



## The National Institute for Occupational Safety and Health (NIOSH)

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# Roofer Dies after Backing off a Roof and Falling 33 Feet to the Ground in Massachusetts

MASSACHUSETTS FACE-91-05

## SUMMARY

A 48 year old male roofer (victim) died after falling 33 feet from a flat roof he was repairing. The victim and three other co workers were hot tarring the roof of a three-story apartment house when the victim apparently misjudge the distance behind him and backed off the edge. The fall was witnessed by the other crew members who immediately descended to the ground to administer first aid to the victim. One of the co-workers called an ambulance which arrived on the scene within seven minutes. The police arrived within two minutes and reportedly administered cardiopulmonary resuscitation to the victim within three minutes of the fall. The victim was transported to a nearby hospital where he was pronounced dead from traumatic arrest. No roofers' warning line was used and no fall protection was provided to the workers. No safety program was in place. The Department of Labor and Industries investigators concluded that, to prevent future similar occurrences, employers should:

- **employ a motion-stopping safety system or erect warning lines around all unprotected sides and edges of the roof**
- **develop, implement and enforce a comprehensive safety program that includes regularly scheduled worker training in recognizing and avoiding fall hazards**
- **conduct periodic inspections of the work site to identify and control safety hazards.**

## INTRODUCTION

On March 13, 1991, at approximately 10:15 a.m., a 48 year old male roofer died of injuries sustained when he fell 33 feet from a flat roof he was tarring. After the Massachusetts Department of Labor and Industries was notified of the incident, two safety investigators initiated an investigation on March 15, 1991. The investigators visited the work-site and

reviewed details of the incident with the contractor/employer, local police and the Occupational Safety and Health Administration. They also obtained the police incident report. Photographs were taken at the site.

## INVESTIGATION

The employer had been contracted to repair the tar roof of a three-story residential building. The victim and three other workers hired for the job were working on the flat roof mopping hot tar onto the surface. The tar was supplied by a kettle located at ground level. The victim was reported to have been backing towards the edge of the roof as he worked. All of the witnesses reported to police that they saw the victim fall off the rare of the building. He fell 33 feet to the asphalt surface ground below, reportedly striking his head on the hardtop. The co workers descended from the roof and attempted to administer first aid. The job foreman called an ambulance which arrived seven minutes after the call. The victim was transported to a local hospital where he was pronounced dead shortly after arrival. The contractor arrived at the worksite approximately one half hour after the incident.

## CAUSE OF DEATH

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

## RECOMMENDATION/DISCUSSION

**Recommendation #1: Employers should employ a motion stopping safety system or erect warning lines around all unprotected sides and edges of the roof.**

Discussion: The OSHA Standard 29 CFR 1926.500 (g) requires the use of a motion stopping safety system, a warning line system or a safety monitoring system during the performance of built up roofing work on low pitched roofs with a ground to eave height greater than 16 feet. The warning lines are to be erected around all sides of the work area not less than six feet from the roof edge. The warning line is to consist of a rope, wire or chain, and supporting stanchions. The line is to be flagged at no more than six foot intervals with a highly visible material. Where employees are working between the roof edge and the warning line, fall protection should be supplemented by an MSS system or a safety monitoring system. The MSS system provides fall protection through the use of any of the following: guardrails, scaffolds or platforms with guardrails, safety nets or safety harness systems. A safety monitoring system functions by employing a competent person to monitoring system functions by employing a competent person to monitor the safety of all employees in the crew. The person must be on the roof at all times within visual sighting distance and close enough to communicate verbally with employees. Mechanical equipment cannot be used or stored, and the roof width cannot exceed 50 feet.

**Recommendation #2: Employers should develop, implement and enforce a written comprehensive safety program that includes regularly scheduled worker training in recognizing and avoiding fall hazards.**

Discussion: OSHA Standard 29 CFR 1926. 21(b) (2) requires that the employer shall instruct each employee in the recognition, avoidance and prevention of unsafe conditions. The employer's particular control methods for fall hazards should be reviewed with new employees prior to beginning work and routinely to any employee regularly hired on the crew. In particular, 29 CFR 1926.500 (g) (6) specifically requires special training for employees in built up roofing work.

**Recommendation #3: Employers should conduct periodic inspections of the**

**worksite to identify and control safety hazards.**

Discussion: Employers should regularly check the effectiveness of the safety systems in use at each jobsite. These inspections would also serve to evaluate the safety training provided to employees. In addition, 29 CFR 1926.20 (b) (2) makes this a requirement for employers.

## REFERENCES

1. 1926.500 (g), Code of Federal Regulations, Washington D. C.: U.S. Government Printing Office, Office of the Federal Register. Pages 188-190. [1991]
2. 1926.21, Code of Federal Regulations, Washington D. C.: U.S. Government Printing Office, Office of the Federal Register. Page 16. [1991]
3. 1926.20 (b) (20), Code of Federal Regulations, Washington D. C.: U.S. Government Printing Office, Office of the Federal Register. Page 16. [1991]

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