

# Atocha Railway Station

Aesthetics and durable fire protection with the STEELGUARD™ system

## Case study



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### The Customer

ADIF (Administrador de Infraestructuras Ferroviarias)

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### The Location

Madrid, Spain

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### The Challenge

To provide long-lasting and reliable fire protection, corrosion protection and an attractive decorative surface for the enlargement of the railway station while the building was in use

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### The Solution

Application of STEELGUARD FM 585 water-based intumescent coating and STEELGUARD 2458 topcoat

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### The Benefits

Excellent protection and appearance of the steel structures. Overcoating with the STEELGUARD 2458 topcoat can be done after only 30 minutes, enabling efficient production

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### The Result

The state-of-the-art railway station now has an enhanced protective coating system that also complements the aesthetics of the structure

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### The Customer

Atocha Station in Madrid is the main nucleus of Spain's high-speed rail network. Spain is ranked as the second country in the world and the first in Europe for the number of high-speed kilometers of rail track in service (currently 2,230 km).

The original Atocha train station building was mostly destroyed by fire in the early 1890s. Alberto de Palacio Elissagne was the architect responsible for the old building's new design, which incorporated a style that was predominantly of wrought iron. Gustave Eiffel also collaborated on the project. The most characteristic feature of the station is the combination of the modern design of its recent enlargement combined with the nineteenth-century-style façade.

The station has been partly transformed into a natural green centerpiece to make the traveler's wait more comfortable. The newly refurbished area covers 4,000 m<sup>2</sup> and is populated by more than 500 species of plants.

### The Challenge

The most recent reconstruction allowed the station to become the central hub for train passengers in Spain with the total surpassing 35 million per year, which is 2.5 times more than its previous capacity.

The construction requirements and building legislation for the station enlargement required a thin-film passive fire protection system that would meet all construction work conditions, with a limited effect on passengers in this public space. It would also have to meet all the fire protection, corrosion protection and decorative appearance specifications to give the structure a sleek, modern look while meeting today's construction requirements.





### The Solution

The coatings contractor chose PPG option using the STEELGUARD FM 585 water-based intumescent coating for this challenging project. Its ease of application, the absence of solvents in the atmosphere while work was ongoing (so there was no disturbance to the adjoining areas and no effect on passengers) and its competitive thickness were decisive.

In order to protect the steelwork to the required 30-minute fire rating, a combination of the STEELGUARD FM 585 coating and STEELGUARD 2458 topcoat was applied. In addition, 2,000 m<sup>2</sup> of galvanized steel structures in the main hall of the station were protected with the SIGMACOVER™ 280 primer and SIGMADUR™ 1800 high-solids finish as the optimal anticorrosive and decorative coating.

### The Benefits

The STEELGUARD range is a complete set of intumescent coating systems for various grades of fire protection, climatic exposure conditions and application techniques.

The great benefit of intumescent coatings work is that they expand at high temperatures, from a very thin, lightweight coating into a thick, foam-like layer that insulates the steel from fire. It is this insulation that maintains the steel's stability and helps to deliver the additional rescue time that can prove decisive in terms of saving lives and property. Moreover, STEELGUARD intumescent coatings meet international standards in fire protection, with each product undergoing a rigorous, exhaustive testing process.

The STEELGUARD intumescent range also includes coatings specifically designed for use on site. These waterborne coatings comply with the most stringent environmental regulations, enabling application to take place in working areas – even while people are using the building.

### The Result

The project ran smoothly with no disruption to the station's train schedule and passengers. The final outcome was an aesthetically pleasing finish that complemented the attractive style of the station. Crucially, the long-lasting and reliable fire protection provided by the PPG system will greatly improve the safety of the station and the public in the event of fire.

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



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Asia Pacific ☎ +86-21-6025-2688 ✉ [ppgpmc.ap@ppg.com](mailto:ppgpmc.ap@ppg.com) | Europe, Middle East and Africa ☎ +32-3-3606-311 ✉ [customers@ppg.com](mailto:customers@ppg.com)  
Latin America ☎ +57-1-8764242 ext. 201 ✉ [ppgpmcandean-ca@ppg.com](mailto:ppgpmcandean-ca@ppg.com) | North America (US & Canada) ☎ +1-888-9PPGPMC ✉ [PMCMarketing@ppg.com](mailto:PMCMarketing@ppg.com)



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