

SIKA STORIES - FACADE SHAPING THE NEWEST JEWEL IN WESTMINSTER'S CROWN

How Sika's façade bonding solutions helped bring a new London landmark to life



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SHAPING THE NEWEST JEWEL IN WESTMINSTER'S CROWN How Sika's façade bonding and sealing solutions helped bring a new London landmark to life

A one-million square-foot complex. Six buildings named after the world's most revered diamonds. All distinguished by an elegant landmark façade combining diamond-shaped pre-cast concrete, aluminum, glass, membranes and gaskets amounting to 55 km of continuous joints. What bonding material could hold all this together while withstanding extreme building sway and thermal movements? The answer was a specially developed Sikasil[®] solution, domesticated, tested and certified in record time, to keep this innovative construction on track and moving forward.

Medium version For longer LinkedIn posts

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A new jewel is formed

In the heart of London's Westminster, among the world's most desirable addresses, an exciting new piece of architecture has recently just taken shape. Dubbed The Broadway, this mixed-use complex combines innovative architecture with high-end retail spaces, offices and 268 of the most valuable new luxury apartments in the city.



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A half million square-foot complex. Six buildings named after the world's most revered diamonds. All distinguished by an elegant landmark façade combining diamond-shaped pre-cast concrete, aluminum, glass, membranessee more



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The development's elegant geometric facades consist of diamond-shaped pre-cast concrete panels, inspired by neighboring art deco facades. The six buildings apply varying design languages, combining dark grey, light grey, white and even reddish precast elements. Ranging from 14 to 19 storeys high, their distinctive design reframes the streetscape of this part of central London while providing full-height glazing for upper-floor views of the Westminster skyline.

Discover how Sika's tailored façade bonding and sealing solutions move architectural innovation forward. >> Read more

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The material challenges

From a bonding perspective, the challenges in enabling this structure were immense. The sheer variety of substrates, ranging from pre-cast concrete to powder-coated aluminum, anodized aluminum and glass, already limited the options for bonding materials. Add thousands of meters of membranes and gaskets, and material compatibility challenges arise. Then there are the pre-cast elements themselves, which were not only susceptible to staining, but required a material that could be precisely matched to each of three highly unique colors specified by the architect.

Structurally, the facades also needed to be constructed and certified to withstand extremely high building sway, necessitating a weather sealant capable of handling slab deflection of 9 mm and a building sway in excess of 14 mm. Thermal and moisture variations would contribute to further vertical and horizontal expansion and shrinkage of the precast. Whichever adhesive was chosen, it would need to be applied consistently by on-site workers to non-standard large joint dimensions. This made any multiple-technology solutions, such as a combination of polyurethane and silicone, too risky.

The solution: Sikasil® WS-290 EU

Ultimately, the product selected was Sikasil® WS-290, a sealant formulated for the US that was quickly domesticated and certified for European health and safety standards (REACH) for the UK market.

Thorough application testing

To keep pace with a complex project plan, Sika worked closely with the contractors to perform all adhesion, non-staining, compatibility and application testing within a matter of weeks. For the particularly wide joints, additional tests were carried out to examine sagging and through-cure behavior. Tailor-made sealant colors – anodized light grey, dark grey and rustic red – were also developed to complement the individual colors of the various pre-cast elements.

Rapid certification

To certify the solution for use in Europe, the product first required clearance for REACH health and safety standards. Within three months, ASTM certification for movement capability was also acquired to ensure movement capability of +100% to -50%. Finally, CE marking was completed in less than five months. This accelerated timeline was made possible through close customer collaboration and experienced guidance from Sika technical staff.

Now that the structures are complete, passersby have just begun to admire The Broadway's signature façade, which brings an innovative and elegant new design language to the streets of Westminster. Little do they know that some 55 kilometers of multi-material joints, applied onsite in 1,200 bays, made it all possible.

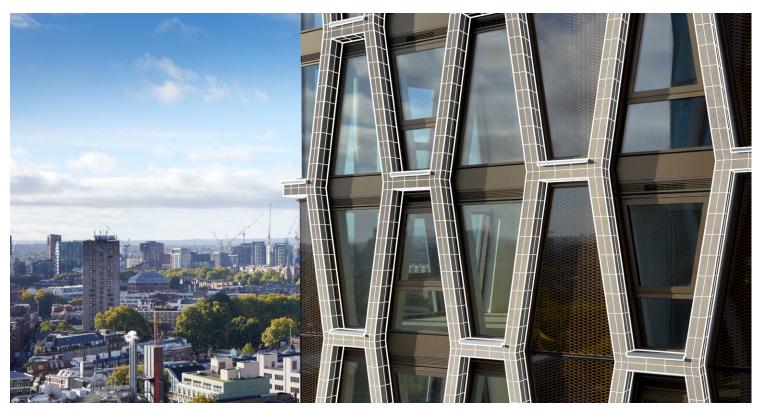
Moving the industry forward

This is just one example of the many technical challenges Sika solves every day to enable new architectural designs and structural possibilities. As architects continue to explore new materials and groundbreaking constructions, Sika remains firmly committed to developing innovative, tailored solutions that move the façade construction industry forward.

Key visual







Fact boxes

The Broadway in short

Developer: Northacre Main contractor: Multiplex Façade consultant: Buro Happold Façade contractor: Focchi Precast producer: Techrete, Decomo IG-producer: Interpane, Pietta Glass Working

- 1.72 acre site
- 6 buildings, 14-19 storeys in height
- 355,000 square feet of residential space
- 117,300 square feet of office space
- 25,000 square feet of groundfloor retail space

Façade sealing and bonding highlights

- Sikasil[®] WS-290 EU bonding sealant tailored for REACH, ASTM and CE certification
- 55 km of continuous, large-dimensioned joints, applied in 1,200 bays
- Slab deflection 9 mm, building sway 14.10 mm
- **Tolerances:** +/- 6-15 mm
- Multi-material adhesion: precast, aluminium, EPDM membranes and gaskets
- Three custom sealant colors: anodized light grey, dark grey, rustic red
- Curtain walling: Sikasil® SG-500

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BONDING WITH ELEGANCE

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