TECHNICAL BULLETIN – TB141

APPLICATION OF SMOOTHING CEMENTS OR SCREEDS OVER WETSEAL POLYESTER-FIBREGLASS-EPOXY TOPCOAT WATERPROOFING SYSTEM

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INTRODUCTION & SCOPE

The Wet Seal hybrid polyester-fibreglass base and epoxy topcoat water proofing system is commonly applied to concrete substrates to provide a waterproof membrane for wet areas.

The normal order of installation sees the sub-floor being smoothed or falls created prior to membrane application, however in some circumstances the opposite occurs and a smoothing cement is applied to the membrane.

This technical bulletin describes the procedure for applying Ardex LQ92 and Arditex smoothing cements, or a sand-cement screed over this WetSeal System.

QUALIFICATIONS

This procedure using LQ92 (with or without Abalastic) applies only to masonry sub-floors such as concrete, and Compressed Fibre-Cement Sheeting.

For small waterproofed 'wet area' particleboard or plywood timber subfloors, Arditex can be used provided the subfloor is solid and fixed to provide a rigid base, with deflections less than $1/360^{th}$ of the span distance of the floor joints. Where large format tiles are to be installed the deflection should be less than $1/500^{th}$ of the span distance.

In larger floor areas where there are unfilled sheet joints or joints are not installed with bond breakers, should the flooring flex, then cracking can appear in Arditex over these joints and this can 'telegraph' through grout lines.

Arditex must not be placed directly onto un-waterproofed timber substrate for wet areas, and tongue groove type strip timber flooring is not suitable for this application.

This procedure *does not* apply to the other Ardex Smoothing Cements; A55, K80, K15, K10, K11, K301, A45, A46, K1, K12 or Feather Finish.

This procedure *does not apply* to Wet Seal flexible membranes or polyurethanes. It only applies to the fibreglass base coated with WetSeal Topcoat 300.

PROCEDURE FOR NON-HEATED SUBFLOORS

1) The surface of the Topcoat 300 (TC300) is cleaned free of any loose material or dust.
2) A fresh coating of WetSeal TC300 or Ardex WPM300 Hydrepoxy is mixed as per the product instructions and applied to existing surface. The coverage rate required is $5m^2$/litre or a *wet* film thickness of 200μm (0.2mm). Whilst the coating is still wet, clean and dry sand (0.3mm) is broadcast over the surface. A coverage of at least 90% is required. After around 12hrs has elapsed, the excess sand is swept and vacuumed off the surface.
3) To the sand covered surface of the newly applied topcoat, the following screeds-smoothing cements can be applied –
    - A standard sand-cement screed mixed in the ratio of 3 parts washed sand to 1 part Portland cement. The performance of the screed can be improved with the addition of Ardex Abacrete (or Ardex WPM405) to the gauge water as per the product datasheet.

- Ardex LQ92 smoothing cement applied neat. (If extra resilience is required then the LQ92 is mixed with Ardex Abalastic additive, in the ratio of 2.5 litres of Abalastic diluted with 2.5 litres of clean drinkable water per 20kg bag of LQ92).
- Ardex Arditex mixed in accordance with the product datasheet.

4) Where falls are being created to a maximum of 30mm, or the build thickness exceeds approximately 12mm to maximums of 25-30mm the following 'bulk fill' mix designs are recommended.
    - Arditex NA can be mixed with an equal weight of 2-5mm or 3-8mm washed dry aggregate.
    - LQ92 can be mixed with an equal weight of 2-5mm washed dry aggregate, or for creating falls, approximately 10kg of washed dried sand 0.3mm in diameter per 20kg of LQ92 can be added.

      Note Ardex now supplies 25kg bags of 2-5mm aggregate giving a ratio of 1:1.25.
    - If the resulting textured surface requires smoothing, then neat Arditex or LQ92 2-3mm thick can be applied to the cured bulk fill. Where Arditex is used, the surface is primed with Ardex P51 primer diluted to 2:1 with water. Where LQ92 is used the primer is either Ardex Multiprime, or Ardex P51 diluted as for Arditex.
5) Where a smoothing cement has been applied, drying time to tiling is around 4-6 hours.

PROCEDURE FOR HEATED SUBFLOORS

1) The heating coils/matting are laid onto the TC300 base coat and then glued down with hotmelt glue dobs.
2) A fresh coating of WetSeal TC300 or Ardex WPM300 Hydrepoxy is mixed as per the product instructions and applied as a bonding bridge with broadcast sand as above. Care needs to be taken not to disturb the heating coils/matting during the rolling process.
3) To the sand covered surface of the newly applied topcoat, the following screeds-smoothing cements can be applied –
    - Ardex LQ92 smoothing cement applied neat (For extra resilience can be mixed with Ardex Abalastic additive, in the ratio of 2.5 litres of Abalastic diluted with 2.5 litres of clean drinkable water per 20kg bag of LQ92.
    - Ardex Arditex NA mixed in accordance with the product datasheet.
    - The thickness of the smoothing cement must be such that a minimum of 4mm is applied over the top of the heating coils. For example 4mm coils would require an 8mm thick bed of smoothing cement.

    The same general rules apply for creating falls as described above for non-heated subfloor.

APPLICATION OF TILES

1) After a minimum period of 4-6hrs tiles can be laid with any of the following Ardex-ABA tile adhesives;

    Abaflex, Ardex X56, for masonry and timber and

    STS8+Ardion E90 for masonry.

    The adhesive bed shall be laid with a 10mm notch trowel and 100% adhesive coverage is required.

2) The tiled surface shall be grouted with any of the following Ardex grouts used with Ardex Grout Booster; Ardex FG8, Ardex FSDD or Ardex WJ50.

COMMISSIONING THE HEATED FLOOR

It is important to recognise that sufficient drying and cure in the smoothing cement to lay floor coverings, is not the same degree of cure required before the floor heating is turned on.

ARDITEX and LQ92 are hydration products and initially dry, and then cure more slowly, especially in cold and wet weather (10-15^{0}C). The recommended curing time for these products is a minimum four (4) days. These products should not be applied below 10^{0}C. Do not apply any smoothing cements when the temperature will fall below 5^{0}C during the drying-cure period as the cure will be severely retarded, or maybe permanently compromised.

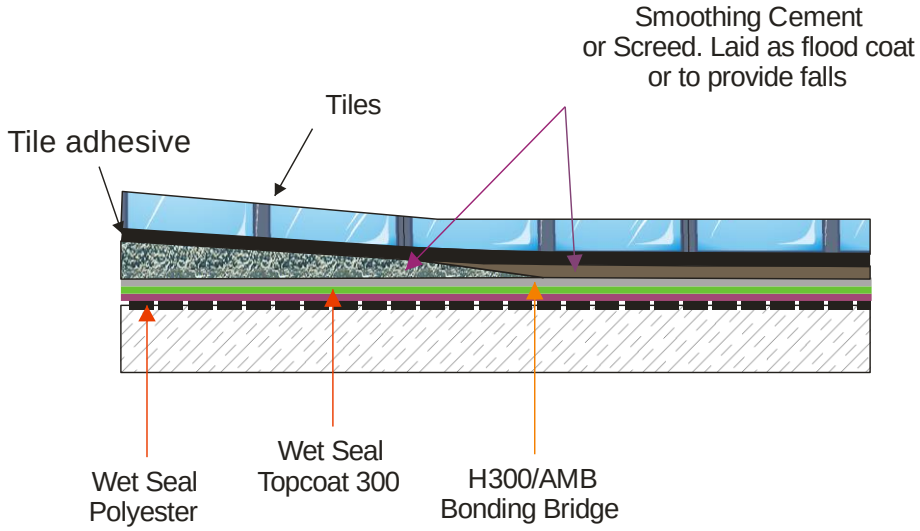
Allow tiled installations to cure for a minimum of 7 days before turning on the heating.

WHEN COMMISSIONING THE FLOOR, TURN HEATING UNIT ON BY INCREASING TEMPERATURE APPROXIMATELY 2^{O}C PER DAY UNTIL THE DESIRED TEMPERATURE IS REACHED.

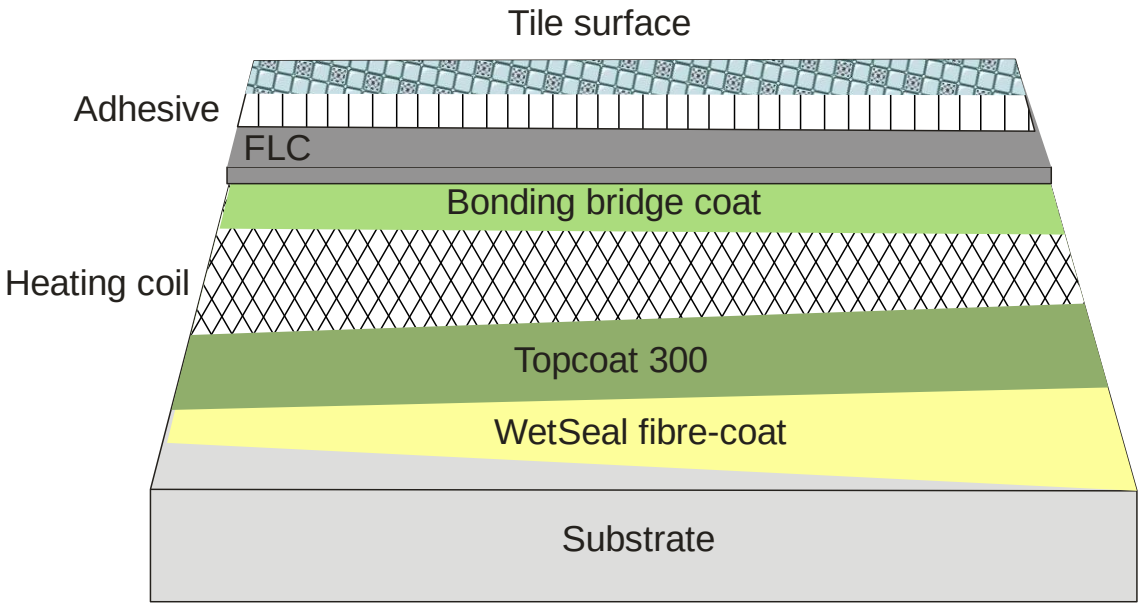
THE MAXIMUM RECOMMENDED TEMPERATURE IS 28^{0}C, AND DO NOT HEAT ABOVE 45^{0}C. THE FLOOR HEATING SHALL BE CONTROLLED WITH AN APPROPRIATE THERMOSTAT SYSTEM.

FAILURE TO OBSERVE THESE RECOMMENDATIONS MAY RESULT IN DE-BONDING OF THE TOPPING DUE TO THE DEVELOPMENT OF TENSILE STRAINS AT THE TOPPING-FLOOR INTERFACE. ENERGISING THE HEATING BEFORE ADEQUATE CURING IN THE SMOOTHING CEMENT CAN ALSO RESULT IN DEVELOPMENT OF EXCESSIVE TENSILE STRAINS IN THE SMOOTHING CEMENT ITSELF.
PROBLEMS WITH ADHESIVES AND EXCESSIVE MOVEMENT IN TILED FLOORS CAN ALSO RESULT FROM OVER-HEATING THE SUB-FLOOR.

Schematic diagrams



Example of a non-heated subfloor with smoothing cements and created falls.



Heated subfloor

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 THIS ISSUE
24 month review.

REVIEW PERIOD
24 months from issue.

NSW 02 9851 9100, **QLD** 07 3817 6000, **VIC** 03 8339-3100, **SA/NT** 08 8406 2500, **WA** 08 9256 8600
New Zealand (Christchurch) 643 384 3029
Technical Services 1800-224-070
Web: http://www.ardex.com, www:// Ardexaustralia.com, email: technicalservices@ardexaustralia.com