SUCCESS STORY

DAYTON SUPERIOR

MetalStrip™ Provides High-Strength Connection on High-Profile Job

Artist's rendering of completed World Trade Center in New York City courtesy of Silverstein Properties.

The concrete contractor chose D55 MetalStrip because they needed an engineered product solution for the core wall-to-slab connection that had a minimal on-site storage footprint, provided an easy installation to avoid construction delays and guarantee high-strength results.

SUMMARY

In May, 2012 the 1 World Trade Center tower established itself as the tallest building in New York City, surpassing the city's iconic Empire State Building. As the tower continues to rise in the New York City skyline, it will eventually take its place as the 3rd tallest building in the world, with its spire reaching a symbolic 1,776 feet into the air (a reference to the year of the USA's independence).

The building began the climb from a 185' concrete base, located on the northwest corner of the World Trade Center site, where in November 2006 400 cubic yards of concrete were poured on the building's foundation. In May 2008, the concrete core rose to street level and has continued to ascend at a rate of approximately one floor per week. When construction is complete, more than 200,000 cubic yards of concrete (more than three times the concrete used for the Empire State Building) will have been poured at 1 WTC and concrete contractor Renzo Collavino of the Collavino Group is responsible for all of it.

Among the many preparations for such a massive undertaking, The Collavino Group sought a product solution that would standardize the above-grade core wall to slab connections in order to meet the high-profile project's aggressive construction schedule. Working closely with Dayton Superior's National Sales Manager Don Van Gerve and Barker Steel, The Collavino Group selected Dayton Superior's D55 MetalStrip for the task. In addition, the Collavino Group utilized a number of Dayton Superior products including bar supports, rock anchors, coil rod, nuts, plates, grout and form release, making Dayton Superior a significant provider of product solutions for the 1WTC structure.

CUSTOMER

- Developer: Silverstein Properties
- Concrete Contractor: Collavino Group
- Distributor: Barker Steel

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PROJECT

- 1 World Trade Center
- New York City, New York

CHALLENGE

As with the entire World Trade Center site, construction of 1 WTC was set for an aggressive pace with significant inter-dependency among the contractors handling various facets of construction. In addition, despite the large scope of project, the construction site logistics did not offer much area to store product. The Collavino Group knew they needed an engineered product solution for the core wall to slab connection that would have a minimal on-site storage footprint, provide an easy installation to avoid construction delays and guarantee high-strength results.

SOLUTION

The Collavino Group found the solution with Dayton Superior's D55 MetalStrip. A two-piece dowel bar keyway strip that is prepackaged with ASTM A615 grade 60 bendable rebar shaped to job specifications and engineered to stay in place. The D55 MetalStrip provided the Collavino Group a standardized product solution providing a 15% faster installation rate than other core wall to slab connection methods, ultimately resulting in a time savings and a cost savings of approximately $5 million. In addition, the D55 MetalStrip provided the high-strength, high-quality connections the project demanded while also reducing the Collavino Group's on-site product storage footprint.

"When we build with concrete, we use Dayton Superior product solutions and application engineering to optimize our efficiencies," said Renzo Collavino, president, Collavino Group and concrete contractor for 1WTC.

RESULTS

- Cost savings of approximately $5 million for the contractor
- 15% faster installation
- Contractor able to standardize the way they achieved the core wall to slab connection
- Dayton Superior's ability to offer numerous product solutions made them a valuable single-source provider during 1 WTC concrete construction
- Reduced contractor's on-site product storage footprint

RESOURCES

Learn more about Dayton Superior's D55 MetalStrip online at www.Daytonsuperior.com

Photo courtesy of The Port Authority of New York and New Jersey.

Additional product information is available online at www.daytonsuperior.com. Contact your Dayton Superior representative at 888-977-9600, or send an email to info@daytonsuperior.com if you would like to discuss how these or other innovative systems can make your construction projects more productive.