The National Institute for Occupational Safety and Health (NIOSH)

Promoting productive workplaces through safety and health research NIOSH

Stucco Mason Dies in Fall from Scaffold

FACE 8935

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 April 21, 1989, a 28-year-old male stucco Mason died as the result of falling approximately 48 feet from a scaffold.

CONTACTS/ACTIVITIES

State officials notified DSR of this fatality and requested technical assistance. On May 15, 1989, two research safety specialists met and discussed the incident with the company's representative and the Occupational Safety and Health Administration (OSHA) compliance officer assigned to the case. The foreman assigned to the job was interviewed, and the incident site was inspected and photographed. Reports relating to the incident were obtained from the responding emergency medical service and investigating police department.

OVERVIEW OF EMPLOYER'S SAFETY PROGRAM

The victim had been employed for 6 months as a stucco mason by a contracting company that has been in operation for 18 months. (Stucco is a material which is applied while in a plastic state to masonry or frame walls to form a hard exterior finish.) The company employs 16 workers, including 8 stucco masons. The employer has no written safety policy and does not use written safety rules or procedures. Also, personal protective equipment was not used at the jobsite, except for head protection (i.e., hard hats).

SYNOPSIS OF EVENTS

The company had been contracted to apply stucco to the outside walls of a recently built six-floor college dormitory. Tubular welded frame scaffolding had been erected around the perimeter of the dormitory from ground level to the uppermost floor to enable the workers to apply the stucco material.

On the morning of the incident the victim was working as a member of a 16-person crew assigned to continue work on the dormitory. Several small (2-3 person) groups were involved in different phases of work on two sides of the dormitory. The victim and two co-workers were affixing lath (i.e., 2-foot by 8-foot sheets of heavy gauge perforated paper laminated to approximately 14-gauge wire) to the outer wall of the dormitory. The lath would later be covered by the stucco material. The victim was working from the scaffolding at the fifth level, while the two co-workers were working from the scaffolding at the fourth and sixth levels.

Although the incident was unwitnessed, it is assumed that the victim started to climb to the next level of scaffolding by stepping onto the bottom guardrail. (The victim had been previously observed climbing from level to level of the scaffolding without using the built-in scaffold ladder.) The guardrail, which may have been loosely secured or not secured at all to the scaffolding uprights, gave way allowing the victim to fall approximately 48 feet to the ground. Another employee saw the victim strike the scaffold planking at the first level before he struck the ground (see Figure).

Emergency medical service (EMS) personnel arrived at the scene in approximately 4-5 minutes. EMS technicians found the victim unconscious and breathing intermittently. They began advanced life saving support treatment and then transported the victim to the local hospital emergency room. The victim died at the hospital approximately 90 minutes after the incident.

CAUSE OF DEATH

The medical examiner reported the cause of death as multiple blunt force trauma.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Where the potential for a fall from an elevation exists, employers should ensure that fall protection equipment is provided and used by workers.

Discussion: The use of safety belt/lanyard combination is required by 29 CFR 1926.104. Use of the safety belt or body harness/lanyard with a rope grab device and lifeline is appropriate for persons working from scaffolds at varying heights. This type of fall protection permits employees to move about the scaffold without being restricted while still providing fall protection. properly used, this type of fall protection may have prevented the worker in this incident from falling. In this case, however, no fall protection equipment of any type was provided for the workers, clearly indicating management's lack of concern for worker safety.

Recommendation #2 Employers should conduct initial and periodic inspections of erected scaffolding.

Discussion: After the erection of scaffolding at any project site the employer should designate a competent person to initially inspect the scaffolding and again, at designated intervals, re-inspect the scaffolding. Areas of consideration for inspection should include, but not be limited to the following:

1) Braces

2) Brackets

3) Footing (anchorage)

4) Guardrails and Toeboards

5) Ladders

6) Legs

7) Locking Pins

8) Overhead Protection

9) Planking

10) Poles

11) Securing

12) Slippery Conditions

13) Trusses

14) Uprights.

The loose or unsecured guardrail may have been identified and corrected had proper installation, initial inspection, and/or periodic inspection procedures been used.

Recommendation #3: Employers should comply with OSHA standards 1926.451 (a)(4), which requires guardrails and toeboards be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, and 1926.451(a)(6), which requires screens between guardrails and toeboards where persons are required to work or pass under the scaffold.

Discussion: Although additional injuries to other employees haven't occurred, the potential does exist. The scaffolding around the perimeter of the dormitory does not have any toeboards or protective screens installed. Employees working on the ground are at risk of being struck by falling objects (e.g., tools, materials). Employers should comply with OSHA standards 1926.451(a)(4) and 1926.451(a)(6) to further protect these employees at risk.

Recommendation #4: Employers should ensure that foreign-born workers fully understand all information, particularly safety-related information, pertaining to their jobs.

Discussion: The victim was of Korean descent and could not speak any English. He was from a different culture with possible different ideas of "safe" work ethics. The company has the responsibility to ensure that all workers understand the hazards associated with the work involved. Companies that employ foreign-born (immigrant) workers should identify the different languages spoken by the employers and design, implement, and enforce a comprehensive multilanguage safety program. The program should include, but not be limited to, a competent interpreter to explain the safety regulations to the foreign-speaking employees. Also, the employer should develop and post, at conspicuous places, safety posters/signs in that language.

Recommendation #5: Worker safety should be considered and addressed in the planning phase of all work projects.

Discussion: Safety concerns should be discussed and incorporated into all work projects during planning and throughout the entire project. In this instance, safety procedures for the work being performed were not planned. Employees were allowed to work in an area where the potential for a fall existed without adequate written and verbal instructions in recognition and avoidance of fall hazards, and without adequate fall protection equipment.

Recommendation #6: The employer should design, develop, implement, and enforce a comprehensive safety program which includes worker training in recognizing and avoiding hazards.

Discussion: The company had no formal comprehensive safety program, and unsafe work practices had been tolerated. Although a relatively small company, the employer should immediately evaluate the tasks performed by workers; identify all potential hazards; and then design, develop, implement, and enforce a comprehensive safety program addressing these issues as required by OSHA standard 1926.20. Additionally, OSHA Standard 1926.21(b)(2) requires employers to "instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." Also, prior to starting any job, the employer should conduct a jobsite survey, identify all hazards, and implement appropriate control measures.

Figure.

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