

# TECHNICAL BULLETIN – TB071.003

## WATERPROOFING AND TILING EXTERNAL COMPRESSED FIBRE CEMENT (CFC) SHEETED BALCONIES

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### INTRODUCTION & SCOPE

Ardex Australia Pty Ltd have prepared guidelines covering the waterproofing and installation of a ceramic tile surface finish over CFC sheeting on external balconies.

The waterproof membrane has the required flexibility to accommodate the anticipated movement in the balcony structure and incorporates required bond breakers and membrane reinforcement across the joints.

The bonding and finishing of the ceramic tile surface incorporates adhesives and grouts that also produce a flexible bond while providing the required service performance.

### QUALIFICATIONS

All surfaces are to be structurally sound with movement characteristics less than 1/360<sup>th</sup> of the span between the supports.

The Compressed Fibre Cement sheeting shall be firmly screw fixed to the support structure in accordance with the sheet manufacturer's recommendations. Mechanical fixings such as screws shall be countersunk, filled and sanded to a smooth substrate surface finish.

The Compressed Fibre Cement sheets are to be installed with falls to outlets where a waterproofing membrane is to be applied directly over the sheet. Falls to waste shall be a minimum of 1:100 (i.e. approx 20mm in 2m) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.

Install suitable flashing, ideally prior to the installation of the balcony screen/sliding door.

Prepare and seal all wall/floor junctions with a bead of neutral cure silicone.

Membrane shall be applied up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door).

Membrane application shall be applied to the entire balcony/deck floor and at least 100mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents.

The membrane shall be applied down over the front edge of the balcony onto the drip rail.

Any gaps around balcony or deck penetrations shall be sealed prior to membrane application.

Membrane shall be applied down into outlets and drains and ensuring excess material is removed.

All weep holes shall be above the membrane application area.

### PREPARATION

The Fibre Cement Sheeting shall be sanded to a smooth to plane finish and vacuumed to remove all loose particles. All surfaces should be dry, clean, and free of dust, grease and all loose contaminating materials.

Place a foam backing rod into the sheet joints to a depth equal to half the distance between the sheets. Fill the joints above the backing rod with a good quality neutral cure silicone,



extending to 5mm on either side of the horizontal surface adjacent to the joints, and spread to a thickness of 1.0mm.

Apply a bead of neutral cure silicone or other suitable bond breaker along all internal corners (e.g. wall/floor junctions). This bond breaker should be extended approximately 6mm on either side of the corner or joint.

Ensure surfaces are thoroughly dry and apply one coat of ARDEX WPM 265 water based primer at a coverage rate of 5 - 6 square metres per litre to all surfaces to be treated. Allow the primer to dry (at least 30minutes) before applying the next coating. Plastic (e.g. PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

Alternative primers for external applications are ARDEX WPM 270 solvent based primer on dry substrates or ARDEX WPM 300 HydrEpoxy two part, water based epoxy for use over damp substrates with no surface water present.

#### **INSTALLATION OF WATERPROOF MEMBRANE**

Apply a liberal stripe coat of ARDEX WPM 001, ARDEX WPM 002 or ARDEX WPM 155 waterproofing membrane across all joints and corners extending not less than 120mm on either side of the joint or corner and, while the coating remains wet and fluid, lay ARDEX Deckweb equidistantly across the corner or joint. Knead the ARDEX Deckweb into the underlying coating, ensuring there are no creases, folds or air pockets, to thoroughly wet out the ARDEX Deckweb. Only apply the membrane to a sufficient area that will allow the ARDEX Deckweb to be laid while the coating remains wet.

As soon as all corners and joints have been reinforced a full coat of ARDEX WPM 001, ARDEX WPM 002 or ARDEX WPM 155 shall be applied to all surfaces to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0mm.

Allow the preceding coat to cure hard (normally at least 2 hours) and apply a further coat of ARDEX WPM 001, ARDEX WPM 002 or ARDEX WPM 155 membrane to all surfaces to be treated, by brush or roller application techniques, to achieve a wet film thickness of not less than 1.0mm.

Ensure the membrane is applied up all walls at least 100mm above the finished tiled surface and in accordance with AS 4654.2 - 2009.

Allow the membrane to dry in accordance with the manufacturers' instructions before fixing of tiles.

#### **ADHESIVE FIXING OF TILES**

Suitable adhesives for fixing tiles to ARDEX WPM 001, ARDEX WPM 002 or ARDEX WPM 155 externally are ARDEX X77, ARDEX Optima, ARDEX Abaflex, ARDEX STS8 + E90, and ARDEX X56.

When using ARDEX X56 externally there should be sufficient falls so as no ponding of water occurs.

Apply the adhesive to ensure a minimum dry bed of 3mm is achieved. As a guide a 10mm x 10mm (minimum size) notched trowel can be used for floors. Follow packaging instructions in conjunction with product data sheets.

Press and slide the tile at right angles to the notch pattern to ensure 100% coverage on the back of the tile. Deeply keyed quarry tiles and some extruded tiles may require buttering of the adhesive on the back of the tile to ensure 100% coverage. Occasionally remove tiles and check there are no voids in the adhesive layer.

Provide movement joints in accordance with Australian Standard AS3958.1 - 2007. Joints are to be placed along all perimeters against walls, columns, penetrations, fittings such as sanitary items and joinery fittings.



**Note:** For balcony decks having the waterproof membrane applied over the Compressed Fibre Cement sheet and tiles directly fixed over the membrane, control joints in tiling must correspond with sheet joints.

Ensure joints between tiles are clean and free from excess adhesive. With porous tiles, dampen joints and tile edges with water (but not so wet that water remains in the joints) before grouting to avoid dehydration of the grout.

Do not grout until the adhesive has set firmly. All "spacers" must be removed from joints.

Grout the tile finish after the adhesive has dried for at least 24 hours using the ARDEX FG8 mixed with an 80% to 20% blend of ARDEX Grout Booster and water where the joints between tiles are up to 8mm wide. Allow the grout to cure and dry for 24 hours before subjecting the area to normal loads.

ARDEX SE or ARDEX ST Silicone should be used for movement joints, and corners (wall to floor). Where possible the ARDEX silicone should be at a 2:1 ratio width: depth). For internal joints the width and the depth of the joint should be minimum 6mm, and for external joints 10mm. For joints greater than 10mm deep a backing rod should be used. When using over unglazed porous tiles mask the joint edges with tape. Clean off any excess whilst the silicone is still wet.

**IMPORTANT**

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application / installation of the products described. Since each project potentially differs in exposure / condition specific recommendations may vary from the information contained herein. For recommendations about specific applications / installations contact your nearest Ardex Australia office.

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**REASON FOR REVISION**

Review and update. Addition of WPM 001 and WPM 155

**NSW** 02 9851 9100, **QLD** 07 3817 6000, **VIC** 03 9308 9255, **SANT** 08 8268 2511, **WA** 08 9256 8600

**New Zealand** (Christchurch) 643 384 3029

Web: <http://www.ardex.com> email: [techinfo@ardexaustralia.com](mailto:techinfo@ardexaustralia.com)



