

TECHNICAL BULLETIN – TB109

APPLYING ARDEX RAPID CURE PRODUCTS IN HOT WEATHER

Date, Friday, 20 September 2013

INTRODUCTION & SCOPE

With the warmer weather in spring to early autumn months, fast setting and rapid cure products can exhibit relatively short pot lives and working times. Sometimes these properties can trick installers into taking ‘home grown remedial’ actions, that whilst appearing to improve the product handling, in reality degrade product performance.

The products that can exhibit these effects are the tile adhesives ARDEX X56, ARDEX QUICKBOND, ARDEX S16 and also some of the fast setting levelling products, notably ARDEX A55, ARDEX A45 and ARDEX FEATHER FINISH. These are fast setting or rapid setting products and they should be handled differently compared to normal setting materials especially in summer.

More detail on hot and cold weather effects can be found in Ardex Technical Bulletin TB097.

WHAT HAPPENS AND WHY?

Curing due to self heating

Products such as S16, A45 and FEATHER FINISH will quickly start to go hard and become unworkable in the bucket. The chemical reactions involved in the curing of the product generate heat and this is called an exothermic reaction. Where a larger amount of material has been mixed in a bucket, this generated heat can be quite significant and can cause a run away reaction which makes the contents of the bucket set prematurely (for example large quantities of curing ARDEX K15 left in steel garbage bins can be too hot to touch).

Auto catalysis

When partly cured or poorly mixed material is left adhering to the sides of the mix bucket, this can catalyse (encourage) the cement base in any subsequent freshly mixed material to react more vigorously and so cure prematurely.

Pseudo thickening

The tiles adhesives X56 and QUICKBOND have a special rheology (flow characteristics) to assist easy mixing, followed by stiffening to prevent slumping and so eliminate lipping, and this can lead to them showing a 'pseudo thickening effect'. This makes the product look like it has thickened and reached end of its pot life, but actually is still ok to use.

What the users do

The usual response by users to these symptoms is to add more water to the mix in an attempt to make the material more workable. This has the effect of over watering the product and making it weak, as well as altering the drying properties.

Products such as A55, A45, S16 and FEATHER FINISH have the ‘ARDURAPID’ effect, so added excess water is not tied up in the cement setting reaction, but then



has to evaporate later, maybe over several days. For flooring products under vinyl, or tiles that are moisture sensitive, this completely negates any fast tracking advantage that would normally result from using them.

SOLUTIONS

To avoid these problems, Ardex suggests the following solutions –

- ✓ Store materials under the cover and avoid direct exposure to the sun.
- ✓ Avoid working in the hottest parts of the day when possible. For smoothing cements, refer to AS1884-2012 which recommends between 15°C and 30°C for flooring installation.
- ✓ Use cold (or iced water) to mix the material on hot days (whenever possible).
- ✓ Mix no more than half bag of tile adhesive at a time, or small quantities of A45 and FEATHER FINISH.
- ✓ Once mixed, pour the fluid tile adhesives on the floor where it is to be applied, then trowel a small area at a time. This will minimise the heat generation and won't affect the skin/open time.
- ✓ Keep the mixing bucket as clean as possible by scraping out the set materials from previous mix, then mixing the new batch.
- ✓ Where X56 and QUICKBOND ADHESIVE show 'pseudo thickening', all you need to do is re-stir the mix (manual mix will do) and it will be workable again.

CONCLUSION

The issues that can occur with rapid set materials in hot weather can be remediated by simple procedures such as those listed above, and at the same time preserve the performance properties of the products.

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. Slight wording change to refer to AS1884-2012.

REVIEW PERIOD

24 months from issue.

NSW 02 9851 9100, **QLD** 07 3817 6000, **VIC** 03 8339 3100, **SANT** 08 8406 2500, **WA** 08 9256 8600
New Zealand (Christchurch) 64 3384 3029
Technical Services 1800 224 070.

Web: <http://www.ardex.com> <http://www.ardexaustralia.com> email: techinfo@ardexaustralia.com

