

Case 158. 31-year-old Hispanic laborer was killed when he landed head first onto cement after he fell nearly 29 feet from a flat roof.

A 31-year-old male Hispanic laborer was killed when he landed head first onto cement after he fell nearly 29 feet from a flat roof. The decedent was one of three employees on a roof laying roofing material. The decedent was placing metal two-inch seam plates at the perimeter of the 190-foot by 88-foot roof. After the decedent placed the seam plates, one of his coworkers would screw them down. The third coworker, who was acting as safety monitor as well as having other duties on the roof, was approximately 95 feet away. At the time of the incident, the crew was using a warning line that the steel erectors had left on the roof. This warning line consisted of stanchions and yellow rope and chain that were not properly flagged. The work crew took a work break. After the break, the decedent also started to screw the two-inch plates down. Backing toward the roof corner, the decedent backed under the warning line and began to pull his power cord toward the roof corner. The safety monitor noticed that the decedent was nearing the edge of the roof and yelled for him to stop and watch out for the roof edge. There was a lot of jobsite noise at the time of the incident. Apparently, the decedent did not hear him. The decedent took a few more steps backward and fell from the roof edge. 911 was called and the decedent was transported to a local hospital. After the incident and prior to the MIOSHA site visit, the employer erected a warning line that was comprised of yellow rope and a multi-colored flagged line in the southwest portion of the roof and a yellow chain and multi-colored flagged line in the northeast portion of the roof. The line was sagging excessively (18-21 inches) at several spots on the roof.

MIOSHA Construction Safety and Health Division issued the following Serious and Other-than-Serious citations at the conclusion of their investigation:

SERIOUS:

FALL PROTECTION, PART 45, RULE 4502, REF OSHA 1926.502(f)(2).

Warning line shall consist of ropes, wires, or chains, and supporting erected as follows:

- i. The rope, wire or chain shall be flagged at not more than 6-foot (1.8 m) intervals with high visibility material;
- ii. The rope, wire or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.9 m) from the walking/working surface and its highest point no more than 39 inches (1.0 m) from the walking/working surface;
- iii. After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 N) applied horizontally against the stanchion, 30 inches (0.8 meters) above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;
- iv. The rope, wire, or chain shall have a minimum tensile strength of 500 pound (2.22 kN) and after being attached to the stanchions shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph (f)(2)(iii) of this section; and

- v. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

Employees engaged in roofing work, exposed to a fall of 28 feet 8 inches. Roof size was 190 feet by 88 feet. Warning line sagging excessively in several spots on the roof, especially in the Southwest corner; line sag was 21 inches from the rooftop of the West side and 18 inches from the rooftop on the South side and was flagged at intervals in excess of 15 feet.

SERIOUS:

FALL PROTECTION, PART 45, RULE 4502, REF OSHA 1926.502(H)(1).

Safety monitoring systems [See 1926.501(b)(10)(k)] and their use shall comply with the following:

The employer shall designate a competent person to monitor the safety of other employees and the employee shall ensure that the safety monitor complies with the following requirements:

- i. The safety monitor shall be competent to recognize fall hazards;
- ii. The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner;
- iii. The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored;
- iv. The safety monitor shall be close enough to communicate orally with the employee; and
- v. The safety monitor shall not have other responsibilities, which could take the monitor's attention from the monitoring function.

The safety monitor had other responsibilities related to the installation of the roof and was working at a distance of up to 95 feet from the employee(s) working outside the warning line.

SERIOUS:

FALL PROTECTION, PART 45, RULE 4502, REF OSHA 1926.503(a)(1).

The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

No proof of a training program for employees exposed to fall hazards.

SERIOUS Item 4:

GENERAL RULES, PART 1, RULE 114(2).

An accident prevention program shall as a minimum, provide for all of the following:

- (a) Designation of a qualified employee or person with responsibility to administer the program.
- (b) Instruction to each employee regarding the operation procedures, hazards, and safeguards of tools and equipment when necessary to perform the job.
- (c) Inspection of the construction site, tools, material, and equipment to assure unsafe conditions that could create a hazard are eliminated.
- (d) Instruction to each employee in the recognition and avoidance of hazards.
- (e) Instruction to each employee who is required to handle or use known poisons, toxic materials, caustics, and other harmful substances regarding all of the following:
 - (i) The potential hazards.
 - (ii) Safe handling.
 - (iii) Use.
 - (iv) Personal hygiene.
 - (v) Protective measures.
 - (vi) Applicable first aid procedures to be used in the event of injury.
- (f) Instruction to each employee if known harmful plants, reptiles, animals, or insects are present regarding all of the following:
 - (i) The potential hazards.
 - (ii) How to avoid injury.
 - (iii) Applicable first aid procedures to be used in the event of injury.
- (g) Instruction to each employee who is required to enter a confined space regarding all of the following:
 - (i) The hazards involved.
 - (ii) The necessary precautions to be taken.
 - (iii) The use of required personal protective equipment.
 - (iv) Emergency equipment.
 - (v) The procedures to be followed if an emergency occurs.
- (h) Instruction in the steps or procedures to be followed in case of an injury or accident or other emergency.

Accident prevention program has several deficiencies, including but not limited to: No designation of a person responsible for administering the program, inaccurate information regarding perimeter-guarding, guardrail, and warning lines.

OTHER-THAN-SERIOUS:

FALL PROTECTION, PART 45, RULE 4502, REF OSHA 1926.502(i)(4).

All covers shall be color-coded or shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

Note this provision does not apply to cast iron manhole covers or steel grates used on streets or roadways

Employees engaged in roofing work exposed to a fall of approximately 15 feet to floor below due to covers not being marked.

OTHER-THAN-SERIOUS:

FALL PROTECTION, PART 45, RULE 4502, REF OSHA 1926.503(b)(1).

The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

No written certification of fall protection hazard training upon request.