neck. Emergency first aid was provided by the contractor's dispensary personnel until an ambulance arrived approximately 15 minutes later. The victim was transported to a nearby hospital where he died 2 hours later.

CAUSE OF DEATH

The cause of death was listed by the coroner as multiple traumatic injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Guarding and/or fall protection such as that required by OSHA 29 CFR 1926.500(b)(4) or an equivalent form of fall protection should be provided in the area of all roof openings.

Discussion: A guardrail or adequate cover as required by OSHA 29 CFR 1926.500(b)(4) could have prevented this fall. Also, in instances where the use of a standard type of guardrail or cover is not practical for the work being done (such as the task of installing permanent protective covers), alternative forms of fall protection which provide an equivalent level of protection, such as safety nets, catch platforms, etc., should be used. Construction and/or maintenance work which involves skylights is becoming commonplace throughout the nation. As the need for this type of construction/maintenance work increases, the potential for falls also increases. Unless fall protection methods and equipment are used, increased exposure might well lead to an increase in the number of injurious and fatal falls through skylights.

Recommendation #2: Worker safety should be considered and addressed in the planning phase of construction projects.

Discussion: Safety concerns should be discussed and incorporated into all construction projects during planning. These safety concerns should ensure worker safety throughout the entire life of the project. In this instance, poor planning and lack of concern for safety was demonstrated by allowing employees to work on the roof of a building without providing adequate guarding and/or fall protection.

Return to In-house FACE reports

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