

Sydney Opera House Western Foyer

Sydney, New South Wales, Australia



INSTALLER/APPLICATOR

- BetterTiles - Surry Hills, New South Wales, Australia

GENERAL CONTRACTOR:

- John Holland - Pyrmont, New South Wales, Australia

ARCHITECT:

- Original Architect - Jørn Utzon and son Jan Utzon
- Collaborator - Johnson Pilton Walker - Sydney, New South Wales, Australia

PRODUCT FEATURED:

- ARDEX Multiprime Water-Based Primer
- ARDEX Abacrete Bonding Agent for Use with Sand / Cement Screeds and Renders
- ARDEX X 77 Premium MICROTEC® Flexible Wall and Floor Tile Adhesive
- ARDEX E90 (ARDION 90) Admix for Cement-based Tile Adhesives
- ARDEX ABAPOXY High Performance Epoxy Adhesive and Grout
- ARDEX SE Coloured Silicone for Sanitary Installations

CHALLENGES:

- Reproducing Jørn Utzon's original vision
- Glass reinforced concrete tile was produced specifically for the project - the first of its kind in Australia, as Jan Utzon wanted a seamless floor finish
- Construction while building was being used
- Irregular shaped tiles
- Floor movement from stages and loading docks underneath foyer
- Silicone used in perimeter and expansion joints had to match the floor to create seamless look



PROBLEM:

Originally designed in 1956 by Jørn Utzon, the Sydney Opera House has become a world renowned modern piece of architecture. In 1999, Jørn Utzon was asked to become the official primary architect for all future projects in the opera house. In his regained role, Jørn, along with his son Jan Utzon and Richard Johnson of Johnson Pilton Walker helped design several projects. One of the projects Jørn was tasked with was the renovation of the western foyer. Design improvements included irregular tile shapes and glass reinforced concrete tiles with clear silicone expansion joints to create a seamless floor. Frequent floor movement was expected because of the stage and loading docks below the foyer, which could potentially cause the tiles to crack.

SOLUTION:

To prepare the original substrate for the new tile installation, ARDEX recommended ARDEX Multiprime Water-Based Primer. ARDEX Multiprime is designed to improve adhesion of ARDEX products to various porous substrates. This primer dries in 15 to 30 minutes allowing subsequent products to be installed quickly.

When applying the screed, ARDEX recommended ARDEX Abacrete Bonding Agent for use with sand/cement screeds and renders. ARDEX Abacrete is a liquid polymer additive that greatly improves the shear and tensile bond strength of the screed.

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To place the specialty tiles, ARDEX X 77 Premium MICROTEC® Flexible Wall and Floor Tile Adhesive was used in addition to ARDEX E 90 Admix for Cement-Based Tile Adhesives. ARDEX X 77 is a high performance, fiber reinforced polymer modified adhesive with ARDEX MICROTEC® Technology. The combination of these two products enhances bond strength for use in high volume foot traffic areas. When mixed with the ARDEX E 90 additive, it has water repellent qualities and improved sag resistance. By using the combination of the two products together, the specialty tiles were less likely to move while the adhesive was drying, maintaining an even surface.

For the final touches, ARDEX SE Colored Silicone for Sanitary Installations was used to fill perimeter and expansion joints and ARDEX ABAPOXY High Performance Epoxy Adhesive and Grout was sprinkled over the silicone for a matte finish. This enhanced the seamless look of the tile installation. To grout the rest of the tile, ARDEX ABAPOXY was selected for its permanent color capabilities. ARDEX ABAPOXY also has a high resistance to chemicals, so commercial cleaning required for a high traffic area would not have an adverse affect on the grout.

Each of the ARDEX products used were low in VOC, allowing the Sydney Opera House to remain open during the installation.



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