

Vida Dubai Mall

Situated in the iconic district of Downtown Dubai, the Vida Dubai Mall development offers a mixture of luxury residential and hotel opportunities set within two strikingly contemporary high-rise towers. Standing tall at 55 and 38 storeys, the project makes the most of its prime location with a gleaming curtain wall façade system that allows for floor-to-ceiling views of the surrounding city, including Burj Khalifa and the Dubai Fountain. To protect the buildings and the people inside whilst ensuring code compliance, a fully tested and certified perimeter fire barrier system solution was vital.

Solutions used

- Siderise CW Perimeter Barrier System for curtain walling comprising CW-FS Firestop and CW-FB Fireboard
- Siderise CH/RV Closed State Cavity Barrier Systems for non-ventilated cladding comprising RV Vertical Cavity Barrier and CH Closed State Horizontal Cavity Barrier

Project:

Vida Dubai Mall

Design and specification

In line with the stringent requirements of the UAE Fire and Life Safety Code, the unitised curtain wall required a protected spandrel solution comprising a firestopping system that was installed continuously between the floor slab edge and spandrel panel at each floor, which included protection to the exposed vertical aluminium mullions in the spandrel zone. This solution needed to provide a 2-hour fire rating for the perimeter fire seal, and 1-hour for the spandrel.

The design and performance specification from lead consultants, WSP, set out to find solutions from experienced manufacturers – a requirement that was also part of the of the September 2017 draft of the UAE Fire and Life Safety code, that had only just been released. Whilst exploring several wet-apply two-part systems, which contained components from different manufacturers, it was found that these solutions could not comply with all elements of the Code requirements, nor could they provide a complete and holistically tested system, including a protected spandrel solution.

To resolve these issues, the façade contractor, Zebian, suggested an enhanced perimeter fire containment solution from Siderise. This solution is system tested in conjunction with a non-fire rated unitised aluminium curtain wall and, in a configuration, that assessed not only the perimeter firestop and the spandrel panel, but the interface between them (thereby enabling the performance of the products as a system to be properly assessed). It also carries third-party Intertek certification, verifying that it could fulfil all aspects of both the Code and performance specification.

The specified system featured Siderise CW-FS120 Firestop for floor-to-floor horizontal compartmentation, and a single layer of Siderise CW-FB Fireboard countersunk to the reverse of the insulated spandrel panel, with additional CW-FB Fireboard protection applied over the exposed mullions.

Curtain wall façades are susceptible to movement, especially when installed on high-rise buildings. The thermal load of a fire could also cause the aluminium frame to distort. Therefore, it was imperative that the perimeter fire seal – which would be installed in the movement gap – could withstand constant dynamic movement without its tight seal and fire resisting performance being affected. Thanks to the products' unique pre-compressed vertical-fibre Lamella construction, CW-FS Firestop is proven to accommodate movement of +/-10%.

Additionally, RV Vertical Cavity Barrier and CH Closed State Horizontal Cavity Barrier were additionally selected for the rainscreen façade system used on the rear of the building. CW-FS Firestop was also used for room-to-room vertical compartmentation, sealing the junctions between the apartment units, and for separation between public and non-public spaces to make certain compartmentation was in line with code requirements, whilst also helping to reduce noise transmission.

Installation and inspection

With installation quality critical to the performance of passive fire safety products, it was crucial that the solution was fitted by competent installers who understood the specific requirements of both the project and the products – so much so that this was stipulated in the consultant's specification.

To make sure this was achieved, we gave clear detailing and onsite training via our experienced local partners, General International Group (GIG), for installation of the full spandrel protection system. This was further supported by onsite inspections by Siderise technical service engineers, who produced detailed reports with visual evidence that the performance-critical aspects of the installation had been carried out to the expected high standard and as per our recommendations. This included checking the products were installed in the correct direction (i.e. with a vertical fibre orientation), the right level of compression had been achieved and any joints were tightly abutted and taped.

Summary

This development is in the final throes of completion with Inventure Metal Products seeing the project through to the end. It will not only be an exciting addition to a skyline defined by its modern skyscrapers and futuristic design, but a prime example of the high technical and safety standards necessary to create beautiful buildings that are built to protect those who use them. Our solutions specified for the project helped to achieve the passive fire protection requirements for the façades, whilst our full service technical and site support teams helped to ensure every element was delivered efficiently and in compliance with both the Code and the project aims.

Completion Date
October 2022

Sector
Residential & leisure

Client / Developer
Emaar Properties PJSC

Main Contractor
Shapoorji Pallonji Mideast LLC

Façade Contractor
Zebian Facade Solutions & Inventure Metal Products

Siderise Product Supply Partner
General International Group (GIG)

Lead Consultant
WSP Middle East Architectural & Engineering

Products used
**Siderise CW-FS120
Curtain Wall Firestop
Siderise CW-FB
Curtain Wall Fireboard
Siderise RV Rainscreen
Vertical Cavity Barriers
Siderise CH-CB Closed State Horizontal
Cavity Barriers**



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