

TECHNICAL BULLETIN – TB110NZ

APPLICATION OF ARDEX FLOOR SMOOTHING CEMENTS WITH TILING INSTALLATIONS

Date, Thursday, 9 October 2014

INTRODUCTION & SCOPE

A fairly common situation arises where a subfloor is to be tiled, and it is either not flat or has hollows and dips in it that need to be flattened out.

Ardex can supply complete systems for smoothing and then tiling for such subfloors, both rigid concrete, and flexible timber or Compressed Fibre Cement sheet (CFC).

In this bulletin we will discuss a number of such typical installations and the products that can be used.

CONCRETE SUBFLOORS

DRY-INTERNAL

Where the subfloor is dry internal, the choice of levelling materials is wide. The primary under tile levelling cement is ARDEX LQ92 and for bulk filling ARDEX K005. However, ARDEX K15, ARDEX K12 and ARDEX A45 can all be used in this application within their technical specifications.

WET-INTERNAL

For internal areas subject to water, the products to be used are ARDEX LQ92, ARDITEX NA and ARDEX K005 for bulk filling. (External areas requires the use of Ardex K301).

PREPARATION

Concrete subfloors must be sound, with no structural cracks or other defects.

Levelling and tiling shall not be done over structural or movement joints in the subfloor.

Concrete floors shall have all previous coatings removed, clean and free of oil, grease, wax, latex compounds, curing compounds, efflorescence, laitance, dust and all foreign matter, back to an open porous matrix of the concrete. Professional cleaning by mechanical means in line with sound building industry practices is advised including shotblasting, scarifying or diamond grinding to provide a surface profile of between CSP3 to CSP7. Non-porous concrete surfaces, such as highly burnished concrete, or dense concrete 35MPa must be roughened to provide an open porous matrix.

PRIMING & LEVELLING

The primer for normal porous concrete when using ARDEX LQ92 is ARDEX MULTIPRIME.

For the other Ardex smoothing cements, the primer for porous concrete is ARDEX P51 primer diluted 1:2 by volume with water applied in accordance with the product data sheet.

The Ardex levelling cements are mixed and applied in accordance with the product datasheets. After the appropriate drying periods, tiles can be applied.

TILING

The tiling is dependent on the amount of traffic, the degree of water exposure, thermal movement expected and most importantly the type of tile to be used. For more detailed information, or for special applications contact Ardex Technical Services.

A discussion of all the choices is outside the scope of this bulletin and this list is not exhaustive, but Ardex adhesives for typical domestic situations include on concrete and screeds –

<i>TILE TYPE</i>	<i>INTERNAL FLOOR – DRY</i>	<i>INTERNAL FLOOR – WET ♣</i>
<i>Mid absorbant - >1,5% <6% water absorption</i>	ABAFLEX X7 X56 ISOFLEX 2 PART SUPER TILESET	ABAFLEX X7 X56 SUPER TILESET
<i>Vitrified/Glass Mosaics <1.5% water absorption</i>	MPP OPTIMA X7 + ARDION E90 ABAFLEX	MPP OPTIMA X7 + ARDION E90 ABAFLEX
<i>Marble & Granite (not moisture sensitive types*)</i>	ABAFLEX X7 / X77 X56 ISOFLEX 2 PART SUPER TILESET S16	ABAFLEX X7 / X77 X56 SUPER TILESET
<i>Translucent Marble (not moisture sensitive types*)</i>	MPP OPTIMA S16W	MPP OPTIMA
<i>Slates</i>	ABAFLEX X56 ISOFLEX 2 PART	ABAFLEX X56

*Refer to Ardex Technical Services for recommendations concerning tiling with moisture sensitive natural stone.

♣ Wet areas may require membranes so applicators should check local requirements.

Grouting can be done with the cement based grout ARDEX FG8 GROUT, ARDEX FSDD or ARDEX WJ50.



TIMBER & CFC SUBFLOORS

Where a timber or Compressed Fibre-Cement subfloor requires levelling prior to tiling, the smoothing cement recommended is ARDEX ARDITEX NA.

Ardex recommends installation of smoothing cements over dry internal applications for timber. Wet internal applications require the usage of a membrane to protect timber subfloors which is outside the scope of this bulletin.

PREPARATION

Note: Particleboard/plywood flooring may be coated with a resin waterproof protective layer. This resin layer may act as a bond breaker to applied finishes and should be removed by sanding. Application over external timber subfloors is not recommended and Compressed Fibre-Cement Sheeting is required in this application.

Levelling and tiling shall not be done over structural or movement joints in the subfloor.

1. The subfloor should be solid and fixed to provide a rigid base with deflections less than $1/360^{\text{th}}$ of the span distance of the floor joints (Refer to TB218 for more details). Any boards exhibiting movement should be re-nailed and open joints should be filled with a suitable fast setting mortar.

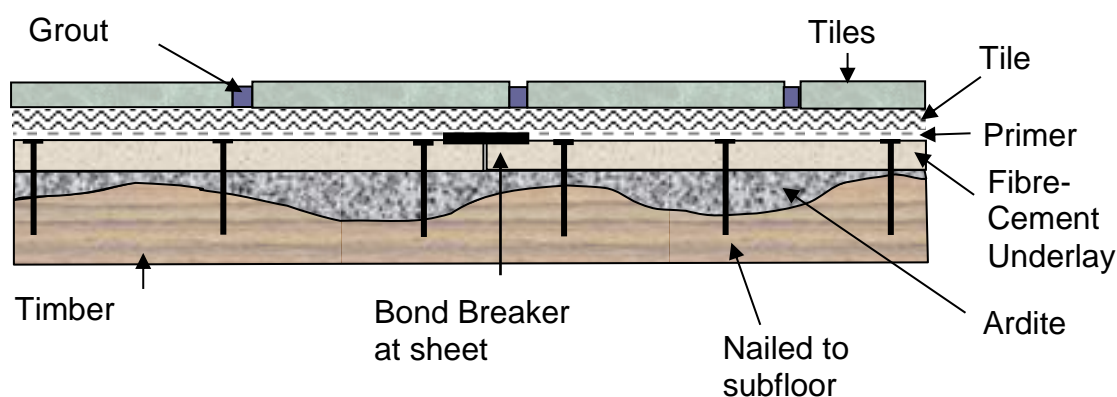
For internal floors using Compressed Fibre-Cement butt joints must be supported by a batten/joist etc., and firmly fixed in accordance with the manufacturer's installation recommendations to allow no movement. Sheets are to be adhered with WPM501 HYDREPOXY between panels.

Ensure that there is adequate cross-flow ventilation and that the minimum height clearance between earth and the timber flooring is maintained. Failure to have adequate ventilation can result moisture build-up under the subfloor which result in excessive floor deformation, mould growth or moisture permeation through the underlayment.

2. The subfloors must be clean and free of oil, grease, wax, old coatings etc. Sand the wooden subfloor, using a coarse abrasive, to remove all foreign matter and to provide a mechanical surface for the installation of ArditeX.
3. Subfloor shall be vacuumed to remove any dust or sanding debris.

PRIMING & LEVELLING

1. For dry applications, prime the timber or CFC with ARDEX P82 Ultraprime solvent free primer in accordance with the product data sheet. (CFC can also be primed with ARDEX P51 Primer diluted 1:1 with water).
2. Install ArditeX NA as per the printed technical data sheet, allowing the ArditeX NA to dry completely prior to installing flooring. This is typically around 24hrs, and can be extended at lower temperatures and high humidity. The recommended minimum thickness is 3mm. When installing over 8mm, the minimum recommended application temperature is 15-16 deg.C.
3. Where installing ArditeX NA and tiles over timber subfloors, it is recommended that the smoothing cement is used to flatten the surface and fill depressions. The ArditeX NA is then over-sheeted with fibre-cement tile underlay and the tiles adhered to this surface. ArditeX NA does develop cracks along the timber sheet joints when directly adhered to the floor, and these could transfer through to the grout lines above. The fibre cement sheet with a bond breaker tape apply to the joints can overcome this problem. The schematic below shows this detail.



TILING

Tiling on these flexible subfloors requires, the use of specialised adhesives to accommodate movements. The following table gives Ardex adhesives suitable for these applications. Refer also to TB168 and TB218 for timber floor.

<i>TILE TYPE</i>	<i>INTERNAL TIMBER FLOOR – DRY</i>	<i>INTERNAL CFC FLOOR - DRY</i>
<i>Highly absorbant - >1,5% <6% water absorption</i>	X56 ISOFLEX 2 PART	ABAFLEX ISOFLEX 2P X56 X7 + ARDION E90
<i>Vitrified/Glass Mosaics <1.5% water absorption</i>	X56 ISOFLEX 2 PART	ABAFLEX ISOFLEX 2P X56 MPP X7 + ARDION E90
<i>Marble & Granite (not Green Marble*)</i>	X56 ISOFLEX 2 PART	ABAFLEX ISOFLEX 2P X56 MPP X7 + ARDION E90
<i>Translucent Marble</i>	NA	OPTIMA S16W + ARDEX E90
<i>Slates Slates cont.</i>	X56 ISOFLEX 2P	ABAFLEX ISOFLEX 2P X56 X7 + ARDION E90

The tile adhesives are applied in accordance with relevant product datasheet.

Notes: Movement joints in tiled floors are installed to separate the tiled surface from fixtures such as columns and walls, subdivided large areas of tiled surface into smaller sections to allow for induced strains, and to interrupt the surface where construction and movement joints are positioned. Refer to AS3958.1.

GROUTING

Grouting between the tiles requires a flexible grout. The ARDEX FG8 GROUT, ARDEX FSDD and ARDEX WJ50 are suitable when used with ARDEX GROUT BOOSTER as per the product datasheets.

REFERENCES

Ardex has specific Technical Bulletins that can be used in conjunction with this bulletin.

TB015 describes procedures for levelling over timber subfloors.

TB029-TB195 discuss the application of levelling cements on heated subfloors prior to tiling.

TB030 concerns the application of FLC over Compressed Fibre Cement.

TB041 describes the requirements for surface preparation on different substrates.

TB050 talks about dealing with structural joints in subfloors.

TB168-TB218 covers methods for tiling on timber floors.

TB176 and 177 contain detailed on various tiling systems for heated subfloors.

Standard

AS3958.1 Ceramic tiles: Part 1: Guide to the installation of ceramic tiles.

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.

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 - ISSUER

24 month revision. Ardex K11.

DOCUMENT REVIEW REQUIRED

24 months from issue

Technical Services 1800 224 070. email: technicalservices@ardexaustralia.com
Australia <http://www.ardexaustralia.com>

NSW-HO 61 2 9851 9100, **QLD** 07 3817 6000, **VIC** 03 8339 3100, **SANT** 08 8406 2500, **WA** 08 9256 8600
Customer Service and Sales 1300 788 780

New Zealand Christ Church 64 3373 6900, Auckland 9636 0005, Wellington 4568 5949
Technical Inquiries NZ 0800 2 ARDEX New Zealand <http://www.ardex.co.nz>

Web: Corporate: <http://www.ardex.com>

