TECHNICAL BULLETIN – TB141

APPLICATION OF ARDEX LEVELLING COMPOUNDS AND SCREEDS OVER WET-SEAL WATERPROOFING SYSTEMS

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INTRODUCTION & SCOPE

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

The normal order of installation sees the subfloor being smoothed or falls created before 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 ARDEX Arditex NA levelling compounds or a sand-cement screed over this WetSeal System.

QUALIFICATIONS

This procedure using ARDEX LQ92 (with or without ARDEX 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, ARDEX Arditex NA can be used, provided the subfloor is solid and fixed to provide a rigid base, with deflections less than 1/360th of the span distance of the floor joists. Where large-format tiles are to be installed, the deflection should be less than 1/500th of the span distance.

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

ARDEX Arditex NA must not be placed directly onto an unwaterproofed 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, 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 Topcoat 300 (TC300) surface is cleaned free of any loose material or dust.
2) A fresh coating of WetSeal TC300 or ARDEX WPM300 Hydrepoxy is mixed as per product instructions and applied to the 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 12 hours have 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-levelling compounds can be applied –

- A standard sand-cement screed mixed in the ratio of 3 parts washed sand to 1 part Portland cement. The screed's performance can be improved by adding ARDEX Abacrete (or ARDEX WPM405) to the gauge water per the product datasheet.
- ARDEXLQ92 smoothing cement applied neat. (If extra resilience is required then ARDEX LQ92 is mixed with ARDEX Abalastic additive, in the ratio of 2.5 litres of AQRDEX Abalastic diluted with 2.5 litres of clean drinkable water per 20kg bag of ARDEX LQ92).
- ARDEX Arditex NA 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.
    - ARDEX Arditex NA can be mixed with an equal weight of 2-5mm or 3-8mm washed dry aggregate.
    - ARDEX 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 ARDEX 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, neat ARDEX Arditex NA or ARDEX LQ92 2-3mm thick can be applied to the cured bulk fill. Where ARDEX Arditex NA is used, the surface is primed with ARDEX P51 primer diluted to 2:1 with water. Where ARDEX LQ92 is used, the primer is either ARDEX Multiprime or ARDEX P51 diluted as for ARDEX Arditex NA.
5) Where levelling compound 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 glued down with hot melt glue dobs.
2) A fresh coating of WetSeal TC300 or ARDEX WPM300 Hydrepoxy is mixed according to the product instructions and applied as a bonding bridge with broadcast sand as above. Care must 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-levelling compounds 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 ARDEX 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 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.

   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 curing of the levelling compound to lay floor coverings is not the same degree required before the floor heating is turned on.

ARDEX ARDITEX NA and ARDEX LQ92 are hydration products that 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 at least four (4) days. These products should not be applied below 10^{0}C. Do not apply any levelling compounds when the temperature falls below 10^{0}C during the drying-cure period, as the cure will be severely retarded, or maybe permanently compromised.

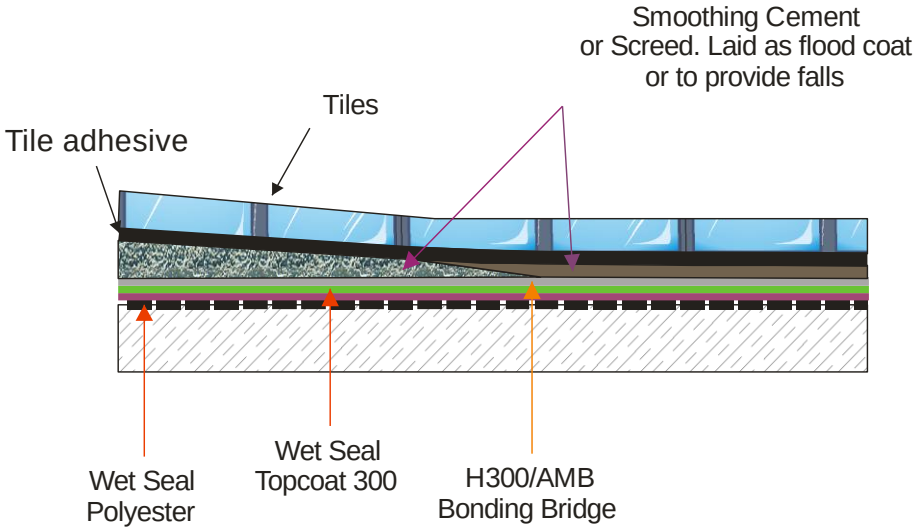
Allow tiled installations to cure for at least 7 days before turning on the heating.

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

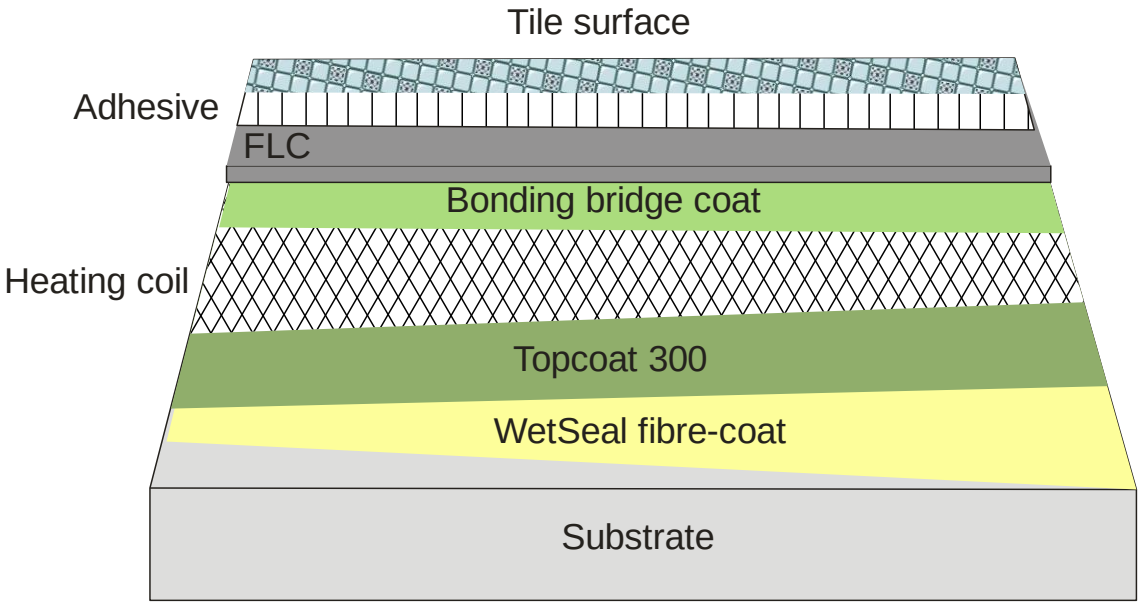
THE MAXIMUM RECOMMENDED TEMPERATURE IS 28^{0}C, AND DO NOT HEAT ABOVE 45^{0}C. THE FLOOR HEATING SHALL BE CONTROLLED WITH AN APPROPRIATE THERMOSTAT SYSTEM.

FAILURE TO OBSERVE THESE RECOMMENDATIONS MAY RESULT IN DE-BONDING OF THE LEvELLING COMPOUND DUE TO THE DEVELOPMENT OF TENSILE STRAINS AT THE LEVELLING COMPOUND/FLOOR INTERFACE. ENERGISING THE HEATING BEFORE ADEQUATE CURING IN THE LEVELLING COMPOUND CAN ALSO RESULT IN THE DEVELOPMENT OF EXCESSIVE TENSILE STRAINS IN THE LEVELLING COMPOUND ITSELF.
PROBLEMS WITH ADHESIVES AND EXCESSIVE MOVEMENT IN TILED FLOORS CAN ALSO RESULT FROM OVERHEATING THE SUBFLOOR.

Schematic diagrams



Example of a non-heated subfloor with smoothing cement 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.

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