

CASE STUDY

LOCATION:

Paulding, Ohio

DEPARTMENTS INVOLVED:

Fabrication and Rigging

Manufacturing cement in their Paulding, Ohio location, Lafarge Holcim Ltd. operates two cement kilns that are over 800-feet long with a 12-foot diameter. The inside of the kilns contain over a thousand chains weighing over 90 pounds each. The chains are hung by tombstones which are welded into the steel walls of the kiln. When the kilns are turned on, they slowly rotate, crushing the mined rocks which are fed into the front end of the kiln. The kilns are heated to 1,500 degrees Celsius and continue to rotate until the rocks are crushed into fine dust. That dust is then bagged for concrete production. Over time, the chains on the interior of the kilns become worn and need to be replaced. As a result, Lee Contracting was tasked with removing and replacing nearly 600 chains in a nine-day window – which is no small feat. To remove the heavy chains from the cement kiln, Lee Contracting's teams attached them to a crane and raised the chains through a 26-inch manway on the side of the kiln. Additionally, the team was tasked with removing any worn tombstones and welding in new ones in a precise pattern. To do that, welders burned the weakened pieces off and welded the new ones into the interior of the kiln. The Lee Contracting rigging team then lowered new chains into the kiln, which were reattached to the tombstones.

"We appreciate the Lee team stayed safe, productive and behaved positively while parts of the job were challenging. Lee is a reliable contractor for tough jobs based on this performance, and we will keep them on our list for future projects."

– Production Manager, Lafarge Holcim



Challenges & Results

The team was then presented with a new challenge – how to safely reattach the 90+ pound chains above their head. The solution? The Lee team used pick boards to elevate the workers so they didn't have to lift so far above their head. While inside the kiln, the team ran into a few other challenges along the way:

- ✓ Uneven flooring that caused little to no traction
- ✓ Chains laying across the ground which created a trip hazard
- ✓ Limited Space
- ✓ Dark working conditions (there is no lighting inside the kilns, so the team had to light the space themselves)
- ✓ Space is dusty; workers were confronted with giant dust clouds consuming the kiln



At the end of the project, the client was pleased with the crew's teamwork and for Lee providing a cost-effective and timely solution for this project.