

# TECHNICAL BULLETIN – TB227

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## BONDING CERAMIC TILE TO WET-SEAL™ WATERPROOFING MEMBRANE SYSTEMS

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### INTRODUCTION

The Wet-seal™ Group operates in Australia and New Zealand as a group of independent franchisees of a waterproofing system designed for residential applications in wet areas.

ARDEX Australia Pty Ltd has carried out extensive testing to determine the effectiveness of a number of ceramic tile adhesives when applied over the different types of 'Wet-seal' waterproofing membrane systems.

### 'WET-SEAL' WATERPROOFING SYSTEMS EVALUATED

- 1) Wet-Seal™ Fibre-coat polyester fibreglass membrane over-coated with Wet-seal Top-coat 300 for internal and external use.
- 2) Wet-seal™ Top-coat 300 over-coated with Enviro-coat DS 411, for **external** use.
- 3) Wet-seal™ Top-coat 300 over-coated with Enviro-coat IS 511, for **internal** use.

### CERAMIC TILE ADHESIVES RECOMMENDED

- a) ARDEX X77\*\* – Polymer modified cementitious type
- b) ARDEX X18\*\* – Polymer modified cementitious type
- c) ARDEX Optima – High polymer premium type
- d) ARDEX STS8 + ARDEX E90 – Polymer modified cementitious type
- e) ARDEX Abaflex – Polymer modified cementitious type
- f) ARDEX X10\*\* – Flexible non-slump tile adhesive
- g) ARDEX X52\* – Polymer rubber modified type
- h) ARDEX X56 - Polymer rubber modified cementitious type
- i) ARDEX MPP- Polymer modified cementitious type.

\* Ardex X52 functionally replaces ARDEX Glue in this recommendation.

\*\* With these adhesives, they can be improved with the use of ARDEX E90, or ARDEX Abalastic (X18 and X10 only) to alter their S ratings.

### RECOMMENDATIONS

#### 1) Wet-seal Fibre Coat System

##### a) Polyester fibreglass membrane overcoated with Wet-seal™ Top-coat 300

The use of the Wet-seal™ Top-coat 300 provides a bonding bridge/prime coat.

ARDEX X77, ARDEX X18 ARDEX STS8 plus ARDEX E90, ARDEX Abaflex, ARDEX X52, ARDEX X56 and ARDEX Optima are recommended.

For external applications in tiled ponds with ARDEX Optima, improved results are achieved when either Ardex Primer Sand or kiln dried clean sand (0.3-0.5mm) is broadcast over the wet epoxy to cover at least 90% of the surface at ~700gm/m<sup>2</sup>. The excess sand is brushed and vacuumed away after the epoxy has dried (normally the following day). *The use of sand is not mandatory, but is recommended when there likely to be delays in application of the tiles longer than approximately 7 days.*

##### b) Heating coil installation over Wet-seal Top-coat 300 (internal)

When heating coils are going to be installed on top of Wet-seal Top-coat 300, ARDEX X77, ARDEX X18, ARDEX Abaflex, STS8 + ARDEX E90, ARDEX Optima or Ardex X56 can be used to embed the heating coil. Apply the adhesive using flat trowel and screed off at least 2 mm above the heating coil. Allow to cure for overnight prior to installation of ceramic tiles.

1. Wet-seal™ Top-coat 300 is recommended for use as the bonding bridge coating to be applied between the polyester fibreglass and the ceramic tile adhesive. Apply the Top-coat 300 as soon as the fibreglass is dried (preferably within 30 min to 1 hour under 23°C / 50% RH) and in any event within same day of application of fibreglass at wet film thickness of 300 microns. For external applications clean dried sand can be broadcast to improve the final adhesive bond.
2. ARDEX Optima, ARDEX STS8 + ARDEX E90, ARDEX Abaflex, ARDEX X56 and ARDEX X52 are recommended for the installation of ceramic tiles over the Wet-seal polyester/fibreglass system with a single coat of Wet-seal Top-coat 300.  
ARDEX X77, ARDEX X18, ARDEX Abaflex, ARDEX STS8 + ARDEX E90, ARDEX X56 and Optima can also be used to embed heating coil over Wet-seal Top-coat 300 prior to fixing tiles.
3. Allow the Top-coat 300 to cure overnight prior to removal of excess sand and then fixing the tiles with ARDEX tile adhesives.
4. The conclusions drawn within this bulletin are limited to the waterproofing systems tested. Any product formulation or installation changes in the Wet-seal products will render this recommendation null and void.

## **2) Enviro-coat DS411 and IS511**

5. ARDEX Abaflex, ARDEX X77, ARDEX X18 and ARDEX X10 and ARDEX X52 tile adhesives are recommended for the installation of ceramic tiles over Wet-seal™ Enviro-coat waterproofing membranes, when applied to concrete substrates, after the membranes have been allowed to cure for a period of 48 hours.
6. ARDEX X52 and ARDEX X10 tile adhesives shall be used in external applications which are protected such as covered concrete verandahs and compressed sheet clad decks; (ARDEX ABAFLEX and ARDEX X77 may also be used in this situation).
7. ARDEX X56 adhesive is recommended for internal installations over particleboard and plywood substrates. All constructions must have correct falls to waste and not have areas of ponding water.
8. Historical data has shown that ARDEX OPTIMA will also adhere tiles to the IS and DS series membranes and can be used in any these applications
9. ARDEX MPP can be used to bond tiles over IS511 on internal walls only.

### **CONDITIONS**

1. The installation of waterproofing membranes must comply with AS 3740-2004 waterproofing of wet areas within residential buildings and AS 4654.2-2009 waterproofing membrane systems for exterior use above ground level.
2. The installation of tiles must conform to the requirements of AS 3958.1: 2007
3. The waterproofing installation must be carried out by Wet-seal™ accredited tradespersons, according to Wet-seal™ specifications.
4. All products recommended in the system shall be used in strict accordance with the manufacturer's instructions and are to be within the shelf life outlined on the packaging.
5. All products recommended in the system must be supplied to the site in unopened sealed containers and shall be stored in accordance with manufacturer's instructions.
6. Ardex warrants satisfactory adhesion of tiles to Wet-seal™ membranes installed strictly as per guidelines provided in this document.
7. The Wet-seal™ Enviro-coat membranes shall be allowed to cure for a minimum of 48 hours before proceeding with subsequent coatings.

8. If Wet-seal™ Enviro-coat membrane coatings are allowed to dry for longer than 7 days, remove all contaminants from surface before proceeding with tiling. We do not recommended leaving the membrane open for longer than a week pre-tiling, but where in circumstances where the period extends past a month (28 days), then surface preparation of the membrane surface is required. Installers SHALL consult with Wet-seal to confirm the correct process.
9. Where tiles are removed, but not the membrane, then Wet-seal shall be consulted prior to any tile re-installation to confirm correct procedures.
10. Note that any deck construction must meet the requirements that:
  - I. it has falls away from the building walls that are 1:100 as the minimum,
  - II. and the vertical deflection in mm between the joists does not exceed 1/360<sup>th</sup> of the span for tiles less than 400mm square and 1/500<sup>th</sup> for tiles larger than 400mm square.
  - III. the material used for the deck construction is suitable for external exposure as recommended by the manufacturer (note that particleboards are designed for internal applications).

**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 ISSUE**

Addition of X18 at request of WetSeal, and also allowance for use of E90 and Abalastic with X18, X77 and X10.

**REVISION REQUIRED**

24 months from issue

**DISCLAIMER**

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

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