

# **F.A.C.E.**

# **INVESTIGATION REPORT**

## Fatality Assessment and Control Evaluation Project

FACE #95-NJ-089-01  
Laborer Dies After Falling 25 Feet  
Through a Skylight



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**TO:** Division of Safety Research  
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**FROM:** Fatality Assessment and Control Evaluation (FACE) Project  
New Jersey Department of Health (NJDOH)

**SUBJECT:** FACE Investigation #95-NJ-089-01  
Laborer Dies After Falling 25 Feet Through a Skylight

**DATE:** December 26, 1995

### **SUMMARY**

On August 23, 1995, a 21-year-old laborer was killed after falling 25 feet through a skylight while working on a warehouse roof. The victim and a co-worker had been hired as temporary laborers to paint the roof of a large warehouse. At about 3:00 p.m. on their second day at work, the laborers had completed painting for the day and had started to clean another section of the roof. The two decided to take a break and sit down. The victim went over to the plastic domed skylight and pressed against it with his hand, apparently testing its strength. The plastic broke and the victim went through the skylight, falling 25 feet to the warehouse floor below. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, these safety guidelines should be followed:

- o Read and follow the recommendations in the attached publication, *NIOSH Alert: Preventing Worker Deaths and Injuries From Falls Through Skylights and Roof Openings*.
- o Develop, implement, and enforce a comprehensive employee safety program.
- o Equip fixed vertical ladders with a fall protection device.

### **INTRODUCTION**

On August 25, 1995, the county medical examiner's office notified FACE personnel of the death of a worker who fell two days earlier. On the same day, a FACE investigator visited the incident site and met with the owner of the warehouse. The victim's supervisor was also interviewed and the incident site was examined and photographed. Additional information was obtained from the OSHA compliance officer, the police report, and the medical examiner's report.

The employer was a trucking and warehousing company that had been in business since 1960 and employed 60 workers. The company did not have a safety or fall protection program, although they had obtained a single safety belt and lanyard for use on the ladder to the roof on the advice of their insurance carrier. The victim was a 21-year-old male laborer who had three years of previous experience as a maintenance man with a municipal housing authority.

## **INVESTIGATION**

The incident occurred outdoors at a large warehouse located in a rural area. The 85,000 square foot, 31-year-old warehouse was primarily used to store flooring tiles and was in good repair. As part of the building's maintenance, the flat tar roof was painted with silver reflective paint every two years. The paint helped to keep the warehouse cool and protected the roof surface. The warehouse owner hired the two laborers on the recommendation of one of his warehouse employees. The two workers (a father and son team) were hired on a temporary basis and would only work for the three weeks needed to do the job.

Work began on Monday, August 21, 1995. The two workers and a warehouse supervisor climbed to the roof on a 25 foot, vertical steel ladder leading to a hatchway in the warehouse. The roof was a large flat area measuring 434 feet by 88 feet which was surrounded with a two-foot high parapet. Evenly spaced across the roof were 15 six-by-three foot plastic domed skylights. All the painting materials were already on the roof when the workers arrived. The supervisor instructed the workers how to sweep and clean an area of the roof before painting it. The paint (a mixture of aluminum, asphalt, and petroleum distillates) was poured on the roof and spread with a broom. The workers were not instructed in the use of fall protection, which was limited to a safety belt and lanyard used on the vertical ladder while opening the hatchway to the roof. After instructing and watching the workers for a short time, the supervisor left them to work on their own.

The day of the incident, a Wednesday, was a sunny summer afternoon. The workers arrived at 7:00 a.m. and worked through the morning without incident. At noon, they took a half-hour lunch before returning to work. At about 3:00, the victim's co-worker went down to tell the supervisor that they had finished the section of the roof. The supervisor, who had been up to the roof several times that day to check on them, told him to clean the next section for painting the next day. The worker returned to the roof a few minutes later. At about 3:15, the two decided to take a break. The co-worker went over and sat on the side of the wall while the victim went over to one of the plastic domed skylights. He leaned over and pushed against the plastic dome, apparently testing the strength of the skylight to sit on. The plastic dome shattered and the

victim went through it, falling 25 feet to the warehouse floor. The co-worker came down the ladder and told the supervisor that his son had fallen through a skylight. They went to the victim, finding him unconscious and bleeding on the concrete floor under the skylight. While the company dispatcher called 911, the supervisor prevented the father from moving and further injuring the victim. The ambulance and paramedics arrived within minutes and requested a med-evac helicopter to transport the victim to the regional trauma center. The victim died at the trauma center at 10:10 p.m. that evening.

### **CAUSE OF DEATH**

The county medical examiner determined the cause of death to be from closed head injuries.

### **RECOMMENDATIONS & DISCUSSIONS**

Recommendation #1 Employers should read and follow the recommendations in the attached publication, *NIOSH Alert: Preventing worker Deaths and Injuries from Falls Through Skylights and Roof Openings*.

Discussion: After studying a number of fatalities involving falls through skylights, NIOSH published an alert with case studies and recommendations for preventing future incidents. These recommendations include:

- \* Guarding skylights and other roof openings with railings or screens before starting work, or providing fall protection devices such as lifelines and lanyards.
- \* Training employees to recognize the dangers of sitting or stepping on skylights.
- \* Affixing decals on skylights warning against sitting or stepping on them.
- \* Redesigning skylights to support the weight of a person who falls on it.

Recommendation #2: Employers should develop, implement, and enforce a comprehensive employee safety program.

Discussion: In this situation, the employer apparently did not recognize the hazard of the unprotected skylights. To help prevent future incidents, FACE recommends that employers develop, implement, and enforce a comprehensive safety program to reduce or eliminate hazardous situations. The safety program should include, but not be limited to, the recognition and avoidance of fall hazards and include appropriate worker training.

It is extremely important that employers obtain accurate and up-to-date information about ensuring safe working conditions and adhering to OSHA standards. The following sources of

information may be helpful:

U.S. Department of Labor, OSHA

On request, OSHA will provide information on safety standards and requirements for fall protection. OSHA has four offices in New Jersey which cover the following areas:

- Hunterdon, Middlesex, Somerset, Union, and Warren counties...(908) 750-4737
- Essex, Hudson, Morris, and Sussex counties.....(201) 263-1003
- Bergen and Passaic counties.....(201) 288-1700
- Atlantic, Burlington, Cape May, Camden, Cumberland,  
Gloucester, Mercer, Monmouth, Ocean, and Salem counties.....(609) 757-5181

NJDOL OSHA Consultative Services

This organization, located in the New Jersey Department of Labor, will provide free advice for business owners on methods of improving health and safety in the workplace and complying with OSHA standards. The telephone number is (609) 292-3922.

New Jersey State Safety Council

The NJ Safety Council provides a variety of courses on work-related safety. There is a charge for the seminars. The address and telephone number is: NJ State Safety Council, 6 Commerce Drive, Cranford, New Jersey 07016. Telephone (908) 272-7712

Recommendation #3: Fixed vertical ladders should be equipped with a fall protection device.

Discussion: It was noted during the inspection that a safety belt was used while opening the hatchway to the roof. FACE recommends expanding this system to protect the worker while climbing the ladder, such as with the use of a verticle fall protection system. These systems use a device which slides along a rail or cable attached to the ladder. The worker hooks off to the device, which allows him to move up the ladder. If the worker falls, the device will grab the rail or cable and stop the fall. An alternative, less effective means of protection is a ladder cage that surrounds the ladder.

**ATTACHMENTS**

*NIOSH ALERT: Perverting Worker Deaths and Injuries from Falls Through Skylights and Roof Openings.* DHHS (NIOSH) Publication 90-100, National Institute for Occupational Safety and Health, Cincinnati OH (513) 533-8287.

## **REFERENCES**

Code of Federal Regulations 29 CFR 1926.501; Federal Register, 29 CFR 1910 and 1926, *Safety Standards for Fall Protection in the Construction Industry, Final Rule*. U.S. Government Printing Office, Office of the Federal Register, Washington DC. August 9, 1994.

## **DISTRIBUTION LIST**

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NIOSH

Employer

Decedent's Family

NJ State Medical Examiner

County Medical Examiner

Local Health Officer

NJDOH Census of Fatal Occupational Injuries (CFOI) Project

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USDOL-OSHA Region II Office

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NJDOL OSHA Consultative Service

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