# SRO920 – TILING ON NEW CONCRETE FLOORS EXTERNALLY

## SCOPE

This recommendation is regarding the adhesive fixing of floor tiles over new concrete substrates externally and applies to both concrete that has completed the recommended (AS3958.1-2007) curing/drying period as well as new concrete that has not completed the recommended curing/drying period.

## Preparation

New concrete floors to be used as a substrate for tiling shall be constructed in accordance with AS2870 with regards to shrinkage control; or to AS3600 where appropriate. The external concrete shall also comply with the requirement of AS3958.1-2007 for the maximum variation in the plane of the concrete to be less than 10mm over 3m when using thick bed adhesives.

- For new concrete floors that have completed the recommended curing /drying periods 4-6 weeks. The surface shall be mechanically prepared (e.g. by grinding, shot blasting or scabbling) to remove all contaminants such as curing compounds, debris from other trades, waxy/oily residues and/or laitance, and to scarify smooth steel trowel finished concrete. Vacuum to remove dust prior to tiling.
- For new "green" concrete that has dried for a minimum of 7 days and less than 4-6 weeks, the concrete must be at least 20MPa compressive strength. The surface shall be mechanically prepared (e.g. by grinding, shot blasting or scabbling) to remove all contaminants such as curing compounds, debris from other trades, waxy/oily residues and/or laitance, and to scarify smooth steel trowel finished concrete. Vacuum to remove dust prior to tiling.

## PRIMING

Porous prepared concrete that has completed the recommended curing /drying period may be primed with **ARDEX Multiprime** or **ARDEX P 9** primer particularly when adhesive fixing tiles in warm dry conditions.

New prepared "green" concrete that has not completed the 4-6 weeks curing/drying period may be tiled with **mechanically strong (e.g. porcelain) tiles** using selected ARDEX adhesives but not with terracotta tiles or glass. In this instance the primer shall be **ARDEX WPM 368** or alternatively using **ARDEX WPM 300** with "sand seeding" to form a moisture barrier.

## TILING

Tiles should be fixed in accordance with Australian Standard AS 3958. The type and size of the tiles determines the selection of the trowel. As a general guide, use at minimum a 10 x 10 x 10mm notched trowel. 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 shall 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.

Suitable adhesives are in the below table;

| Tile Types | ARDEX Adhesives for Green Concrete External Substrates | ARDEX Adhesives for Fully Cured New Concrete External Substrates |
|---|---|---|
| *Porous Bodied Tiles*<br>Terracotta | No recommendation | X7 ; X10 ; X17 ; X18 ; Abaflex |
| Glazed Ceramic | Abaflex, X77+E90, X78+E90, X18+E90 | X7 ; X10 ; X17 ; X18 ; Abaflex |
| *Glazed Mosaic* | X77+E90, X78 +E90, Abaflex, X18+E90 | X10 ; X17 ; X18 ; Abaflex ; X77 |
| *Dense Bodied Tiles*<br>Vitrified/porcelain | X77+E90, X78 +E90, Abaflex, X18+E90 | X10 ; X17 ; X18 ; Abaflex ; X77 |
| Glass | No recommendation | X10 ; X17 ; X18 ; Abaflex ; X77 |
| *Natural Stone Tiles*<br>Excluding Moisture Sensitive stone | X77+E90, X78 +E90, Abaflex, X18+E90 | X10 ; X17 ; X18 ; Abaflex ; X77 |
| *Natural Stone Tiles*<br>Moisture Sensitive | No recommendation as tiles may be affected by moisture | WA100<br>(Refer to ARDEX Technical Bulletin TB010) |

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

### 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).*