

Padma Multipurpose Bridge

PPG systems improve application time by 70% to meet strict deadline



Case study

Owner

Bangladesh Bridge Authority

Engineering

AECOM Group

Yard

China Railway Shanhaiguan Bridge Group (CRSBG)

Location

Bangladesh

Solution

Interior

PPG SIGMACOVER™ 850 epoxy coating

Exterior

PPG SIGMAZINC™ 109HS system primer
PPG SIGMACOVER 456 epoxy coating
PPG SIGMADUR™ 550 polyurethane finish

Benefits

Our high-build, abrasion-resistant epoxy coating is easy to apply and reached the specified dry film thickness (DFT) in one coat.

Result

Our systems enabled us to save project time in order to meet the customer's tight deadline.

The Customer

Bangladesh Bridge Authority is an autonomous body responsible for the building and maintenance of bridges, tunnels, flyovers and over-passes in Bangladesh.

AECOM led the design team for the structure of the 6.15-kilometer-long, two-level steel truss bridge.

China Railway Shanhaiguan Bridge Group (CRSBG) is one of the biggest steel structure fabricators in China and has fabricated for many world-famous bridge projects. Its parent company, China Railway Engineering, is a Fortune 500 company.

The Challenge

The project faced a very tight timeline to meet China's "One-Belt, One-Road" initiative, for which the Padma Bridge will become part of China's Trans-Asian Railway network designed to increase trade flow.

The original coating specification called for a three-coat system for the steel girdle interior, which we replaced by one coat of our PPG SIGMACOVER 850 coating system. The steel girdle measured 1 meter by 1 meter with a complex steel structure, which made application even more difficult if the original coating specification was to be followed.



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The Solution

Our proposal incorporated systems for the girde interior and exterior.

The system for the steel girde interior

This comprised our PPG SIGMACOVER 850 coating system: a high-solids, high-build, heavy-duty epoxy that can reach 250 to 1,000 microns per coat, which saved project time in order to achieve the ideal film build. The coating has been developed to have 90% volume solids while still being applicator friendly and very easy to use.

The system for the steel girde exterior

Our PPG SIGMADUR 550 coating system offers long-term corrosion resistance while also providing exceptional color and gloss retention.

The PPG SIGMACOVER 456 coating provides a very smooth finish, which helped to ensure a smooth finish with the topcoat. Additionally, the intermediate coat has an unlimited overcoating interval. After fabrication, the fabricator only needed to clean the welding areas, repair and touch-up any damaged parts without any further secondary preparation.

The painting procedure was completed in 2016. The bridge is now being constructed and will be ready to open in 2018.

The Benefits

Our PPG SIGMACOVER 850 epoxy coating was able to reduce the coating system complexity from three coats to one coat, which accelerated the painting process by 70%. This significant saving was achieved as the coating is applicator friendly and very easy to apply despite being 90% high-volume solids.

The one-coat system also alleviated painting problems in such complex steel girde structures that have narrow spaces. The great benefit is that the interior is now protected by a heavy-duty, high-film build epoxy coating.

The PPG SIGMADUR 550 coating system will provide solid corrosion protection, and color and gloss retention against various corrosive forces, such as UV rays, humidity, and pollutants, over extended period of time.



Both interior and exterior coating systems provided maximum efficiency for project fabrication and will ensure long-term protection for these intricate assets.

The Result

Our systems enabled us to save project time in order to meet the customer's tight deadline. The customer benefited from increased efficiency during application despite the structure's complexity.

As a result, our PPG coating systems now provide proven, long-term protection to this landmark structure, which is one of the longest river crossings in the world. Importantly, the customer can be confident that the system ensures both anticorrosive- and fire protection to the highest standards that will help to safeguard life in such a highly popular location.

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