



COMBINING FIRE PROTECTION AND ANTI-CORROSION SYSTEMS FOR LONDONS EUROSTAR TERMINAL

Serving over 6.5 million passengers each year, the undercroft area at St. Pancras International Station includes 680 cast iron columns, cross members and buckle plates, all of which require 60 minutes fire protection. These cast iron columns support the rail deck and platforms for the Eurostar trains, and house a number of shop units and cafés.

With St. Pancras replacing Waterloo Station as the London end of the Eurostar, the decision was taken to refurbish the Main Train Shed. The paint had to protect and decorate the 140 year old structure, matching the English Heritage's original colours.

THE NEW 'TRAIN SHED' WAS CONSTRUCTED TO REPLACE THE EXISTING ONE WHILST THE MAINTENANCE WORK WAS CARRIED OUT. NOW COMPLETE, THE TRAIN SHED WILL BECOME THE TERMINAL SET TO SERVE TRAINS FROM THE NORTH. THIS PROJECT REQUIRED A COATING SPECIFICATION TO GIVE AT LEAST 25 YEARS ANTI-CORROSION PROTECTION, 60 MINUTES PASSIVE FIRE PROTECTION TO A PREFERABLE FINISH.

CLIENT:

London and Continental Railways

MAIN CONTRACTOR:

CORBER (Costain, Laing O'Rourke, Bachy and Emtor Rail)

CONSULTANT ENGINEER:

ARUP

FROM SPEC TO PROTECT

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WILLIAMS®**

ST. PANCRAS INTERNATIONAL STATION, LONDON



SOLUTION

The system selected for the undercroft comprised: Macropoxy™ M902 applied at 100 um for anti-corrosive properties, followed by FIRETEX® FX1000 or FX7000 to give 60 minutes fire protection, and Acrolon™ C237 which has excellent colour and gloss retention properties. All the iron was prepared with a wet abrasive blast-clean.

The paint system for the main train shed was selected due to its Network Rail certification and approval. Ultra high pressure water blasting was used to prepare the surface, the coating system consisted of Macropoxy M902 followed by Macropoxy M905 (both at 100 um) and then covered with the Acrolon C237 topcoat at 50 um.

The steel in the new train shed extension was blast cleaned to Sa2½ and then a four coat system was used. The system chosen is not a standard specification but was selected after discussions with Rail Link Engineering and Watson's Steel for a practical and cost effective system whilst maintaining performance levels for the project. The zinc rich primer Epigrip™ J984* was applied at 50 um, followed by the Macropoxy MIO C401 at 125 um. The new train shed was finished with two coats of Acrolon C237 at 50 um.

* Now replaced by Zinc Clad™ IV E (80%).

SUBSTRATE

Steel, cast and wrought iron.

REQUIREMENTS

To provide anti-corrosion protection and decoration as well as 60 minutes fire protection to the Undercroft area.

SPECIFICATIONS

UNDERCROFT: Wet abrasive blast-clean followed by Macropoxy M902 at 100 um DFT (Dry Film Thickness), FIRETEX FX1000 or FX7000 to required DFT and Acrolon C237 at 50 um DFT.

MAIN TRAIN SHED: UHP Water blast to remove all unsound paint, Macropoxy M902 and Macropoxy M905 at 100 um DFT and Acrolon C237 at 50 um DFT.

NEW TRAIN SHED EXTENSION: Blast clean to Sa2½ (BS EN ISO 8501-1), Epigrip J984* at 50 um DFT, Macropoxy C401 at 125 um DFT, Macropoxy C237 in two coats.

AREA COATED

Total area approximately 150,000 m².

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams Protective & Marine delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe. Our broad portfolio of high-performance coatings and systems that excel at combating corrosion helps customers achieve smarter, time-tested asset protection. We serve a wide array of markets across our rapidly growing international distribution footprint, including oil and gas, water and wastewater, bridge and highway, steel fabrication, flooring, food and beverage, rail and power, marine and passive fire protection.

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