DOME TECHNOLOGY®

Cement Storage

Titan America | Tampa, Florida, USA

To maximize real estate, pump and blower buildings curve around the building.

Greater storage capacity allows Titan America to discharge two vessels back to back with different products.

The dust-collection system is at ground level, which allowed the structure to meet the site's height restriction.

Scope of Work

- ● FEED Study
- ● Value Engineering
- ◒ Geotechnical Analysis
- ● Material-Handling Systems Engineering
- ● Structural Engineering
- ● Mechanical Engineering
- ○ Electrical Engineering
- ◒ Procurement & Subcontract Management
- ● Dome Construction
- ● Tunnels Construction
- ◒ Material-Handling Systems Installation
- ◒ Additional Steel & Concrete Construction

○ None ◒ Some ● All

Storage & Reclaim

- 1 dome: 43.3m (142ft) wide × approx. 43m (141ft) tall
- 67,500 metric tons, cement
- FLS Ful-Floor with two-sided discharge

Overview

Dome Technology completed a 67,500-metric-ton DomeSilo for Titan America in Tampa, Florida. The DomeSilo is 142 feet in diameter and 141 feet tall.

The Tampa site was new to Titan, and the company had multiple priorities with its new acquisition. First, Titan wanted to maximize storage capacity despite the port's height restriction. In response, Dome Technology fitted the DomeSilo with a low-profile domed roof that might not look like the typical dome but delivers robust strength. This allowed the structure's vertical walls to reach as high as possible and provide the greatest possible cement storage.

"Our challenge before the dome was a full vessel of one product maxed out our capacity," said Tampa plant manager Eric Poitras. "The dome now allows us the benefit of discharging two vessels back-to-back with different products without maxing out our storage."

Second, the DomeSilo needed a robust dust-collection system. But it wasn't possible to select a typical apex dust collector and still meet the capacity goals and height restriction. So EDG, Inc. proposed a novel design: venting attached to the side of the dome and down to a dust collector at ground level. Not only does this eliminate the need for a large apex platform, but it also makes servicing the dust collector easier.

Another priority was maximizing the portside property. The site's soil conditions required a deep foundation to minimize settlement, and an auger-cast piling system with pile cap provided structural security from the ground up. Because of limited space, Dome Technology designed buildings for the Fuller-Kinyon® (FK) Screw Pump and blower that curve around the DomeSilo exterior rather than standing separate.

Double-sided discharge points at the base of the DomeSilo combined with an FLSmidth Cement Ful-Floor® pneumatic reclaim system ensures reclaiming isn't interrupted if one transport system is out of order. FK pumps convey product from the DomeSilo to truck loadout silos.

With construction complete, Titan American expects the DomeSilo will improve distribution and product flexibility into the future. "The dome allows Titan to expand its customer base into West Central Florida by increasing the amount of cement we have available in that market. It also allows Titan the flexibility to bring multiple products into the marketplace," Poitras said. Read more about this project by clicking here.