Crystal Clear Bonding Enhances Design and Performance

Case Study: Institute for Research and Treatment of Cancer

The Project

The I.R.C.C. (Institute for Research and Treatment of Cancer) is a private non-profit cancer research organization based in Torino, Italy. It was founded and is supported by the Fondazione Piemontese per la Ricerca sul Cancro-Onlus (FPRC) and is operated by the Fondazione del Piemonte per l’Oncologia.

This project comprised an extension and renovation to the existing building which included the construction of a new tower to the east of the research centre which is designed in perfect symmetry to the existing west tower. These towers are connected by a glazed walkway which also serves to provide conference facilities and workspace.

DOWSIL™ 3363 Insulating Glass Sealant was specified for the secondary seal of the insulating glass units to enable the smallest possible joints and provide additional high strength. DOWSIL™ TSSA Transparent Silicone Structural Adhesive was used to bond the steel button connectors of the point fixed glazing system to the insulating glass units.

DOWSIL™ 895 Structural Glazing Sealant was specified for weather sealing the movement joints in the glazed facade.

The Challenge

A key issue facing architects today is sustainability and as such, energy efficiency forms a key part of planning applications. With this in mind, Italian architects Studio Cucchiarati Srl were keen to seek out higher-performing products which could meet their green design aspirations.
for the extension and renovation of the Institute. Furthermore, it was important to enhance building aesthetics and create a better indoor environment to improve the health and wellbeing of the building occupants.

The Solution

Early adoption of innovative technology to advance the building envelope has the potential to positively influence the next chapter of green building. Studio Cucchiarati were presented with new silicone technology solutions from Dow which contributed toward their key goals for improved overall thermal efficiency and durability of the glazed façade, a pleasant workplace and a more pleasing building appearance.

The façade was constructed using insulating glass units that were gas-filled and dual sealed around the perimeter by Italian Glass Manufacturer, Glastebo. High strength DOWSIL™ 3363 Insulating Glass Sealant was specified as the secondary seal, to limit stress on the primary sealant, enable smallest possible joint dimensions and enhance its durability and longevity.

The insulating glass units were attached to the curtain wall façade by means of a point fixed glazing system which utilised a breakthrough bonding technology from Dow. Glastebo used DOWSIL™ TSSA Transparent Silicone Structural Adhesive crystal-clear silicone film to bond the
steel button connectors directly on to the insulating glass unit. This innovative approach eliminates the traditional need to drill through the glass for placement of retaining bolts and the use of gaskets to retain air tightness at the point of fixation. This enables superior durability and longevity of the gas-filled glass units, which can help to optimize the thermal insulation of the facade. With almost invisible bonding points, the use of DOWSIL™ TSSA Transparent Silicone Structural Adhesive creates a homogeneous, sleek facade appearance and improves the overall building aesthetic.

DOWSIL™ 895 Structural Glazing Sealant was installed as the external weather seal for the movement joints in the glazed facade, to provide a fully compatible, watertight system.

Sustainable architecture must be flexible, adaptable and bold. Studio Cucchiarati and Glastebo embraced the latest pioneering technology from Dow to design in a sustainable way and increase performance of the building facade.

DOWSIL™ 3363 Insulating Glass Sealant

DOWSIL™ 3363 Insulating Glass Sealant is a two-part, neutral and fast curing, high modulus silicone sealant with a design strength of 0.21 MPa. This outstanding strength, which is approximately 50% higher than conventional silicone sealants, enables smaller yet stronger IG jointing in tall building design and construction. High strength also limits the stress on the primary sealant, thus adding to façade durability and longevity.

DOWSIL™ TSSA Transparent Silicone Structural Adhesive

For enhanced design freedom and aesthetics, DOWSIL™ TSSA Transparent Silicone Structural Adhesive provides a next-generation bonding option for crystal clear, point fixed glass facades. Outperforming current technologies, this innovative structural adhesive helps maximize thermal performance of façades.

Suitable for façade construction as well as for glass walls and interior decorative applications, DOWSIL™ TSSA negates the need to drill and bolt through the glass – eliminating the potential for leakage of gas and thermal bridging.

DOWSIL™ 895 Structural Glazing Sealant

DOWSIL™ 895 Structural Glazing Sealant is a one-part neutral curing silicone designed specifically for the structural bonding of glass, metal, and other building components. It exhibits excellent weathering characteristics and has a high resistance to ultra violet radiation, heat and humidity.
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Dow has sales offices, manufacturing sites and science and technology laboratories around the globe. Find local contact information at consumer.dow.com/ContactUs.