

CASE STUDY

Invisible bonding for improved aesthetics National Indoor Arena, Dublin, Ireland



City and country

Dublin, Ireland

Products

DOWSIL™ 896 PanelFix Adhesive
DOWSIL™ PanelFix Tape
DOWSIL™ R41 Cleaner

Key participants

- Architectural Consultants
Cooney
- Architects
Cladding
- Contractor
Mosco Gleeson
- Dow Technical Distributor
Sherwin-Williams

The Project

January 2017 saw the completion of the new National Indoor Arena (NIA) in Dublin. This fully accessible, multi-sport and multi-purpose arena is the newest of its kind in Europe. Sitting within the wider National Sports Campus site master plan and built to the highest world class standards and specifications, it will consolidate the national sporting infrastructure in Ireland and drive the development of Irish sport so that young aspiring athletes can fulfill their potential.

The 18,000 sqm facility includes an IAAF track and training centre for athletics, a gymnastics training centre, a 12-court sports hall and 3G synthetic pitches for football and rugby training; all this backed up with elite conditioning, sports science and education facilities.

From a corporate perspective, a number of the arenas can be converted to host conferences and non-sporting events, catering for small numbers or thousands of attendees. This flexibility, be it sporting or event hosting, puts the NIA Dublin and Ireland at the leading edge of international indoor standards.

The intricate, external façade of the building is comprised of a range of striking geometric panels. For the lower level panels, the design demanded a “secret fix” aesthetic with no visible fixings. The DOWSIL™ PanelFix System is tailor-made for façade cladding applications and was identified as the product which best fitted all aspects of the project requirements.

The Challenge

The exterior of the NIA Dublin posed some interesting design challenges, which required excellent collaboration and coordination between the design and construction teams in order to find the smartest and most efficient methods for façade construction.

Perhaps the greatest challenge posed was the lack of physical space in which to complete the build. Typically, panels that are fitted mechanically can be built in unitised sections offsite before being attached to the building. However, space constraints and restricted access meant that this was not a viable option.

The use of Trespa Meteon A03.0.0 8 mm thick decorative laminate panels for the façade also presented the teams with a load bearing consideration to address, whilst complying with the architect’s requirements for a “secret fix”.

The Solution

From an early stage in the design, technical teams from Sherwin-Williams and Dow collaborated with representatives from Mosco Gleeson to find a solution for the attachment of the lower façade. Mosco Gleeson is a design and installation company specialising in steel and polymer structures, project managing, designing and installing large scale and intricate facades. Sherwin Williams is the strategic partner of Dow for the distribution of sealants and adhesives in the UK and Ireland.



Mosco Gleeson engaged with Dow early in the design process and found them to be an invaluable technical partner in assisting with the development of their designs and their proposed fixing methodology. They already had previous experience working with Dow on silicone structural glazing designs which provided additional reassurance concerning the proposed selection of the DOWSIL™ PanelFix System.

DOWSIL™ 896 PanelFix Adhesive has high strength and elasticity and is specifically designed for non-glass panel applications requiring high durability and fast handling. This, in conjunction with DOWSIL™ PanelFix Tape and their recommended cleaning and priming materials, enabled direct on-site application of cladding panels to the frame sub-structure. Without the need for mechanical fasteners, the bonding is not visible, a prerequisite of this particular installation.

The Dow technical laboratory assisted with pull tests to confirm the adhesive bond strength on representative frame samples, producing a comprehensive report and technical data set. As result, Mosco Gleeson were confident in proceeding with the install using the DOWSIL™ PanelFix System versus traditional mechanical fix alternatives.

Mosco Gleeson utilised 3D modelling to analyse and progress the “panel” set out in order to maximise efficiencies before attending on-site.

DOWSIL™ 896 PanelFix and DOWSIL™ PanelFix Tape was then used to fix the Trespa Meteon façade panels directly onsite to a Mosco Gleeson rail system; this in turn had been attached to underlying Kingspan and Eurobond Rainspan interlocking insulation boards. This complete system of fixation has no visible connection points, delivering a beautiful aesthetic to the façade whilst complying with the architect’s exacting requirements.

Sherwin-Williams also attended the site to provide special training to Mosco Gleeson installers and the project team, which demonstrated the substrate preparation and cleaning procedures for the specified DOWSIL™ R41 Cleaner prior to the application of the DOWSIL™ PanelFix Tape and DOWSIL™ 896 PanelFix. The Sherwin Williams Technical Team then installed the Trespa Panel onto a mock-up structure to illustrate the bonding steps and ease and speed of installation.

The DOWSIL™ PanelFix System

Tailor-made for façade cladding applications, the DOWSIL™ PanelFix System is a cost-effective, easy to use solution for non-glass panel bonding. With no visible connection points for improved aesthetics, it expands building cladding design possibilities whilst maintaining safety and control.

DOWSIL™ 896 PanelFix meets the European standard for adhesives used in cladding systems European Technical Approval (ETA) 17/0689.

The DOWSIL™ PanelFix System has been approved and certified by the German Institute for Building Technology (DIBt), Approval Number Z-10.8-928. This approval includes the design certification (aBG) as well as the general technical approval (abZ) for the bonding system.

For more information

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