# BAY BRIDGE EAST SPAN LIGHTING

The San Francisco-Oakland Bay Bridge provides a shining example of high-tech lighting technology featuring custom-designed fixtures, standards and a hybrid polyurethane coating system from Tnemec that offers a hard, durable finish and long-term aesthetic performance. "Valmont Industries, which fabricated the light poles, needed a coating system that could be shop-applied," recalled Kevin Greteman of SGA Coating Consultants. "And because the coating system was outside the project's original specification, it required extensive testing by the state of California."

Tnemec's coating system consisted of an epoxy basecoat and a topcoat of Series 750 UVX, a polyaspartic modified polyurethane, which offers excellent application properties, superior durability and outstanding color and gloss retention for architectural and industrial exposures.

The State of California Department of Transportation, known as Caltrans, had previously used Series 750 UVX on nine emergency evacuation tunnels and three electrical substation rooms inside the Devil's Slide Tunnels in San Mateo County, California. That project required a coating with low volatile organic compound (VOC) content that offered graffiti and abrasion resistance.

"Since the light poles represent a totally different exposure, additional testing of Series 750 was required to determine its resistance to ultraviolet (UV) light degradation and weathering," according to coating consultant Glen Amos of Amos and Associates in northern California. "In 2012, the Caltrans Chemistry Lab in Sacramento determined Series 750 to be 'Satisfactory for Use' as a topcoat on the lighting standards."

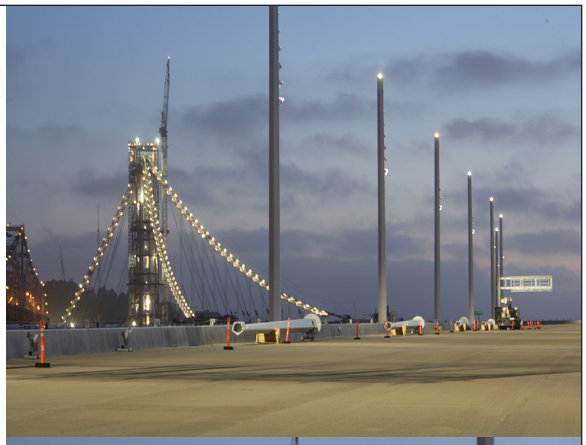
The Bay Bridge lighting system consists of 273 pentagonal standards, or poles, ranging from 23 to 65 feet in height and weighing from 2,500 to 7,500 pounds each. The massive standards support a total of 1,521 specially designed and fabricated fixtures. Each fixture houses 25 to 50 light-emitting diodes (LEDs) that project light in the same direction traffic is moving for safer nighttime driving.

In order to create the smoothest surface possible for coating, the fabricator elected to grind the exterior steel on each pole prior to preparing the surface in accordance with SSPC-SP7/NACE No. 4 Brush-Off Blast Cleaning. The basecoat of Series 66 Hi-Build Epoxoline, a polyamine epoxy, and the single finish coat of Series 750 in a custom color called Bay Bridge White, were both shop-applied. Approximately 1,000 gallons of each coating were required for the project.

The $18 million Bay Bridge lighting system is designed to use half the energy and last five to seven times longer than the current sodium vapor lights, which typically have a two-year lifespan. This means lower energy costs and an extended maintenance cycle for replacing bulbs.

## FEATURED PRODUCTS

Series 66 Hi-Build Epoxoline
Series 750 UVX



## PROJECT INFORMATION

**Project Location**
San Francisco/Oakland, California

**Project Completion Date**
September 2013

**Owner**
State of California, Department of Transportation (Caltrans)

**Lighting Contractor**
Musco Sports Lighting - Oskaloosa, Iowa

**Light Pole Designer**
Moffatt & Nichol - Oakland, California

**Light Pole Fabricator**
Valmont Industries - Omaha, Nebraska

The San Francisco-Oakland Bay Bridge provides an example of high-tech lighting technology featuring 273 custom-designed lighting fixtures, standards and a hybrid polyurethane coating system from Tnemec for long-term protection.

TNEMEC®

Tnemec Company, Inc. 6800 Corporate Drive Kansas City, Missouri, USA 64120-1372 +1 816-483-3400 tnemec.com