

Beijing Daxing International Airport Terminal Building

Effective fire protection with enhanced color- and gloss retention and corrosion protection

Case study

Owner

Beijing Daxing International Airport

General Contractors

Beijing Urban Construction Group
Beijing Construction Engineering Group

Contractor

RIC Red-Hensel (Beijing) International Construction

Location

Beijing, China

Challenge

To meet the tight project deadline and high-quality application work, and coating performance in the exposed application environment during winter

Solution

PPG provided the complete range of interior and exterior coatings, and cellulosic passive fire protection (PPF) solutions

Benefits

The PPG STEELGUARD™ system provides steel structures with excellent protection against corrosion and insulation from cellulosic fire. During the construction phase, the PPG *Steelguard* system can be coated in an exposed outdoor environment providing applicator ease and convenience.

The PPG PSX® and PPG SIGMADUR™ coatings are high-performance topcoats extend the painted surface's protection up to 15 to 20 years compared to five to eight years using traditional polyurethane topcoats.

Result

PPG offers the complete coating solution to provide extended color- and gloss retention that outperforms typical polyurethane. The intumescent fire-proofing coating will also help to strengthen the buildings and increase safety and reliability

The Customer

Beijing New Airport Headquarters formed a joint design team comprising ADP Ingenierie (ADPI) and Zaha Hadid Architects (ZHA) to develop a concept design. Design studio Lead 8 was selected as the lead designer for the new commercial terminal in August 2018, Arup provided fire engineering services for the airport, and Burohappold Engineering, an engineering consultancy, was part of the consortium that designed the airport.

The Challenge

The mega-airport terminal is the largest in the world at a size of 700,000 square meters. The project needed to adhere to a complex and tight schedule. Specifically, application to the roof in an exposed environment during winter added additional challenges to the tight schedule.





The Solution

PPG's total product and service capability provided the anticorrosion- and fire protection solutions for this project.

In particular, the PPG *Steelguard* coating can be applied in an exposed outdoor environment during winter to provide ease and convenience to the contractor for effective quality and schedule control.

Products used for this project:

- PPG *Steelguard* coating was applied to the terminal's main steel structure, including the main hall, concourses and boarding gates for fire protection
- PPG *PSX* topcoat was used for the steel grid structure of the airport roof for exterior protection
- PPG *Sigmatdur* fluorocarbon finish was applied to the terminal's main steel structure for all-around weather resistance
- PPG *DURANAR*® fluoropolymer coating protects the roof's golden exterior for exceptional durability

The Benefits

PPG solutions provide safety, aesthetics and extended corrosion protection to the terminal's main steel structure (the main hall, concourses and boarding gates), over-span steel grid and the roof.

Our intumescent fire protection coatings offer a smooth aesthetic surface and deliver up to 150 minutes of protection from cellulosic fires. Significantly beneficial during construction, the PPG *Steelguard* coating can be applied in outdoor exposure conditions for up to 12 months without a topcoat while still keeping its quality and performance.

The steel grid structure of the airport roof and the main steel structures were coated extensively with PPG *PSX* and PPG *Sigmatdur* topcoats. Both provide extended color- and gloss retention (up to 15 to 20 years) that outperform typical polyurethane (five to eight years).

PPG *Duranar* fluoropolymer coating was chosen to protect the roof's golden exterior. It offers durable color retention and exceptional performance against weathering in all environments. The product also meets AAMA 2605 performance specifications.



The Result

Our established capability to apply the most effective coatings and manage large, multifaceted projects, such as this prestigious airport terminal building, enabled us to deliver the optimal service and solution.

We combined coating performance, project management and adherence to health and safety concerns to meet all the customer's precise specifications and environmental requirements.

Safety was increased through effective fire protection; resources were conserved by extending product life and reducing the frequency of repairs; and VOC emissions were reduced by using the PPG *PSX* topcoat system, when compared with traditional polyurethane topcoats.

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