



The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces
through safety and health research



Construction Laborer Falls to His Death from a Roof in Ohio

FACE 88-08

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 December 7, 1987, a 26-year-old construction laborer in Ohio died when he fell 27 feet from the roof of a building under construction.

CONTACTS/ACTIVITIES

Officials of the Industrial Commission of Ohio (ICO) notified DSR of this fatality and requested technical assistance. On January 5, 1988, a DSR research team met with the employer to conduct an evaluation of this incident. DSR investigators discussed this incident with ICO personnel, and then conducted a field evaluation.

OVERVIEW OF EMPLOYER'S SAFETY PROGRAM

The victim had been employed for 2 months as a construction laborer by a small construction company specializing in the erection of prefabricated metal buildings. The company has been in existence for 6 years and has been involved in the erection of prefabricated metal buildings for the past 2 years. At the time of the incident, 26 employees worked for the company. Employees receive both classroom and on-the-job training for tasks which they are assigned. Written safety rules are given to employees who must sign a receipt acknowledging that they have received and read a copy of company safety policies. Although the victim had only been employed for 2 months, he had received training in proper work procedures, including specific instruction on how to avoid falls.

SYNOPSIS OF EVENTS

On the day of the incident, the victim was working as a member of an eight-man crew assigned to install roofing on a large (150 feet by 180 feet) prefabricated building. The pitch of the roof on the building is 1/2 foot per 12 feet. At the peak of the roof, a flat area 1 foot wide provides a walkway the length of the structure. Roofing materials were located in bundles on the roof near the area where they were to be installed. Normally this material is packaged in the order in which it is to be installed.

The crew began stretching a roll of heavy, reinforced insulation over the “Z” purlins which form the main supports for the roof. Next, 24-inch-wide, tongue-and-groove metal roofing panels were placed above the insulation and secured with a special crimping machine to form a solid one-piece surface for the roof. Workmen standing on the walkway at the peak of the roof, and on existing secured panels, installed the next roll of insulation and secured the metal roofing above this insulation prior to proceeding further out onto the roof. No fall protection equipment of any type was present, nor was any required by the company’s standard operating procedures for this type of job.

At the time of the incident, the victim was standing on the walkway at the peak of the roof beyond the area where roofing tasks were being performed. A single panel of metal roofing 24 inches wide by 25 feet long had been laid across the “Z” purlins in this area. This panel was not secured and would not ordinarily have been placed in this area. For some unknown reason, the victim stepped from the walkway onto this unsecured panel. The panel twisted and gave way, and the victim fell 27 feet through a gap in the metal bracing to the concrete floor.

Emergency medical service (EMS) personnel were called to the scene and arrived approximately 10 minutes after the incident occurred. Casualty care was provided at the scene and while the victim was being transported to a nearby hospital. The victim was pronounced dead at the hospital approximately 26 hours after the incident occurred.

CAUSE OF DEATH

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

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Whenever any work is performed from an elevation where the potential for a serious or fatal fall exists, employers should ensure that fall-protection equipment is provided and utilized by their employees.

Discussion: The use of a “traditional” safety belt/lanyard combination, as required by 29 CFR 1926.104(d), is sometimes not practical during construction operations. However, alternative forms of worker protection, such as the safety nets specified in 29 CFR 1926.105, should be considered. Safety nets can be equally effective in preventing injury or death when a worker falls. The use of safety nets below the workers may have prevented the fatality described above.

Recommendation #2: Unused or unsecured construction materials should be stored only in designated areas.

Discussion: For some reason, possibly because of its length, a roofing panel had been laid across the “Z” purlins at a location away from the work area. The victim may have thought that the panel was secured, and therefore safe to walk upon. If the unsecured panel had been placed in a designated storage area, this fall may not have occurred.

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