



SRO921 – TILING ON AGED CONCRETE – External Floors

SCOPE

This recommendation is regarding the installation of tile finishes to external, structurally sound, aged concrete floors and may include driveway areas that will be subjected to light vehicular traffic. This does not include applications subject to heavy traffic loads such as trucks, nor applications over weak, crumbly concrete substrates.

PREPARATION

Aged concrete floors may exhibit evidence of rising damp as well as a variety of cracks. The procedure begins by determining if the floor is structurally sound and suitable for adhesive fixed tile floor finishes. If the floor is deemed to be structurally sound (by an appropriately qualified person) with no vertical displacement of one side of the crack relative to the other, cracks in the floor may be treated by one of ARDEX crack injection systems or patching systems. Products such as [ARDEX RA 142](#) for crack injection and [ARDEX A 46](#) and [ARDEX BR 345](#) for patching would be ideal so please refer to the datasheets by following the hyperlinks provided.

Mechanically (i.e. by grinding, shot-blasting or scabbling techniques) prepare the surface to remove all contaminants such as concrete curing compound residues, residues such as old adhesive residues, plaster droppings, paint over-spray and/or laitance. Weak, crumbly aged surfaces are removed back to solid hard concrete. Steel trowel finished concrete should also be prepared to achieve a fine textured profile and open the pores/capillaries in the concrete surface. Vacuum to remove dust.

PRIMING

Prepared standard concrete substrates can be primed using water based primers such as [ARDEX Multiprime](#) or [ARDEX P 9](#). However concrete with a compressive strength greater than 35MPa shall be primed with [ARDEX P 9](#) or [ARDEX WPM 300](#) primer after mechanical preparation.

Aged concrete floors exhibiting rising damp can be treated with an ARDEX Moisture Barrier system that is compatible with the tile adhesives. These are the [ARDEX WPM 300](#) Hydroepoxy (2 part water borne epoxy) and the [ARDEX WPM 368](#) (1 part moisture barrier). These are both applied at not more than 3m² per litre per coat.

- The [ARDEX WPM 300](#) shall be applied in 2 coats with at least 4 hours drying between coats. As the second coat is applied ARDEX Primer sand is broadcast over the wet surface.
- The [ARDEX WPM 368](#) shall be applied in 2 coats with at least 2-4 hours drying between coats. This material already contains granular material as a key for the adhesives.



TILING

Tiles should be fixed in accordance with Australian Standard AS 3958. Type and size of the tiles determine the selection of the trowel. As a general guide, use at least a 10 x 10 x 10mm notch trowel for floor tiling. Achieve minimum 90% coverage. The tiles must be pressed firmly into the freshly combed mortar bed to ensure good contact with the mortar. Slide the tile at right angles to the notch pattern to ensure maximum coverage on the back of the tile. Tiles with ribbed or keyed back profiles should also be back-buttered to ensure complete coverage. Tiles greater than 400 x 400 mm should be back-buttered. Lift a tile from time to time to check appropriate coverage and that there are no voids beneath the tile. Any surplus adhesive must be removed from the surface of the tile and joints, before the adhesive sets. Do not spot fix.

The following table lists the adhesives to fix different tile types to the prepared concrete;

Tile type	Good	Better	Best
Porous Bodied Tiles Terracotta and Glazed Ceramic	X7 ; X10 ; X17	X18 ; X77	X78+E90 ; Quickbond+Abalastic
Glazed mosaic	X10 ; X17	X18 ; X77	X78+E90 ; Quickbond+Abalastic
Dense bodied tiles Vitrified/porcelain	X17 ; Abaflex	X18 ; X77	X78+E90 ; Quickbond+Abalastic
Natural Stone tile <i>Not sensitive to moisture from the adhesives</i>	X10 ; X17	X18 ; X77	X78+E90 ; Quickbond+Abalastic
Natural Stone Tiles <i>Moisture Sensitive</i>	WA100	Refer to ARDEX Technical Bulletin TB010	

Note : As an optional add-on, you can use [ARDEX E 90](#) with X7, X78, X77, X18 and X10 as detailed in **TB231**. This will greatly improve their performance and longevity.

Note: The adhesives for driveway tile installations need E90. They shall be ARDEX X7, X10, X18, X77 or X78 mixed with E90 as per **TB231**.



GROUTING

Once the adhesive has set, the tiles may be grouted with one of the following ARDEX grouts.

- [ARDEX FG 8](#) sanded grout for joints from 1 to 8mm is a general purpose grout available in a large range of colours.
- [ARDEX FS-DD](#) un-sanded grout for joints 1 to 4mm. This is recommended for polished tiles with rectified edges as the grout has a smooth finish and is available in a range of colours.
- [ARDEX WJ 50](#) sanded grout for joints 5 to 50mm.
- [ARDEX WA](#) Epoxy 2 part grout available in black, grey or white for installations where high standards of hygiene and/or chemical resistance is required.
- [ARDEX EG-15](#) Epoxy 3 part grout for installations where high standards of hygiene and/or chemical resistance are required. It is available in 8 colours and is suitable for grout widths ranging from 1.5 to 15mm.

Note: ARDEX cement based grouts may be mixed with [ARDEX Grout Booster](#) for increased performance such as resistance to water penetration, reduced potential for efflorescence, greater strength and flexibility.

MOVEMENT JOINTS

Movement joints are to be included in the new tile finish in accordance with the recommendations of AS3958. These joints are installed (but not limited to) in the following locations:

- Over all existing movement joints in the substrate
- At all internal corners/changes in direction in the plane of the substrate
- Along all perimeters where the tiles butt against walls and/or built in furniture
- Around all penetrations through the tile finish
- At not more than 4.5m intervals in both directions of a grid pattern

Movement joints should be at least 6mm wide and are filled with a flexible sealant such as the [ARDEX SE](#) silicone or [ARDEX ST](#) neutral cure silicone for natural stone. Compressible backer rods may be required in deeper joints to maintain the recommended sealant thickness at half the joint width.

Disclaimer:

The recommendation selected is based upon questions answered on the ARDEX Australia website. This recommendation is designed as a general application for your described situation and should not be considered site specific documentation for general distribution. Always consult the latest relevant ARDEX Technical Bulletins and information on the product packaging and/or product data sheets (available on the ARDEX Website). Australian and other relevant standards should be followed during installation. If you have any further questions or would like further clarification please contact the ARDEX Technical Services Hotline on 1800 224 070 (9am to 5pm Monday to Friday).