

# CENTRAL ODOR CONTROL STRUCTURE

Wastewater treatment facilities that are less obtrusive and more environmentally friendly have come a long way in recent years, thanks to the hard work of engineers around the world. Today, science and technology, along with the work of researchers and product developers at companies like Tnemec, make it a priority to develop byproducts that are less meddlesome to the surrounding landscape and less harmful to the environment as a whole.

In 2005, the City of Nashville promised residents living near the Central Odor Control Structure that they would experience "noticeably less odor" with the upgrades planned for the facility. The Tnemec coating system selected to protect the plant's concrete substrates assisted in the fulfillment of that promise, according to Tnemec coating consultant Tom Williams.

"The overall process was designed in Canada to take more out of the solids before they reach the air," said Williams. "This project was modifying the structure already in place to use the new method."

Following abrasive blasting in accordance with SSPC-SP13/NACE No. 6 ICRI-CSP5 Surface Preparation of Concrete, Series 218 MortarClad, a high-performance, aggregate-reinforced cementitious epoxy surfacing material, and Series 219 MortarCast, an aggregate-reinforced, cementitious epoxy mortar, were used to patch and resurface the existing rough concrete substrate. A prime coat of Series 201 Epoxoprime, a high-solids, moisture-tolerant epoxy, was then applied, followed by a coat of Series 434 Perma-Shield H<sub>2</sub>S, a 100-percent solids epoxy mortar, trowel-applied at 1/8-inch minimum thickness.

A glaze coat of Series 435 Perma-Glaze, an abrasion-resistant lining designed for immersion and fume environments, was spray-applied as the systems topcoat. Both Series 434 and Series 435 were selected for their extremely low permeability to hydrogen sulfide (H<sub>2</sub>S) gas and high resistance to sulfuric acid (H<sub>2</sub>SO<sub>4</sub>).

"The coating system not only protected the concrete surfaces from the effects of biogenic sulfide corrosion, but it also enhanced the new odor control system," noted Williams. "The contractors did a fantastic job and the system continues to perform very well."

## FEATURED PRODUCTS

Series 201 Epoxoprime      Series 435 Perma-Glaze  
Series 218 MortarClad  
Series 219 MortarCast  
Series 434 Perma-Shield H<sub>2</sub>S



## PROJECT INFORMATION

### Project Location

Nashville, Tennessee

### Project Completion Date

April 2006

### Owner

Metro Water & Sewer - Nashville, Tennessee

### Engineer

Jordan Jones & Goulding, Inc. - Nashville, Tennessee

### Applicator

Commerical Painting - Nashville, Tennessee

In the top photo, Tnemec's Series 434 Perma-Shield H<sub>2</sub>S is spray-transferred (foreground) and back-troweled (background) to the 1/8" minimum thickness at the Central Odor Control Structure in Nashville, TN.

