



HIGH PERFORMANCE FIRETEX SYSTEM PROTECTING THE ICONIC CHEESEGRATER

The leaning modern glass and steel structure known as the 'Cheesegrater' for its distinctive shape has made the Leadenhall Building a new, iconic London landmark. The building, opposite Lloyd's of London, contains 56,670 m² of office space, incorporates 18,000 tonnes of steel, with components made and assembled far and wide developed by British Land and Oxford Properties.

In its concept, the structure was to have no central concrete core, with an external steel frame as well as a central steel core providing lateral stability and featuring 26 passenger lifts at its northern core.

USING AN INTERNAL STEEL CORE RATHER THAN CONCRETE PRESENTED NUMEROUS CHALLENGES THROUGH THE CONSTRUCTION PHASE FROM 2011 TO 2014 FOR ARCHITECTS, ENGINEERS AND FOR SHERWIN-WILLIAMS AS SUPPLIER OF COATINGS FOR FIRE AND CORROSION PROTECTION. THE DEVELOPMENT'S TAPERING SHAPE, WHICH WHEN VIEWED FROM THE WEST WILL APPEAR TO 'LEAN AWAY' FROM ST PAUL'S CATHEDRAL, DELIVERS VARIED SIZES OF FLOOR PLATES, ALL OFFERING SPECTACULAR VIEWS OVER LONDON.

CLIENT:

British Land/Oxford Properties

MAIN CONTRACTOR:

Severfield Group

FROM SPEC TO PROTECT

protectiveemea.sherwin-williams.com

**SHERWIN
WILLIAMS®**

THE LEADENHALL BUILDING, LONDON



SOLUTION

Because of the nature of the development as a major London landmark, the Sherwin-Williams Protective & Marine Coatings division's Fire Engineering & Technical Services Teams, working with structural steel specialist Severfield, had to ensure the highest standard of design and application from both a finish and aesthetic perspective as well as a protection point of view. Many of the elements - including beams, columns and large transitional nodes within the mega-frame - were a complex bespoke design and required specific and complex fire protection analysis by the fire engineering team at Sherwin-Williams as well as coating application methodology in Severfield's own shop facilities.

Further challenges were presented by the floor plate construction methods from 'slim floor' construction in the basements to conventional down-stand beams in the upper floors. Sherwin-Williams used Building Information Modeling (BIM) on the floor plate fire design to seamlessly integrate the coatings into the Severfield 3D model.

There was a need for different intumescent technologies due to the large variance in the building's environmental conditions. The mega-frame exoskeleton has large temperature and humidity fluctuations and this led to the need for thick film epoxy fire proofing. The steel remains wholly to view due to the glazed exterior and so the finish was architecturally high, another difficult achievement using a high thickness epoxy intumescent.

For fire protection, the whole structure was sprayed prior to site assembly using FIRETEX® C69 blast primer, intumescent build coats of FIRETEX FX2002 and FIRETEX M95 epoxy intumescent with a top coat of Acrolon™ C237 with a dry film thickness (DFT) of between 1-13 mm, depending on the thickness of the steel, giving 90 minutes of fire protection. These coatings ensured that the unusual design elements had the optimum protection but would also fit with the overall vision as an important visual landmark in the City of London.



SUBSTRATE

Steelwork.

REQUIREMENTS

To guarantee 90 minutes fire protection.

AREA COATED

56,670 m²

FEATURED PRODUCTS

• FIRETEX C69 • FIRETEX FX2002 • FIRETEX M95 • Acrolon C237

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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