

Iron Worker Dies After Falling 20 Feet From Structural Steel

DATE: July 9, 1992

SUMMARY

On March 9, 1992, a 49 year-old male iron worker was fatally injured after falling from the structural steel framework of a building under construction. The incident occurred while the victim was preparing to install steel decking sheets to the peak of a roof. The victim had just climbed up to a stack of steel decking that was resting between two steel girders. After taking a short break, he apparently moved to the side of the stack and was trying to separate the first sheet from the stack with a screwdriver when he fell 20 feet to the concrete floor below. He died of his injuries the next day, 29 hours after the incident. NJDOH FACE investigators concluded that, in order to prevent similar incidents in the future, employers should follow these safety guidelines:

- *Ensure that fall protection is used whenever employees are working at heights.*
- *Ensure that established company safety procedures are followed at all times.*

INTRODUCTION

On March 11, 1992, NJDOH FACE personnel were informed by an area OSHA compliance officer of a worker who died of injuries suffered in a work-related fall. A FACE investigator contacted the employer and arranged a site visit which was conducted on March 20, 1992. The site investigation included interviewing the employer and a witness, and photographing the scene. Additional information was obtained from the OSHA file, police report, and medical examiner's report.

The victim was a 49 year-old male journeyman iron worker who had been recently hired from the union hall and had worked on the project for less than two weeks. The employer was a construction company who has been in business since 1963 and employed a total of 94 people, 17 of which were employed at the site where the incident occurred. The company did not provide any type of employee training as most of the workers at the site were hired from the trade union halls and were certified by the union as trained journeymen and apprentices. Although the company did not employ a safety person, they did have an extensive written safety program. A union shop steward sometimes acted as the site safety representative. The foreman stated that a safety meeting was held each Monday morning.

INVESTIGATION

The incident occurred at the construction site of a large, uniquely designed building located in a park near an urban area. Work on the building had progressed to the point where the structural steel framing,

floors, and outer walls were nearly complete. The employer had been subcontracted to do the steelwork on the structure, and was currently in the second week of decking the roof. This was done by applying corrugated steel decking sheets to the structural steel supports and welding them into place. The decking sheets were 10 feet long by 2 feet wide and came stacked in 1 foot thick bundles containing 26 sheets per bundle. The sheets were coated with a light film of oil and were bound with steel bands.

The day of the incident was sunny and clear with temperatures in the 50s. A foreman and two iron workers were assigned to install the steel decking to one of two peaks of the roof. The decking had been placed near the work area on two steel girders located 20 feet above the concrete floor. At about 10 a.m., the victim completed a coffee break and climbed up onto the steel framing. His job was to set the decking across the framework which would then be welded into place by his two co-workers, who were busy welding angle irons into place. Waiting for the welders to complete their work, the victim walked across the girders and sat on the stack of decking to smoke a cigarette. He was wearing a safety belt with a hemp rope lanyard wrapped around his waist, but was not tied off to the structure.

No one witnessed the direct cause of the fall. One co-worker stated that he last saw the victim by the side of the stacked sheets trying to separate the top sheet from the stack with a screwdriver. Both co-workers were welding with their backs to the victim when they heard him say "Whoa!". One co-worker turned to see him falling sideways through the steel work while the second saw him hit the concrete deck. Other workers immediately went to the victim's aid and summoned the police and paramedics. While they were waiting for help, the workers prepared a "scale box" a 5' by 7' platform suspended by a crane to assist in removing the victim. After being lowered to the ground in the scale box, the victim was loaded into an ambulance and taken to a nearby field where he was airlifted by helicopter to the regional trauma center. He died at the trauma center 29 hours later.

CAUSE OF DEATH

The county medical examiner attributed the cause of death to multiple traumatic head injuries from a fall from a height.

RECOMMENDATIONS AND DISCUSSION

Recommendation #1: Employers must insure that fall protection is used whenever employees are working at heights.

Discussion: In this case, the employee was wearing a safety belt and lanyard but did not tie onto the structure. As fall protection is only effective when used, employers must ensure that fall protection is used at all times when employees are working at heights. In cases where standard safety belt and lanyards may be restrictive or impractical, several alternative methods are available. These include:

Personal lifeline systems: This system attaches the worker to the structural steel with a system of belts, lanyards, and lifelines. In cases where the employee needs more mobility, a retractable cable reel is available. This provides the employee with all the lifeline they may require but locks off if the employee falls. Properly used, these systems can provide fall protection at all times and are appropriate for many steel erection operations.

Safety nets: Personnel nets are designed to catch and hold a falling worker when set up beneath and around the work area. Safety nets are recommended in areas where standard safety belt and lifelines may not be practical, such as due to a lack of attachment points. Nets are also useful in situations where a large number of workers need to be protected and during long term projects. Although the federal OSHA standard 29 CFR 1926.750 (b)(i) requires safety nets for working at fall distances greater than 25 feet, the use of netting in this case would have provided protection for the employee.

Recommendation #2: The employer should ensure that established company safety procedures are followed at all times.

Discussion: The employer had an extensive written safety program in place which required the use of fall protection whenever employees were aloft. If there were problems in tying off the lifelines, the program required that special provisions would be planned in advance for providing a safe place to tie off to. In this case, the company did not enforce their own policies requiring fall protection or planning tie-off points in advance. Companies must emphasize the safety of their workers by strictly enforcing established company safety procedures.

REFERENCES

Code of Federal Regulations 29 CFR 1926, 1991 edition. U.S. Government Printing Office, Office of the Federal Register, Washington DC. pg 266

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