

Apprentice Ironworker Struck by Dropped Steel Wedge

INCIDENT FACTS

REPORT #: 71-217-2022s

REPORT DATE: February 28, 2022

INCIDENT DATE: May 24, 2017

VICTIM: 25 years old

INDUSTRY: Structural steel and precast
concrete contractors

OCCUPATION: Apprentice ironworker

SCENE: New construction of cold storage
facility

EVENT TYPE: Struck by



A 25-year-old apprentice ironworker was seriously injured after he was struck by a dropped steel wedge.

The apprentice was employed by a structural steel and precast concrete contractor. His employer was a subcontractor erecting the steel structure of a new construction cold storage facility. He had worked for the employer for about two months.

On the day of the incident, two ironworkers were working from the basket of a boom lift to install a beam on a column.

This procedure generally took them 30 seconds to a minute before they quickly moved on to the next install.

The ironworkers were using a steel wedge between the column and beam to help tighten the bolts securing them. One of the ironworkers was removing the wedge, which was under pressure, using a hammer to knock it loose.

As he was doing this, the untethered wedge broke free, but he was unable to hold on to it, and it fell approximately 50 feet.

At this moment, the apprentice was in the area below getting a bottle of water that was being stored there for workers. As he was bending over to pick up the bottle, the wedge struck him in his upper back near his left shoulder.

The apprentice suffered injuries to his shoulder, ribs, and lungs that kept him from working for several months.

Investigators found:

- The employer had not provided workers with a means of securing wedges from falling or being dropped.
- The employer had not used red caution tape to keep workers out of the area below where the ironworkers were working.
- There was not a designated water station.
- The ironworkers did not expect anyone to be working below them because there were no other workers in the area.



Photo 1. Incident scene at the cold storage facility being constructed. This was the area where an ironworker accidentally dropped a steel wedge that he was attempting to remove from between a beam and column. The wedge fell approximately 50 feet, striking the apprentice on the ground floor below.



Photo 2. Interior view of incident scene at the cold storage facility under construction.



Photo 3. Area where the apprentice ironworker went to retrieve a bottle of water when he was struck by the dropped steel wedge.



Photo 4. Steel wedge that struck the apprentice ironworker in his upper back near his left shoulder.

INJURY NARRATIVE



Photo 5. Employer modified steel wedge with a washer welded to the wedge and a wire attached to the washer that is used as a tether. Alternatively, a hole could be drilled into the wedge and a tether attached to it.

Recommendations

FACE investigators concluded that, to help prevent similar occurrences where workers may be in danger of being struck by dropped objects employers should:

Plan ahead and train

- Use red caution tape and/or have a spotter on the ground to keep workers from entering areas where objects may be dropped.
- Locate employee water stations away from active work areas.
- Provide safety training to new workers to ensure they understand the hazards associated with the work site.

Recommendations

Prepare tools and equipment

- Require that wedges and other tools used by workers at heights have lanyards, tethering devices, holsters, buckets and other devices to secure them.
- Add attachment points to wedges if they do not have them so they can be secured to a tether.
- Ensure that tethering systems are ANSI/ISEA 121-2018 Dropped Object Prevention Solutions compliant.
- Secure wedges and other tools, both when in use and not in use.

Resources

ANSI/ISEA 121-2018 American National Standard
for Dropped Object Prevention Solutions

INJURY NARRATIVE

This narrative was developed to alert employers and workers of a tragic incident and is based on preliminary data ONLY and does not represent final determinations regarding the nature of the incident or the cause of the injury.

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