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Durasteel a winner for White City

Promat DURASTEEL®, the high performance fit-and-forget fire barrier, is playing a critical role at Westfield London in White City, West London.

The tallest ever DURASTEEL® firewall in the UK is providing protection for power plants within the refurbished Grade II-listed west DIMCO building, a central component of the regeneration. DURASTEEL® is also being installed as part of a major upgrade of London Underground facilities.

“Work on the Westfield London development at White City is one of our most exciting jobs to date,” says Stuart de Voil, Marketing Manager for Promat UK Limited. “It’s testimony to the quality of the product and our technical expertise that DURASTEEL® has risen to the challenge.”

Promat DURASTEEL® is a complete passive fire containment system, tested under the most extreme conditions. It’s a one-stop solution specifiers know they can rely on. Previous clients include the Ministry of Defence, the London Underground’s Jubilee Line Extension and Heathrow Airport’s Terminal 5.

Westfield London is a retail, leisure and lifestyle development by the world’s largest retail property group, Australian-owned Westfield. The development is a partnership between Westfield and London Underground, whose land has been leased by Westfield. Both are playing a vital role in the regeneration of the area. Westfield has invested £170m into the transport infrastructure for the development and the project reinforces London Underground’s ambition to lead the way to a first class transport system for a sustainable 21st century city.

The development is a 46-acre site between Shepherd’s Bush and White City tube stations, until recently an industrial wasteland. When it is completed in 2008, the £1.6 billion development will contain the largest shopping centre in Europe along with leisure facilities, a 14 screen cinema, a spa and gymnasium, bars, restaurants, new transport links and affordable housing. Westfield London aims to become the capital’s premier retail, leisure and lifestyle destination.

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To encourage visitors to arrive by public transport, links to the development are being dramatically upgraded. This includes one new bus station, a remodelled London Underground station at Shepherd's Bush (Central Line), a new station on the Hammersmith and City line, and a new Network rail station.

So why Promat DURASTEEL®? "It's a very versatile material, offering a high level of fire protection," says project architect Lisa Pemberton, of Ian Ritchie Architects who have designed the public transport infrastructure for the development. "The fire barrier comes as a complete system, so you don't need to specify an additional fire stopping material for services penetrations. The contemporary aesthetic of the DURASTEEL® complements the industrial character of the DIMCO building."

Fire compartmentation using barriers such as Promat DURASTEEL® is currently a vital component of building design, thanks to growing demands from insurers and tough Building Regulations.

Literally built into the fabric of a building, DURASTEEL® creates a physical barrier to contain heat and the spread of smoke and fire. This helps control the course of a fire and the damage it can do, giving occupants time to get out and firefighters the chance to save the building.

Promat DURASTEEL® is a composite sheet made with a core of fibre cement sandwiched between mechanically bonded galvanised steel facings. It is easy to install and tough and durable enough to be installed at an early stage, before the building envelope is watertight. It can withstand prolonged exposure to fire – up to six hours – and, while hot, will withstand spray from fire-fighter hoses or sprinkler action. Yet this exceptional fire performance is combined with lightness and durability.

Promat DURASTEEL® is typically specified in distribution, storage and warehousing, military buildings, petro-chemical plants, airports, underground train stations, road and rail tunnels, utilities' installations and fire resistant ducting applications in major commercial and public assembly buildings. It has been tested to comply with all relevant parts of BS 476. It also complies with the growing number of tests demanded by big insurers, such as Lloyds of London.

On Westfield London, Promat DURASTEEL® came through with flying colours. The Grade II-listed DIMCO building was built more than 100 years ago, originally to house Europe's first electricity generating facility. Its refurbishment has been an ambitious and complex task involving extensive temporary works for the complete

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roof and roof structure replacement. A DURASTEEL® barrier provides 120 minutes fire compartmentation protection for the electricity sub-station within the west DIMCO structure, which supplies power to the new development. At 25m high, the barrier installed is the tallest to date, and one of the most complex in terms of detailing and installation. Promat's expertise was key.

"We worked closely on all the details with Promat and the contractors, achieving the solutions together," says architect Lisa Pemberton. "There were three main areas for detailing: the interface of the DURASTEEL® wall with the existing listed walls (including allowance for movement); the interface between the wall and a new louvered roof; and the interface with the screed floor."

London based Towns-Wadey is Westfield's building contractor for the DIMCO project. Design Manager James Wraight said: "The DURASTEEL® wall has a completely bespoke design which is completely independent from the listed building fabric, new roof and roof structure, offering 2 hour fire compartmentation and fire protection to the supporting steel structure. To keep the wall independent, we worked closely with Promat, specialist contractor Sharpfibre and the Architect to achieve working movement details whilst maintaining a practical and safe installation process. We were able to use the system to hide the complex supporting steel structure eliminating further fire protection providing value engineering options for our client".

Specialist fire protection contractor Sharpfibre installed the DURASTEEL®. The components were cut to size off site using a state-of-the art guillotine. Then the DURASTEEL® was fixed to the floor slab and sides of the steel frame, with movement control at the sides for up to 25mm and at the apex of 75-100mm for deflection. "DURASTEEL® was the right product for the job and Promat offered good design advice," says Sharpfibre's Sales and Marketing Director Gianfranco Apicella.

Promat Durasteel didn't just shine on the DIMCO job. It was also installed to protect the main power and signal cables across the new sidings within the soffit slab recesses. They are contained by two layers of 50mm-thick Promatect L500, another leading Promat product, for heat insulation. They're also overlaid with 9.5mm-thick DURASTEEL®. This ensures the cables' temperature will not exceed 80°C should a fire break out on the tracks below. This allows operations to continue running in the event of a fire. The new sidings contains accommodation and plant areas where Promat Fire Compound has been used to fire stop around 600 service penetrations through compartment walls.

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Other Promat fire protection products have also been proving themselves at Westfield London. Around 150,000m² of PROMATECT®-250 and PROMALIT is currently being installed by Sharpfibre. This is being used to encase structural steelwork for the buildings within the 200,000m² shopping centre. Promat's VERMICULUX® board was used to provide 4-hours fire protection for higher risk areas. This was also used within the west DIMCO building to provide 2 hour fire protection to structural steelwork within the sub-stations.

"We're incredibly proud of what we've achieved here," says Promat UK's Stuart de Voil. "It goes to show why more and more companies are choosing Promat for their fire protection needs."

Editors' notes

Promat UK Limited is the country's only 'one-stop shop' for passive fire protection. As well as DURASTEEL®, its other leading brands include SUPALUX®, MASTERBOARD®, VERMICULUX®, PROMATECT®-250 and PROMALIT® ranges of fire protection boards, and the PROMASEAL® range of fire stopping products.

Promat UK Limited is owned by Etex, a European building materials group with companies in more than 30 countries, which form a global network of specific knowledge concerning fire protection and high temperature insulation.

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Artist's impression of the Westfield London complex at White City.



The tallest ever DURASTEEL® firewall in the UK, inside the DIMCO building.

