

Production Supervisor Falls 19.5 feet through a Metal Roof and Dies

Incident Number: 14KY048



Photo courtesy of KY OSH

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Kentucky Fatality Assessment and Control Evaluation (FACE) Program

Incident Number: 14KY048

Release Date: August 24, 2015

Subject: Production Supervisor Falls 19.5 Feet through a Metal Roof and Dies

Introduction

On August 7, 2014, a 52-year-old supervisor at a graphite manufacturing plant and another employee walked to the outside second floor area between a warehouse and the main plant to troubleshoot a problem occurring in one of the blending procedures. They climbed through the guard rails onto a catwalk, then out onto a second story flat metal roof to access the pneumatic feed system. The supervisor disconnected the conveyance line and checked for clogs. After not seeing any apparent clogs, he sent the other employee back into the warehouse to turn on the blower and check the line. The employee was advised by the supervisor to turn off the blower after he received a visual signal from the supervisor. When the employee did not receive the signal from the supervisor, he returned to the work area. Upon arriving to the work area, the employee heard the supervisor yell for him and found him lying on the ground. The supervisor had stepped through a rotten area of the roof and had fallen 19 feet 6 inches to the hard, dirt surface below. Emergency medical services were called to the scene. The supervisor was transported to a local hospital and then transferred to an out-of-state trauma center where he remained until his death on August 24, 2014.

To prevent future occurrences of similar incidents, the following recommendations have been made:

Recommendation No. 1 Employer worksites should be regularly assessed for structural integrity.

Recommendation No. 2: Employers should evaluate and make changes to troubleshooting to prevent exposing employees to hazards.

Recommendation No. 3: Employers should require that railing systems or fall protection always be used when working on roofs.

Recommendation No. 4: Employers should train new employees on fall protection and proper use of fall protection and require annual refresher training.

Employer

The employer was established in 1976. The employer provides value-added graphite and carbon-based solutions globally. The company employs 72 employees.

Written Safety Programs and Training

The employer had written safety and health programs, a safety committee and provided safety training to employees. However, there were deficiencies observed in their worker safety programs and training. While full body harnesses and lanyards were onsite, the employees had not been fully trained in fall protection and did not know how to properly use the equipment.

Victim

The victim was a 52-year-old man, who had been employed with the company for 26 years. He was a production supervisor and a college graduate with a degree in agriculture.

Incident Scene

The scene was a metal roof covering a loading dock with a hardened earth surface. The roof area was flat and had a catwalk that ran over for access to the top of the roof. The edge of the roof area did not have any railings present and was 19 feet 6 inches above the ground. The area was slightly more than 13 feet wide. The metal roof had visible signs of rust and deterioration (see photo 3). Plywood was used to cover holes in the metal.

Weather

August 7, 2014, was a clear day with temperatures ranging from 80 to 92 degrees Fahrenheit. Weather was not considered a factor in this fatality.

Investigation

On August 24, 2014, the Kentucky Fatality Assessment and Control Evaluation Program was notified by the Kentucky Labor Cabinet of an occupational fatality involving a supervisor.

Approximately 8:00 pm on August 7, 2014, a 52-year-old production supervisor and another employee set out to inspect a blending process issue within a pneumatic feed system. To do this, they entered the outside second floor area between a warehouse and the main plant. The work area was a flat metal roof above a loading dock, with a catwalk that ran over the top of the roof (see photo 4). The roof area where employees were working was 19 feet 6 inches above the ground, with no standard railing or other fall protection in place. Like they had done regularly, they climbed through the guard rails onto a catwalk on the roof to access the pneumatic feed system.

The supervisor disconnected the conveyance line and checked for clogs. After not seeing any apparent clogs, he sent the other employee back into the warehouse to turn on the blower and see if the line was cleared. The employee was advised by the supervisor to turn off the blower after he received a visual hand signal from the supervisor. When the employee did not receive the signal from the supervisor, he returned to the work area. He did not see the supervisor on the roof and did not notice the hole in the roof. He checked in the main plant and the control room and did not find the supervisor. Returning to the work area, the employee heard the supervisor yell

for him and found him lying on the ground. The supervisor had stepped onto a rotten area of the metal roof and had fallen through the roof 19 feet 6 inches to the hard dirt surface below.

The supervisor complained of pain in his hip and heel area. Emergency medical service were called and the supervisor was transported to a local hospital, arriving at 8:42 pm. He was transferred the next day to a trauma center located out of state, 74 miles away. The supervisor underwent surgery to repair pelvic fractures. He also suffered multiple rib fractures, multiple spine fractures, and heel and wrist fractures, all of which were non-operative. Hospital staff reported the supervisor's vital signs had been stable and he was awaiting transport to a rehab facility pending insurance approval. On August 24, 2014 the supervisor reported to the nursing staff he was feeling anxiety, and he became unresponsive, and there was a loss of pulse. He underwent 15 minutes of Advanced Cardiac Life Support without success. The Supervisor was pronounced dead at 1:33 am.

While this is the first time an employee had fallen through the roof, this was not the first instance where the deteriorated roof had given way. At least two employees had previously had the roof collapse beneath their feet, indicating that there was previous awareness of the structural work hazard. During the investigation, it was discovered that there were available fall protection harnesses, but none of the employees knew how to properly wear the fall protection.

Cause of Death

The cause of death was cardiopulmonary arrest.

Recommendations and Discussions

Recommendation No. 1 Employer worksites should be regularly assessed for structural integrity.

The metal roof was in poor condition as evidenced by the plywood sections covering holes and that there had been at least two other employees who stepped through the roof but had not fallen. The roof was not in suitable condition to support human body weight. Routine assessment of the structural integrity of the roof and regular maintenance of the roof would have prevented this fatality.

Recommendation No. 2: Employers should evaluate and make changes to troubleshooting to prevent exposing employees to hazards.

Reviewing and re-evaluating how trouble shooting problems for the blending procedures are performed could eliminate the risk of injury or death to employees who have to perform this procedure to keep production process running.

Recommendation No. 3: Employers should require that railing systems or fall protection always be used when working on roofs.

Employers should install railing systems or fall protection when employees need to access an open-sided floor or platform more than four feet above the adjacent level. When employees are required to work or walk in areas, elevated railings and fall protection are required by standard 29 CFR 1910.23(c) (1).¹

Recommendation No. 4: Employers should train new employees on fall protection and proper use of fall protection and require annual refresher training.

It was discovered that the employer had furnished fall protection for employees but during KY OSHA employee interviews, no one knew how to properly use the equipment or was aware of the strength requirements for anchors. There were no tie-back type lanyards. There was a horizontal lifeline system next to the accident location but it was not properly installed because wire clips were not in the correct orientation. The employer did not have a qualified person to evaluate anchorages for personal fall arrest systems used by employees at the facility, and no formal personal protective equipment hazard assessment. Training on fall protection and how to use the equipment is necessary to ensure employee safety when working on roofs.²

Keywords

Construction falls
Open walkways
Guarding openings
Fall protection
Training
Worker fatality
Worker safety
OSHA
Occupational safety
Roofing

References

¹ 29 CFR 1910.23(c) (1)-Protection of open-sided floors, platforms, and runways. *OSHA*. [http://www.gpo.gov/fdsys/pkg/CFR-2012-title29-vol5/pdf/CFR-2012-title29-vol5-sec1910-23.pdf] Accessed on December 15, 2014.

² 29 CFR 1926.503 subpart M Training requirements.

Acknowledgements

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Photo 2: Incident scene

Photo courtesy of KY OSH

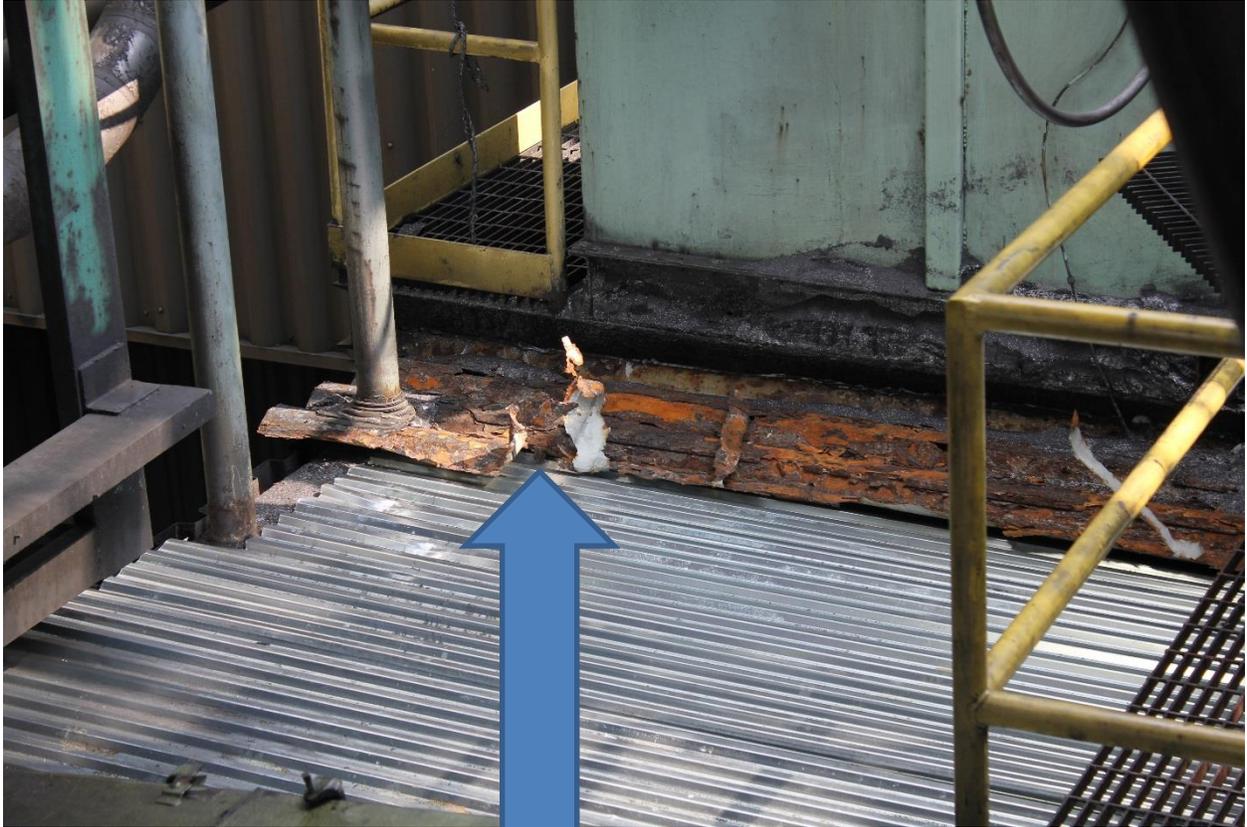


Photo 3: rusting roof

Photo courtesy of KY OSH



Photo 4: catwalk used

Photo courtesy of KY OSH