

CSI Country Wide Case Study Safety Strategy Discussion

Construction Safety Investigator



Instructions:

The objective of this tool is to provide field supervisors with information to proactively engage workers and discuss safety-related concerns they may encounter. Safety discussions should not be limited to the subject above and should pertain to the activities that workers will be involved in that may have the potential for safety-related exposures.

Case Date:

2017

Accident Type:

Asphyxiation Accident

Relevant Laws, Rules, and Codes May Include:

29CFR 1926.20(a)(1); 29 CFR 1926.20(b)(2); 1926.21(b)(2); 1926.55; 1926.103; 1910.134; 1926.57

Case:

Carbon Monoxide Poisoning – Asphyxiation Accident

Accident Detail:

A laborer, working alone in a vacant store in a shopping mall, died of carbon monoxide poisoning as a result of operating a gasoline-powered, walk-behind concrete saw in an enclosed space.

The saw was being used to cut through the concrete floor in order to dig new plumbing trenches. The store had a front door and no openable windows. The store was narrow and deep, measuring 24 feet wide by 57 feet deep with a 12-foot ceiling.

At the time of the incident, the space was not mechanically ventilated and had no natural ventilation.

Reconstructive Safety Evaluation:

- What are some of the possible causes of the accident being discussed?
- What actions could have been taken that might have prevented this accident?

Accident Scene Conclusion:

- The victim was brought onto the job by an acquaintance who had worked for seven years as an unlicensed plumber. The victim had worked with the plumber on and off for six months.
- The general contractor had a written Injury and Illness Prevention Program but it was outdated and there was no evidence that it had ever been implemented.
- The plumber and the victim began work cutting the concrete slab floor with the front door open and a pedestal fan in the door opening to blow air out. They were wearing air-purifying respirators with organic vapor cartridges, which the plumber had purchased.

- The plumber reported that he had not received any training in respiratory protection and did not know that carbon monoxide was a hazard associated with using a gasoline-powered concrete saw indoors. He also did not know that these respirators offer no protection against carbon monoxide exposure.
- The following morning, the victim was dropped off at the jobsite to finish the saw work on his own. The victim wore his respirator but did not open the front door or turn on the pedestal fan.

Preventive Safety Measures Include:

- Complete a Job Safety Task Analysis (JSTA) that includes scope of work, anticipated exposures, and safety equipment and/or procedures needed to ensure that the task is completed successfully and safely.
- Conduct a pre-work meeting to review the JSTA and ensure that workers understand the task to be completed, any safe working procedures, and have the necessary safety equipment.
- Employees should have adequate training on job-specific tasks. Proper training must extend to all workers, including day laborers. Language barriers and communication should also be considered during training.
- When possible, only electric-powered concrete saws should be used in enclosed spaces. If a generator powers the electric saw, the generator must be placed outdoors, well away from the enclosed space.
- If gas powered equipment is necessary, adequate ventilation as well as appropriate air monitoring should be in place during this operation.
- Ventilation requirements specific to an operation and location should be determined by a Qualified Person.
- Employers should train employees to understand that all fuel-powered tools emit carbon monoxide and represent a potentially fatal hazard when used in enclosed spaces. Employees should also be trained to recognize the signs and symptoms of carbon monoxide poisoning and understand the limitations of respiratory protection.

Attendance Roster:

Reference: NIOSH FACE Program, State FACE Reports, California – California Case Report: 17CA001

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