Wembley Stadium, London

The STEELGUARD™ system offers long-term fire and anticorrosive protection with superb aesthetics

Case study

The Customer
Wembley National Stadium Limited

The Location
London, United Kingdom

The Challenge
To provide a long-lasting fire and anticorrosive protective coating system able to coat every shape and size of steel that meets British fire protection standards with an excellent aesthetic finish

The Solution
Application of STEELGUARD FM560 solvent-based intumescent coating for fire protection. SIGMACOVER™ 435, SIGMACOVER 456 HS and SIGMACOVER 520 coatings for corrosion protection to the internal and external steelwork

The Benefits
The STEELGUARD FM560 coating provides optimal fire protection with a 60-minute fire rating. The complete system delivers outstanding anticorrosive protection and an attractive surface finish for the complicated steel structures

The Result
Excellent visual appearance with a hard-wearing anticorrosive and fire protective coating system

The Customer

Opened in 2007, Wembley Stadium was built on the site of the previous 1923 incarnation. The earlier stadium, originally called the Empire Stadium, was often referred to as 'The Twin Towers' and was one of the world's most famous football stadiums until its demolition in 2003.

The 90,000-capacity venue (105,000 combined seating and standing) is the second largest stadium in Europe, behind only the Camp Nou in Barcelona, and serves as England's national stadium. It is the sole home venue of the England national football team, and hosts the latter stages of top-level domestic club cup competitions.

Designed by Foster and Partners and HOK Sport (now Populous), it includes a partially retractable roof. A signature feature of the stadium, following on from the old Wembley's distinctive Twin Towers, is the 134-meter-high (440 ft) Wembley Arch. With a span of 317 meters (1,040 ft), this steel arch is the longest single-span roof structure in the world and, uniquely for a stadium, requires beacons for low-flying aircraft.

The Challenge

The reconstruction of the Wembley National Stadium took 5 years from 2002 to 2007.

On such a prestigious and iconic structure, the challenge was to provide an extremely durable anticorrosive and fire protective coating system that would meet all British fire protection standards, while producing an attractive finish to complement the structure's visual appeal.

The low-thickness system also had to be able to coat every shape and size of steel component used on the intricate steel arch.

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The Solution

To answer the complex brief, PPG proposed and supplied the complete anticorrosive and fire protective coating system for all externally and internally exposed steelwork of the stadium.

A combination of SIGMAFAST™ 302, SIGMACOVER 435, SIGMACOVER 456 HS and SIGMADUR™ 520 coatings were applied to the steel structures in order to provide a high level of anticorrosive protection.

For the required fire protection, a full three-coat fire system was used to meet the various environmental conditions around the stadium. The STEELGUARD 3146 primer and STEELGUARD FM560 solvent-based intumescent coating were chosen because they provide the required 60-minute fire rating. The topcoats used were STEELGUARD 2458 & AMERCOAT® 450SG to guarantee optimal aesthetics. The three-coat system was applied at a dedicated offsite contractor's premises and delivered to site ready to erect.

The Benefits

PPG's passive fire protection offer includes a complete range of intumescent coating systems for various grades of fire protection, climatic exposure conditions and application techniques.

The STEELGUARD range provides a unique set of benefits:

- High levels of corrosion protection against atmospheric conditions with suitable topcoat
- Smooth surface – excellent aesthetics
- Topcoats available in many colors to match building designs
- Offsite versions available for in-shop application
- Waterborne coatings available for onsite application
- Tested to various standards and certified to local requirements
- Independently approved

PPG not only offers an economical and versatile solution for passive fire protection, but also aims to provide comprehensive engineering support. PPG's engineers have the capability to help customers from the early stages of development, guiding them through the specification process and providing continuing support right through to project completion and beyond.

The Results

The new Wembley National Stadium was handedover in 2007, in time to host the 2007 FA Cup Final. PPG was successful in providing a solution that still protects the exposed steelwork for the arch, roof structure and internal steelwork for the bowl structure, and will do so for many years to come.

The STEELGUARD FM560 intumescent coating proved to be the best solution for the reconstruction of such an important landmark of sport infrastructure. Its fire and corrosion protection characteristics continue to meet British standards while retaining the aesthetic appearance of the stadium.

Experience, innovation and integrity – that is what makes PPG the ideal coatings partner.

Visit **ppgpmc.com** or contact:
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