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 that 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 Day:

2007

Accident Type:

Scaffolding Accident - Bridge Construction

Relevant laws, rules and codes may include:

29CFR 1926.21(b)(2), OSHA 29 CFR 1926 subpart M, OSHA 29 CFR 1926.502(k), 29 CFR 1926 subpart L (scaffolds), (29 CFR 1926.451(a), Scaffolding)

Case:

Worker Dies When Falls Through Temporary Wood "Catch" Platform

Accident Detail:

The construction project involved work on a bridge deck where a "catch" platform below the work area was designed to prevent any construction debris generated on site from falling to the ground below. The "catch" platform is a set of wooden planks (e.g. 2' X 10') that are placed from the bottom of one I-beam to the bottom of another I-beam, with the end of the planks set to simply rest on the lip of the I-beam. The planks are typically not secured to the I-beam, and it is common to observe gaps and shifting of the planks in a "catch" platform.

The victim stepped down from the I-beam onto the wooden catch platform to move a "pic" board, a metal runway used to transport concrete between work areas on the bridge. Immediately after the victim stepped down, one plank broke across its width, resulting in the employee falling partially through the platform. As the employee fell, other wooden planks making up the platform shifted because the planks were not affixed to one another, and the victim fell completely through the platform.

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 from occurring?



Accident Scene Conclusion:

- A failure analysis of the broken plank by OSHA revealed that the major strength reducing feature of the plank was the Slope-of-Grain (SOG), which was 1:2 (i.e., the grain along the length of the board deviated from the long axis of the plank by a distance of 1 inch for every 2 inches in length).
- Acceptable SOG for scaffold-grade lumber is a minimum of 1:12.
- · The OSHA failure analysis demonstrated that the wood used in this platform was inadequate as a walking/working surface.
- In addition, the COSHO observed planks being reused on the bridge "catch" that had been previously removed from service due to structural concerns, and noted visibly damaged wooden planks as well as planks that had shifted, leaving open spaces in the platform.

Preventive Safety Measures Include:

- Complete a Job Safety Task Analysis that includes scope of work, anticipated exposures and safety equipment and/or procedures needed to ensure the task is completed successfully and safely.
- Conduct a pre-work meeting to review the JSTA and ensure workers understand the task to be completed, any safe working
 procedures and have the necessary safety equipment.
- · Personnel working at heights of six feet or greater should have effective fall protection and prevention.
- Temporary surfaces that are accessed and used by personnel must be designed, maintained, and inspected to assure that they are safe.
- Surfaces that are not designed for worker access use must be clearly identified and entry to those areas must be prevented.
- Wooden planks or other materials used for temporary work platforms and the supports that hold them in place must be designed and made of material that can support at least four times the maximum intended weight.
- Catch designs and/or construction procedures that hold individual planks together to prevent shifting of the planks should be employed.
- Employees must be trained to report any problems with wooden decking planks that might be damaged or planks that have their integrity compromised. Companies must designate a person to actively survey the planks and promptly replace any planks that have compromised integrity.

Attendance Roster	

Reference: This case was reported in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program.

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