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## TECHNICAL BULLETIN – TB091

# BONDING TILES OVER H.K. EPOXY MEMBRANES USING ARDEX CERAMIC TILE ADHESIVES

JULY 2024

### INTRODUCTION & SCOPE

H.K. Epoxy Seal Pty Ltd manufactures and distributes flexible epoxy waterproofing membranes to waterproof internal wet areas.

ARDEX Australia Pty Ltd has tested adhesion using selected ARDEX ceramic tile adhesives applied over the H.K. Epoxy Seal membranes to determine their suitability following International Standard ISO13007 (which supersedes AS4992).

Internal testing reference TSD666-2014 was a set of trials related to internal applications. Sometimes, the approved products in this bulletin may differ from the testing certification.

### PRODUCTS EVALUATED

There were two types of epoxy membrane evaluated:

- HK Epoxy Seal (flexible epoxy floor membrane)
- HK Epoxy Coat (flexible epoxy wall membrane)

Both materials are cream-coloured, somewhat rubbery membranes with a shiny, smooth surface finish.

A range of ARDEX adhesives was trialled with and without Ardex P9 primer.

### ARDEX ADHESIVES EVALUATED

The following Ardex systems were examined for potential suitability with the two types of membrane supplied.

These cement-based adhesives are deformable (rated S1 or S2) and have sufficiently high polymer content (and/or mixed with ARDEX E90) to provide a more effective adhesive bond.

Not all the tested products produced results that ARDEX considers having an acceptable safety factor. Therefore, they are neither recommended nor have conditional recommendations due to less effective performance due to the fully immersed testing component. The recommendations for these adhesives are based on areas commonly waterproofed according to the standard AS3470 but not subjected to constant wetting (i.e., bathroom floors vs shower enclosures).

We also note that ARDEX epoxy adhesives bond to the surface of HK Epoxy membranes.



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| HK Product             | Primer   | Adhesive  | Class of adhesive |
|------------------------|----------|-----------|-------------------|
| Epoxy Coat<br>(Walls)  | P9       | X77       | C2S1              |
|                        | No prime | X77       | C2S1              |
|                        | P9       | X10       | C1S1              |
|                        | No prime | X10       | C1S1              |
|                        | P9       | X52       | C1S1              |
|                        | No prime | X52       | C1S1              |
|                        | P9       | X56       | C1S2              |
|                        | No prime | X56       | C1S2              |
|                        | P9       | MPP       | C1S2              |
|                        | No prime | MPP       | C1S2              |
|                        | P9       | Abaflex   | C2S1              |
|                        | No prime | Abaflex   | C2S1              |
| HK Product             | Primer   | Adhesive  | Class of adhesive |
| Epoxy Seal<br>(floors) | P9       | X77       | C2S1              |
|                        | No prime | X77       | C2S1              |
|                        | P9       | X77 + E90 | C2S2              |
|                        | No prime | X77 + E90 | C2S2              |
|                        | No prime | X18       | C2S1              |
|                        | P9       | X52       | C1S1              |
|                        | No prime | X52       | C1S1              |
|                        | P9       | X56       | C1S2              |
|                        | No prime | X56       | C1S2              |
|                        | P9       | Abaflex   | C2S1              |
|                        | No prime | Abaflex   | C2S1              |

## RECOMMENDATIONS

The following adhesive system recommendations are made; note that some of the nominated adhesives have adhesion properties equivalent or superior to those tested and, therefore, can be considered acceptable.

The Ardex epoxy adhesives ARDEX WA100 and ARDEX WA (unsuitable for stone tiles) are R1 adhesives. They can be used for all the nominated applications; no priming is required. Ardex S28N+E90 is C2S1, and Optima is C2S2.



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### HK EPOXY COAT ON INTERNAL WALLS

| Product Application   | Ardex S28N + E90 | Ardex MPP | Ardex X10 + E90 | Ardex X18 + E90 | Ardex X77 | Ardex X77 + E90 | Ardex Abaflex | Ardex X52 | Ardex X56 | Ardex Optima |
|---|------------------|-----------|-----------------|-----------------|-----------|-----------------|---------------|-----------|-----------|--------------|
| Splashbacks on masonry, plasterboard and fibre-cement sheet.  | ✓                | ✓         | ✓               | ✓               | ✓         | ✓               | ✓             | ✓         | ✓         | ✓            |
| Wet area walls not subjected to constant wetting. Masonry, plasterboard and fibre-cement sheet.       | ✓                | ✓         | ✓               | ✓               | ✓         | ✓               | ✓             | ✓         | ✓         | ✓            |
| Wet area walls subjected to constant wetting (showers). Masonry, plasterboard and fibre-cement sheet. | ✗                | ✗         | ✗               | ✓               | ✗         | ✓               | ✗             | ✓         | ✗         | ✓            |

The use of Ardex P9 primer is acceptable for these applications.

### HK EPOXY SEAL ON INTERNAL FLOORS

| Product Application  | Ardex S28N + E90 | Ardex MPP | Ardex X10 + E90 | Ardex X18 + E90 | Ardex X77 | Ardex X77 + E90 | Ardex Abaflex     | Ardex X52 | Ardex X56 | Ardex Optima |
|--|------------------|-----------|-----------------|-----------------|-----------|-----------------|-------------------|-----------|-----------|--------------|
| Wet area floors not subjected to constant wetting. Masonry, standard 15-18mm compressed fibre-cement sheeting. | ✓*               | ✗         | ✓*              | ✓*              | ✓*        | ✓*              | ✓*<br>Requires P9 | ✓*        | ✓*        | ✓            |
| Wet area floors subjected to constant wetting (i.e., showers) Masonry, standard                                | ✗                | ✗         | ✗               | ✓*              | ✗         | ✓*              | ✗                 | ✗         | ✗         | ✓            |



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|  |    |   |   |    |   |    |   |   |   |   |
|--|----|---|---|----|---|----|---|---|---|---|
| 15-18mm compressed fibre-cement sheeting.  |    |   |   |    |   |    |   |   |   |   |
| Wet area floors not subjected to constant wetting<br>Fibre-cement sheeted sheet timber | ✓* | ✗ | ✗ | ✓* | ✗ | ✓* | ✗ | ✗ | ✗ | ✓ |

\* The use of Ardex P9 primer is acceptable for these applications.

All products shall be installed per product datasheets and packaging, and tiling will be performed following AS3958-2007.

#### **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 for specific applications/installations, contact your nearest Ardex Australia Office.

#### **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.

#### **REASON FOR REVISION-ISSUER**

Content review, change of company slogan and address

#### **DOCUMENT REVIEW REQUIRED**

**24 months or whenever third-party suppliers change their recommendations.**

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