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TECHNICAL BULLETIN – TB222

AN OPINION CONCERNING THE USE OF SEALERS AND ARDEX ADHESIVES AND THE DIFFERENCE BETWEEN SEALERS AND WATERPROOFING MATERIALS

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INTRODUCTION & SCOPE

Numerous inquiries have been made concerning tile sealers, particularly the six-sided sealing of stone tiles before installation. The following discussion gives ARDEX's opinion and position toward using sealers and whether they are applicable for use with ARDEX tile adhesives.

USE OF SEALERS WITH ARDEX ADHESIVES

ARDEX has examined the use of various stone and tile sealers (from a range of manufacturers) with a variety of different types of tiles. The purpose of doing this was to determine whether these sealers interfered with the performance of the adhesive, particularly in damp environments. ARDEX understands using sealers is common, but a customer's understanding of their interaction with tile adhesives is minimal. It is also an ARDEX requirement that substrates must be prepared and free of contaminants; this also applies to the properties of the tiles and anything that might function as a bond breaker for the adhesive.

Evaluation was done on various sealers to determine adhesion compatibilities with ARDEX cement-based tile adhesives such as ARDEX Abaflex, ARDEX X18, and ARDEX X77, as well as epoxy adhesive ARDEX WA100. The evaluation request usually comes from major chemical manufacturers and is submitted by customers (normally stone suppliers). The test results have been highly variable between products regarding what causes bonding problems and what does not. It has been noted that results were not ideal after immersion (done to ISO13007-AS4992 or ARDEX's internal oblique shear method). The testing often reflected poor tensile bond results (the minimum allowed being 0.5MPa) and unsatisfactory oblique shear test results.

Based on this outcome, ARDEX did not recommend using sealers with ARDEX adhesives. The exception is where the sealer is tested with the proposed adhesive and found to pass the requirements, but it must also pass such that it has a margin of safety. Where sealers are used without our prior agreement, adhesive performance warranties are voided.

GENERAL PROPERTIES OF SEALERS, ARE THEY WATERPROOFING?

ARDEX often conducts trials with sealing products for topical application to tiles and stone and examines their use with specialized flooring systems.

The main use of these sealers is to stop short-term staining. Testing is performed to check whether a material (i.e., coffee, red wine, sauce, Coca-Cola™, and so on) will produce a stain within a short period (up to 24 hours maximum). ARDEX does not test for long-term immersion or continuous exposure because the suppliers of the sealers do not intend such use. This can be seen from examining the sealing product literature and datasheets. Long term exposure to constant dampness is not what these materials are designed to prevent. Test results have shown that prevention of staining is difficult to achieve, with longer exposure likely to cause an unsatisfactory outcome.



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The concept of waterproof vs water resistant (typically constrained by the definitions in AS4858 and AS3740) is important. These standards refer to the installation of waterproofing membranes and their required properties.

Australian Standard AS3740:

1.4.24 Waterproof (WP)

The property of a material that does not allow moisture to penetrate through when tested in accordance with AS/NZS 4858.

A reference to AS4858 shows a range of tests that membranes must pass, and penetrative sealers are not tested this way. They would not comply with cyclic movement requirements as they are not intended to form a film and could not be appropriately tested.

1.4.26 Water resistant (WR)

The property of a system or material that restricts moisture movement and will not degrade under conditions of moisture.

These two statements define the difference between materials that can be used as waterproofing membranes and those that are only water resistant.

The stone sealers tested by ARDEX are described as water resistant and are, therefore, not intended to be waterproof or act as true waterproofing membranes. Their purpose is to stop marking. These sealers are not designed for long-term moisture exposure or long-term exposure to staining materials. They are not intended to prevent rising dampness or sideways moisture transmission from other areas.

AS3740 covers waterproofing of wet areas. It requires waterproofing membranes even when the substrates are water-resistant. When ARDEX produces a site-specific waterproofing recommendation, the system is designed to stop water from getting out of the wet location and causing collateral problems. Waterproofing membrane systems, not sealers, are recommended for this application. A waterproofing system (if installed correctly) should protect all that is outside the area that has been waterproofed.

Sealer application is not considered a substitute for correct waterproofing installations. Retrospective application of a sealer to rectify existing problems will not be successful.

The safest option is to ask the sealer suppliers what their products are intended to do. A system could then be designed for waterproofing and topical stain prevention.

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.

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