CSI Country Wide Case Study Safety Strategy Discussion

Construction Safety Investigator

Instructions

CHUBB

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:

Unknown

Accident Type:

Tilt Up Construction Accident - Unsecured Wall Panel

Relevant laws, rules and codes may include: 29CFR 1926.20(a)(1), 1926.21(b)(2), 29 CFR 1926.704(a)

Case:

Three construction workers were killed and others injured when a 23' high, 20' wide, 40,000-pound concrete wall panel fell to the ground.

Accident Detail:

The wall panel was one of many making up the exterior wall of a box-type, tilt-up structure. The contractor fabricated the wall panels on-site horizontally and "tilted" them up to vertical on their footings and then temporary braces were installed to support them.

Later in the day, seven workers eating lunch in the shade of the wall were not notified that the braces were about to be removed. After the braces were removed, the wall panel, lacking permanent connections, was free standing, supported only by alignment shims. As a result, the panel began to fall. When the panel fell, two workers escaped, two were grazed and slightly injured but three men were unable to escape and were killed instantly.

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:

The investigation revealed that by contract, 100 percent of welds were required to be inspected. The inspector however, only inspected a sample of the welds. As a result, several welds were found to be missing. The wall panel was not secured by grouting nor by the pourback/ leave out connection to the floor slab. The wall panel was assumed secure and stable when, in fact, it was not. It was also assumed safe to remove temporary braces from the wall panel when, in fact, it was not.

Preventive Safety Measures Include:

- All operations are preplanned using a Job Safety Task Analysis (JSTA) to ensure potential safety hazards associated with an operation are identified and appropriate steps are taken to eliminate or control them.
- Workers are trained in the hazards of tilt-up construction and understand the process, the personal protective equipment and safe work procedures necessary to perform their assigned tasks.
- Ensure there is adequate support of tilt-up panels once they are raised and wall panels remain braced until all permanent structural connections, as specified by the job specifications, are complete.
- Ensure the panel's permanent connections to the structure (welds, grout, pour-back strip) were completed and acceptable before removing temporary braces.
- Ensure those employees tasked with inspecting the process are adequately trained on job specifications, hazards of tilt-up construction and qualified to perform the task.

Attendance Roster

Reference: This case was reported in the NCDOL Industry Alert "Tilt Up Wall Construction can Be Deadly".

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