

TECHNICAL BULLETIN – TB227

(This Technical Bulletin supersedes all previous issues of TB217 and TB087)

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MMXIII

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™ Prime Coat 200 over-coated with Enviro-coat DS 411, for **external** use.
- 3) Wet-seal™ Prime Coat 200 over-coated with Enviro-coat IS 511, for **internal** use.
- 4) Wet-seal™ Pyure-coat 400 System (New Zealand).

CERAMIC TILE ADHESIVES RECOMMENDED

- a) ARDEX X77 – Polymer modified cementitious type
- b) ARDEX X56 – Polymer rubber 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 X52* – Polymer rubber modified type
- g) ARDEX X56 - Polymer rubber modified type

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 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/m². 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 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.

* Ardex X52 functionally replaces ARDEX Glue in this recommendation.

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 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 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

3) Wet-seal™ Pyure-coat 400

9. Improved adhesion results of the ceramic tile adhesives were achieved when applied over the aliphatic PU Pyure-coat 400 that had been applied directly to the concrete substrate. ARDEX OPTIMA, ARDEX X56 and ARDEX X77 produced wet adhesion results conforming to the requirements of AS4992.1.
10. It appears that the priming will slow down the drying of the PU membrane. Therefore it is important that the PU membrane is allowed to cure for 48 hours prior to fixing tiles using ARDEX X56 or ARDEX X77
11. If ARDEX Optima is to be used, the PU membrane has to be cured for at least 7 days prior to fixing tiles over.
12. Good adhesion was achieved between the aliphatic PU Pyure-coat 400 and the Wet-seal Top-coat 300 when Wet-seal Top-coat 300 was used as primer over the concrete.
13. Where Wet-Seal™ Pyure-coat 400 is to be applied over timber substrates (in the form of external timber decks) the recommended adhesive is ARDEX OPTIMA.

CONDITIONS

- 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.
- The installation of tiles must conform to the requirements of AS 3958.1: 2007
- The waterproofing installation must be carried out by Wet-seal™ accredited tradespersons, according to Wet-seal™ specifications.
- 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.

- 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.
- Ardex warrants satisfactory adhesion of tiles to Wet-seal™ membranes installed strictly as per guidelines provided in this document.
- The Wet-seal™ Enviro-coat membranes shall be allowed to cure for a minimum of 48 hours before proceeding with subsequent coatings.
- 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.
- 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 1/360th of the span for tiles less than 400mm square and 1/500th 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

Replacement of TB087 and 217 with some a revised recommendations and condensation

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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