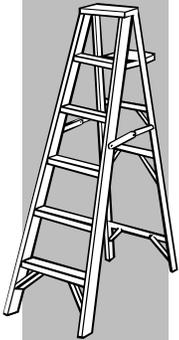


Laborer Killed in Fall Through Roof

A 40-year-old laborer/helper died when he fell through an opening in a warehouse roof. He fell approximately 27 feet to the floor below.



The employer was demolishing the roof of the warehouse portion of a commercial building. Work was done at night because the coal tar on the roof would release hazardous gases if disturbed in the heat of the day. The site had adequate halogen lighting. None of the workers on the job were using fall protection.



After the roofing material was removed, 4x8 foot sheets of plywood were exposed. Any damaged sheets needed to be replaced. The helper's job was to follow the workers who were replacing the plywood, and to pick up the damaged sheets of plywood they had removed. He disposed of them in a chute.

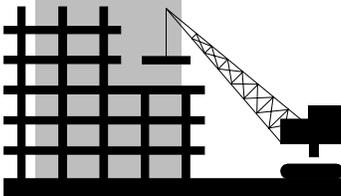
On this evening, one worker had removed a sheet of damaged plywood, but had run out of nails to attach the replacement plywood. He walked away to get more nails. The opening where the damaged plywood had been was left unguarded. The crew was not informed that it was temporarily unguarded. The opening was covered by silver-colored insulation inside the roof.

The helper came along, picked up the sheet of damaged plywood, and headed for the chute. He stepped into the opening, ripped through the insulation, and fell.

April 20, 1998



What should have been done to prevent this accident?



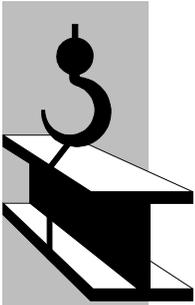
Preventive Measures

Cal/OSHA investigated this accident and made the following recommendations.

Employers should:

- Have Site Safety Plans addressing potential hazards which could lead to injury or death.
- Ensure that roof openings are not left unprotected, unguarded, or uncovered.
- Equip all workers on the roof with fall protection (such as harnesses and lanyards). A retractable lanyard would allow the helper to do his job and still have fall protection.
- Require that all hazards on the site be communicated on an ongoing basis to all workers in the area.

This Case Study is based on an actual California incident. For details, refer to California Dept. of Health Services, Occupational Health Branch, Fatality Assessment and Control Evaluation (FACE) Report #98CA005.



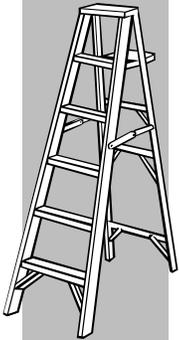
Ironworker Dies After Falling Off Beam

A 42-year-old structural ironworker foreman died when he fell off a steel beam in an incomplete warehouse roof. He fell about 38 feet to the floor below.



The employer was installing the final structural steel beam (bar joist) in the roof of a new cold storage warehouse under construction. After a crane lifted the beam into place, it was not quite straight and the ironworker foreman wanted to use a hammer to straighten it.

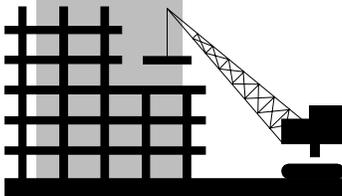
The area where the foreman needed to work had been barricaded with wire rope safety lines on all four sides, but he removed these lines to gain access. He was not using fall protection equipment.



The foreman was standing on a portion of roof decking that had already been completed. To get to the beam, he reached his left foot out over an open, undecked area of the roof. He rested his left foot on the nearest joist girder. As he was preparing to strike a blow with the hammer, his foot slipped off the girder. His hands caught the bar joist, but he couldn't hold on and fell.

June 29, 1998

What should have been done to prevent this accident?



Preventive Measures

Cal/OSHA investigated this accident and made the following recommendations.

Employers should:

- Require everyone working at heights to wear fall protection equipment.
- Make sure openings are properly covered or otherwise protected.
- If possible, provide alternate means of access to the work, such as an aerial lift (zoom boom).

This Case Study is based on an actual California incident. For details, refer to California Dept. of Health Services, Occupational Health Branch, Fatality Assessment and Control Evaluation (FACE) Report #98CA010.