

## TECHNICAL BULLETIN – TB120

# WHY ARDEX PREMIXED TILE ADHESIVES ARE NOT RECOMMENDED OVER ARDEX WATERPROOF MEMBRANES

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### INTRODUCTION & SCOPE

A commonly asked question is can we use premixed adhesives with the waterproof membrane? Assuming that the membrane is in fact capable of taking an adhesive and bonding successfully, the choice of tile adhesives is restricted to cement based materials. Premixed and mastics are not suitable for use with membranes and this bulletin explains the issues.

### QUALIFICATIONS

The membranes that are assumed to be the substrate for tiling in this discussion are; ARDEX WPM001 SUPERFLEX PREMIXED BATHROOM & BALCONY or ARDEX WPM002 SUPERFLEX TWO PART, ARDEX WPM155, ARDEX WPM300 HYDREPOXY and WPM368. These membranes are suitable for tiling over with appropriate ARDEX adhesives.

However, this bulletin does not apply to ARDEX WPM157, WPM610 TPO or SHELTERBIT systems which are not tiled. It also does not apply to ARDEX BUTYNOL<sup>®</sup> or WPM750 / WPM1000 Ecobutynol which have special procedures.

Application to third party membranes is only recommended where they have been tested by ARDEX and found to be suitable substrates, complying with the adhesion requirements of the Australian Standard for tile adhesives and waterproof membranes.

### PREMIXED ADHESIVES, WHY ARE THEY UNSUITABLE?

Tile adhesives dry by two basic mechanisms; physical evaporation of water or chemical reaction which is normally cement hydration. The premixed or mastic type of adhesive dries by evaporation of the carrier water which allows the synthetic polymer to harden. In order to do this, the water must be allowed to escape into the substrate, and also to some extent into the tile surface. Applying these adhesives to a membrane prevents the water escaping into the substrate, and this problem can be compounded by using a non-porous or vitreous tile. Since the water is trapped, the adhesive does not cure and remains soft, leading to moving or de-bonding tiles.

Note: Grout lines do provide a route for escape, but this can take a long time and wet weather or high humidity makes the duration longer.

ARDEX adhesives that fall into this class, and are therefore not recommended over membranes include, ARDEX D1, ARDEX D2 and ARDEX D5. These adhesives will stick to the membrane, but take a long time to cure, more so in cold conditions.

*In the case of D2 the product information does permit bonding on membranes provided the tiles are highly porous.*

### CEMENT BASED ADHESIVES

The other major class of tile adhesives rely on the chemical reaction of Portland or other similar cements and water or a polymer emulsion. With these adhesives, the amount of water/liquid recommended for mixing is the amount required for this reaction, and a bit for workability. The escape of free water is not required for curing and so when applied to the membrane, even with non-porous tiles, the tile adhesive will harden normally and provide a bond. Any residual water then escapes over time through grout lines and any porosity in the tile.



ARDEX cement based adhesives that are suitable for use over ARDEX membranes include ARDEX ABAFLEX, ARDEX X52, X51, X56, ARDEX STS8W, X77, X10, X18, ARDEX OPTIMA and ARDEX MPP.

#### **WHAT CAN BE DONE WHERE A PREMIXED-MASTIC HAS BEEN USED?**

In this case the options are;

- Wait and see if the adhesive will cure. This depends on the tile porosity and weather conditions. It may take several weeks or more.
- Remove the tiles and clean them before the adhesive can harden on the tile back or on the wall.

Where a third party membrane has been used, ARDEX recommends that the manufacturer of that membrane be approached to obtain a recommendation of suitable adhesives.

For more information the following references may be of assistance.

#### **References**

ARDEX Technical Services - Technical Bulletin TB113, Not all waterproof membranes are made the same.

This bulletin discusses the types of membranes currently available and tiling solutions.

ARDEX Technical Services - Technical Bulletin TB077, Installation of Butynol membrane and the direct bonding of tiles.

The use of ARDEX OPTIMA, the specific adhesive for this waterproofing membrane system.

#### **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**

24 month review. Addition of D5 and X51. Deletion D11.

#### **REVISION REQUIRED**

24 months from issue

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