
Roofer Dies in West Virginia Following a Fall From a Roof

SUMMARY

On July 17, 1997, a 44-year-old male roofer (victim) died when he fell approximately 21 feet from a roof onto a driveway below. The victim and a co-worker had completed tar papering the roof and were drawing chalk lines on the tar paper prior to shingling the roof when the fall occurred. Marks on the roof suggest that the victim lost his footing, slipped, and fell head-first from the roof onto the concrete driveway. The owner of the residence called 911 at 6:44 a.m., and the EMS arrived within eight minutes and provided emergency first aid and CPR. The victim was transported to the parking lot of a nearby school where he was transferred to a helicopter and then taken to a regional trauma center. He was pronounced dead at 6:09 p.m. The WV FACE Investigator concluded that, to reduce the likelihood of similar occurrences, employers should:

- **develop, implement and enforce a comprehensive safety program that includes, but is not limited to, a thorough hazard analysis and utilization of controls specific to the job and employee training to recognize and abate or avoid unsafe conditions applicable to their work.**
- **evaluate environmental conditions prior to beginning work and make necessary adjustments to accommodate for them.**

INTRODUCTION

On July 24, 1997, the WV FACE Program was notified by the National Institute for Occupational Safety and Health (NIOSH) that a worker had died in West Virginia following a fall from a roof. The WV FACE Program Investigator traveled to the jobsite on August 1, 1997 and conducted an investigation of the incident. A police report and photographs taken by police the day of the incident were obtained. The employer and the owner of the building were interviewed. Death certificate information was obtained. Information was also obtained from the medical examiner's office. The OSHA compliance officer was contacted and the OSHA citations reviewed.

The employer in this incident was a general contractor who had been in operation for 20 years and employed two persons. There was no general written safety program, and no safety training had been provided to the employees. The victim had worked for the employer for four months and had been on the roofing job two days prior to the incident. The entire roofing job was expected to take three-four days. This was the first fatality the company had experienced.

INVESTIGATION

The employer was under contract to replace the shingles on the roof of a two-story home. The job was proceeding ahead of schedule, and workers were beginning the second day of preparing the roof for shingling when the incident occurred. Due to the intense summer heat, the workday generally began at 6:00 a.m. and ended at 2:00 p.m. On the morning of the incident, the weather was clear and hot, and there was no wind present.

Shortly after the beginning of the workday, the victim and a co-worker began placing chalk lines on the roof (chalk lines serve as a guide for straight and even shingle placement) when the victim fell from the roof. A photograph taken by the police indicated that there was no continuous slide guard along the entire length of the roof edge on the northwest side of the roof where the victim was working. The victim was standing on the unprotected side of the roof when he apparently lost his balance, slipped, and fell. Slide marks and footprints on the roof were noted by the police. The victim's footprints suggest that he was standing facing south (looking up toward the peak of the roof), slid west (to his right), and turned. The last set of footprints face north toward the down-slope and roof eave-edge. Head and hand injuries suggest that the victim fell head-first off the roof striking his head and hands on the concrete driveway about 21 feet below. The worker was wearing tennis shoes which are frequently worn for roofing work because of their flexibility and traction. Personal fall arrest equipment was not required or used.

The company owner was not present at the time of the incident. He reported that he was en route to the lumber yard to pick up building materials. He further indicated that the roofers were ahead of schedule on the job and that he did not think they would access the second side of the roof until his return. Though the weather was clear and hot the day of the incident, it is possible that there was dew on the tar paper covering the northwest side of the roof when work began. The dew may have decreased the traction offered by the tennis shoes and may have contributed to the victim's loss of balance, slip, and subsequent fall. The owner of the home indicated he heard a loud noise on the roof and then the co-worker yelling for him to call 911. He made the call at approximately 6:44 a.m. with the EMS arriving within eight minutes. They rendered emergency first aid and CPR and moved the victim to a nearby school parking lot for transport via a medical helicopter to a regional trauma center. He was pronounced dead at 6:09 p.m., approximately 11.5 hours following the fall.

CAUSE OF DEATH

The medical examiner's report listed the cause of death as blunt-force trauma of the head.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should develop, implement and enforce a comprehensive safety program that includes, but is not limited to, a thorough hazard analysis and utilization of controls specific to the job and employee training to recognize and abate or avoid unsafe conditions applicable to their work.

Discussion: The employer did not have a comprehensive safety program, nor did the employer provide safety training. Comprehensive safety programs should include, but not be limited to, training for workers in the recognition and avoidance of safety hazards, regular jobsite safety surveys, written safety rules and procedures, and the provision of any equipment needed to control the hazards. In this incident, the employer or other "competent person" should conduct frequent and regular inspections of the jobsite to identify and control fall hazards. [Note: "A competent person" is defined by OSHA as one who is capable of identifying existing hazards and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them (CFR 1926.32(f).] Once the hazard was identified, they should be reviewed with the work crew, and methods to control them and how to perform the work safely should be discussed. In this instance, the fall hazard had not been controlled. Slide guards had not been installed in a continuous line across the edge of the roof at the gutter line, as required. Roof jacks or equivalent supports are to be installed using nails long enough to hold the slide guard in place should an employee slide down the roof and contact the slide guard. Additional measures could have been considered as well. Though not required by OSHA for residential roofs which are sloped 8 in 12 or less and are less than 25 feet from gutter to ground, safety nets, guard rails or personal fall arrest systems are available and, when used as designed, can prevent or arrest a fall.

In this incident, the fall hazard either was not recognized by the victim, or if recognized, was not dealt with in an effective manner. Adequate fall hazard training combined with installation of slide guards may have prevented this fatality.

Recommendation #2: *Employers should evaluate environmental conditions prior to beginning work and make necessary adjustments to accommodate for them.*

Discussion: Employees were preparing the northwest side of the roof for shingling when the incident occurred. Dew may have been present on the northwest side of the roof, and the dampness may have reduced the traction of the victim's tennis shoes. Waiting until the sun reached the northwest side of the roof and evaporated the dew may have reduced the potential slip hazard.

REFERENCES:

Code of Federal Regulations, Labor 29 Parts 1926.501(b)(13) and 1926.32(f).

OSHA Instruction STD 3.1 dated December 8, 1995 "Interim Policy for Residential Construction Roofing Work. In addition to the fall protection measures set forth under 1926.501 (b)(10)and (11) for roofing work, implementation of the measures described in OSHA Instruction STD 3.1 will be considered to comply with Subpart M during residential construction roofing work (including roofing removal, repair and new roofing installation) where the roof slope is 8 in 12 or less and the eave to lower level fall distance is 25 feet or less."

FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The WVU Center for Rural Emergency Medicine, through a contract with the West Virginia Department of Health and Human Resources, conducts investigations on the causes of work-related fatalities within the state. The goal of this program is to prevent future fatal work-place injuries. West Virginia FACE intends to achieve this goal by identifying and studying the risk factors that contribute to workplace fatalities, by recommending intervention strategies, and by disseminating prevention information to employers, employees, trade associations, unions, equipment manufacturers, students, teachers, and others with an interest in workplace safety.

Please use information listed on the Contact Sheet on the NIOSH FACE website to contact [In-house FACE program personnel](#) regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.