

TECHNICAL BULLETIN – TB237

TEN COMMON MISCONCEPTIONS

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INTRODUCTION & SCOPE

ARDEX has been operating a technical services advisory system since late in 2002. In that time we have encountered many questions and comments, a few of which are based on urban myths or misconceptions. The critical point is that these incorrect ideas have led to numerous problems.

This bulletin looks at what we think are the top 10 erroneous beliefs, the negative effects they have, and what the counter arguments are.

THE MYTHS

These myths are not in any particular order.

- 1) **You don't need to do surface preparation, the primer will fix the bond problem; which is usually phrased as, 'haven't you got a primer that can go over the residues'.**

What is the problem with this request? At face value it seems a valid question, because there is a misconception that when the overlying applied material lets go, it is because it hasn't bonded to the residues, but a primer will stick it all together.

The reality is that the primer might help the applied adhesive/smoothing cement/membrane adhere to the residues, but that does not mean the residues will remain bonded to the substrate. We commonly see complaint materials with primer and residues on the bottom face!

- 2) **All waterproof membranes are the same, 'what tile adhesive have you got in the range to stick to a polyurethane'?**

The problem here is very simple, but the answer is based on complex chemistry and surface properties.

Part of the answer is that membranes are not all the same, and there are a wide range of base chemicals used. In terms of urethanes and polyureas, these membranes contain a very stable cross linked polymer which does not easily form a chemical bond with the adhesive, and has a physically tight surface which does not promote a mechanical bond with the adhesive.

The second part of the answer is simply that ARDEX does not supply recommendations for applying adhesives over polyurethane or polyurea membranes, and we don't give recommendations in general for non-ARDEX membranes because we don't know what is in them and whether they will work with ARDEX adhesives. A primer to permit sound bond over urethanes is the industry holy grail.

- 3) **'We want to put a smoothing cement over a waterproof membrane because we didn't fix the falls first. Can we use 'Ardit' to create the falls'?**

There are two things to consider with this question. The first one is that ARDEX doesn't recommend smoothing cements (with two exceptions) over waterproof membranes because the smoothing cement often develops cracks, and can lift the membrane off the substrate.

The second point is that nearly all of the ARDEX internal smoothing cements (generically called 'Ardit') are intended for dry internal applications, or protected applications, and so will not give long term performance when exposed to constant damp on top of the membrane. The only exceptions that can be used over ARDEX compatible membranes are Ardite NA for many sorts of applications and Feather Finish (under vinyl flooring).

- 4) **'We have put vitreous tiles onto shower wall with your premixed adhesive, and the tiles are loose, there is something wrong with the adhesive and it hasn't dried'. Closely related to this is, 'the premixed adhesive hasn't stuck to the membrane'.**

The answer is very simple, and it is purely a case that premixed adhesives form a bed by water escaping (dehydration) from the paste suspension. The dispersed polymer minus the water forms a continuous matrix and hardens to a strong bond.

When these adhesives are used with non-porous vitreous tiles, and are placed over the normally waterproofed shower walls, the water in the adhesive has nowhere to go and stays in the matrix. The adhesive stays soft and effectively uncured, and the tiles move, fall off or don't develop a strong bond to the surface. Ironically, if the adhesive dries, it commonly forms a very strong bond with acrylic, SBR and hybrid acrylic/urethane membranes. The simplest solution is to use a cement based adhesive.

5) All sealers are the same. 'We have used XYZ sealer from the hardware shop and which adhesive can we use to stick tiles onto the wall'?

The perception here is that all primers and sealers are the same thing, that they are sort of an afterthought, and really not that essential so anything will do.

The reality is that primers can be very different beasts, and it only requires a quick look at the ARDEX primers; WPM265, WPM270, P9, P82, P51 and Multiprime to see that they are very different materials and have different properties.

The purpose of ARDEX primers is basically to prepare the surface for the overlying material, but in some cases they interact with what has been applied over them as well.

There are many different chemicals out there in the market used as a base for primers and it is certain that some of the primers or sealers are not compatible with ARDEX products.

Therefore, users need to stick with the systems approach and use compatible materials and not become home chemists to mix and match.

6) 'The floor is old and dry and we don't need a moisture barrier'.

Do you really know this is true? Has anyone done even a simple test such as placing a sheet of plastic on the floor and seeing if moisture appears? Is the slab below grade, is the plumbing leaking, has the vapour barrier under the slab failed? When in doubt get it tested, or simply bite the bullet and install a moisture barrier on the surface.

7) When something goes wrong on a job, it is always that, 'your product has failed', or 'I have been in the trade for lots of years and this has never happened before', or 'I followed all the instructions and your product has not worked'.

The first response of customers when there is a problem, seems to be that the product has failed. There does not seem to be any recognition of the fact that after production, all material batches are quality tested before being released, and that the sorts of defects often seen on site, if indeed product quality problems, would be glaringly obvious to quality control.

The simple reality is that complaints can nearly always be traced back to failures to read the product literature, prepare surfaces, use the correct primers, mix and use the material correctly, detail the job properly, correct moisture problems or use the products for the wrong purpose and in the wrong system.

The properties of products change and the procedures evolve over time. When in doubt, read the literature or attend a training day to learn something new. Ask yourself, did you really follow the instructions correctly?

8) We have fibre-cement 'blueboard' on the walls and want to tile on it, what is the correct adhesive?

This question is so common, but shows the underlying misunderstanding in the market place about the uses various substrates are intended for by their manufacturers. In the case of 'blueboards' these are all intended to be used for texture coating and renders.

They are not designed to be tiled and not engineered for this purpose. Fixing of large and heavy stone tiles on these surfaces is at best risky, and in cyclonic areas could be fatal.

The underlying argument is that when specifying for a job, it is the responsibility of the person designing the job to make the right choices for all the components.

9) Surface preparation. 'The surface seemed ok, and hard enough to take the topping', or 'we have done some grinding before we applied the material'.

There are sound surfaces and there aren't. As a general rule of the thumb, for normal floor substrates such as concrete, it is expected that the minimum tensile strength will be $\geq 1.5\text{MPa}$ for the body of the concrete. However, all sorts of things can affect this, such as laitance, rain damaged concrete, surface mechanical damage, curing compounds, old toppings and so on, and these weak materials have to be removed.

It may simply be not good enough to look at a floor and say 'she'll be right'. In fact, the safest process before applying anything to the substrate is to engage in some type of mechanical preparation. That being said, just running a grinder over a floor may not be



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sufficient; the surface has to be completely worked over and it is just not good enough to grind 60 or 70% of the surface and leave untouched areas in between. It has to be more like 90% ground and to achieve a surface texture that is open and porous and has a profile equivalent to at least CSP3.

10) **Adding extra water to the mix above the recommended level improves mixing and helps achieve better flow, handling, working time or coverage.**

This is an old favourite and crops up all the time. Cement based products have an optimal water ratio which is designed to react the cement, and create the correct handling properties for the products. What happens in the field though, is that often the water ratio is not measured properly at all, or it is deliberately exceeded because it is believed this will help the mixing, flow, spreading, final finish, improve the working time in warm weather, and will finally add more bulk and reduce material consumption.

However what it really does is completely upset the physical properties of the material and alters the chemistry. Overwatered materials take longer to dry, are weaker and softer, shrink more, are more likely to separate out and do not perform as expected. They are normally easy to identify in a complaint.

In summary, there a lot of other issues and incorrect beliefs that can appear from time to time, other examples such as not waiting for the primer or membrane to be fully dry prior to tiling, adding third party additives to tile adhesives and grouts and then complaining because drying is delayed/accelerated or there is colour variation or the grout is too sticky to use; a more worrying one is to mix epoxy grout with more cement to stiffen it up or the recommendation to use WPM300 over bitumen prior to applying new membrane or tiles.

In all cases they are based things that are not understood or ignored by marketplace, but all have led to problems which could have been avoided. Ignorance is not bliss.

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 or ARDEX New Zealand Office.

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REASON FOR REVISION - ISSUER

24 month review

DOCUMENT REVIEW REQUIRED

5 years from issue

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