

Struck by concrete forms—Insp # 1602868 Lee Company

A **35 year old male** employee was operating a trimble unit to set the plumbing penetration point on the 31st floor when he was **struck by a dropped load of new concrete formwork.**

Employee was struck in the back of the head with his back turned to a load of multiple 4' x 8' concrete forms being offloaded on the 31st floor by a crane operator. The employee was pushed by the force of the strike and fell approximately 30 feet down a stairwell shaft that wasn't completed. On the 28th floor is where the stairs in the stairwell shaft began. Employee struck his head on the steps and his legs struck the existing wooden stair railing on the outside perimeter of the stairs. Due to the force of the fall the employee's legs broke the top and middle rail of the 28th floor guardrail system. In addition, multiple 4' x 8' sections of the formwork fell down the unfinished stairwell shaft hitting multiple shoring posts and destroying the existing guardrail systems from the 31st to the 28th floor.

It was determined that Harcon Inc. had been subcontracted for concrete work, specifically all horizontal concrete formwork. At the time of the fatality, the building had reached the 31st floor. A tower crane operator employed by Maxim Crane Works, L.P. had been working with two qualified riggers employed with Harcon Inc. to move material such as stacks of 4'x 8' concrete formwork. The crane operator had been working with the pair since the erection of the 15th floor. The CSHO determined that three Lee Company employees were working from the 31st floor to install PEX chairs and sleeves. The victim was utilizing a trimble unit to set the PEX components in the designated locations. Additionally, the two Harcon Inc. employees were on the 31st floor rigging and guiding horizontal concrete formwork. The crane operator was communicating with the Harcon, Inc. riggers to move the material.

The fatality occurred when one of the Harcon Inc. riggers communicated with the crane operator to make a blind pick from the corner of the elevator core. The pick was blind due to the angle of the crane cab and the fact the elevator core extended above the location of the pick in the line of site from the crane operator to the load itself. The Crane operator had to rely on effective communication with the rigger to ensure a safe pick. The load was rigged with a single choker hitch on each end of the 4'x 8' stack of formwork approximately 6 inches from each end. The rigger instructed the crane operator to pick the load up a couple feet and then trolley out towards column 5, away from the elevator core. Once the rope was clear of any obstacles, such as steel beams extending from the elevator core, the rigger instructed the crane operator to send the load to the South side, meaning to send it over a vertical wall located along the column line 5.

The only employee who saw the load before it fell was the rigger himself. He indicated that when the load was first picked up it was level and appeared to be rigged correctly. However, as the load was beginning to move towards the south side the load dispersed and fell from the rigging. Through interviews it was determined that the formwork was rigged with 20' nylon straps approximately 6 inches from the end of each stack using a single wrap choker hitch.

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A choker hitch only compresses the load on 3 sides whereas a double wrap choker hitch compresses the load on all 4 sides providing better load control.

New formwork is extremely slippery by design to prevent concrete from sticking to it and loses its non-stick qualities with use; the formwork that struck the victim was new and had never been used before. Without rigging that provided compression from all 4 sides the slippery load was able to move in the single wrap choker hitch displacing the load and ultimately dumping the load below. The rigger did not communicate a safe route and exposed employees to the hoisted load as it traveled directly over them as they worked on the 31st floor.

No citations were issued to this employer; however, citations were issued to Harcon, Inc.

Citation(s) as Originally Issued

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.



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