



After the airform is inflated, crews apply concrete to the inside of the PVC form using the shotcrete method. When complete, the monolithic dome is leak proof.



The new reinforced concrete dome replaced a failing steel domed roof.



The new dome with its PVC covering will add decades of life to the existing concrete silo.

Overview

In 2022, repeat customer Lehigh Cement Co. approached Dome Technology with a question about a pesky problem: A concrete silo’s failing metal roof needed to be replaced, but could the existing silo be topped with a concrete dome instead?

Since innovation is one of Dome Technology’s founding values, the team tackled the task head on.

Located in Picton, Ontario, Canada, the existing silo was 55 feet tall with a 196-foot diameter. For years it stored clinker, but the existing domed steel roof had deteriorated to the point that the company feared complete failure. Lehigh was already planning to transition from clinker storage to cement, so it seemed like the right time to upgrade the facility.

Dome Technology’s domes are formed by inflating a dome-shaped airform to act as a concrete form; this airform is inflated to take its proper shape, then concrete is applied using the shotcrete method. Customers benefit from a reinforced concrete dome that’s monolithic and boasts an unlimited lifespan.

The biggest challenge in Picton was designing a way to attach the dome-shaped airform to the top of the 14-inch-thick silo wall without the weight of the fabric tearing away from the fasteners before the airform could be inflated. After that challenge was met, rebar and concrete placement went smoothly, and the silo is now roofed with a 45-foot-tall concrete dome.

Lehigh requested a watertight connection and a roof that would prevent dust escape—two guarantees the metal roof hadn’t delivered. They got both, plus a dome that will withstand anticipated snow loads and then some.

According to sales manager Lane Roberts, this project is an indication that Dome Technology’s team never shies away from a difficult task, especially when it requires thinking outside the box. “The project indicates to our customers that we can solve their problems,” he said.

Read more about this project by clicking [here](#).

