



SRO922 – TILING ON SCREEDS EXTERNALLY

SCOPE

This recommendation is regarding the adhesive fixing of tiles to bedding screeds in external situations such as on patio decks & balconies

PREPARATION

Topping screeds are installed to smooth and/or raise floor levels to allow the tile finishes to finish flush with adjacent finishes. In addition, they are used to provide falls to prevent the ponding of water on the tile finishes.

The two main screed systems are bonded screeds or unbonded screeds.

- **Bonded** screeds range from a minimum 15mm thickness up to approx. 65mm thickness.
- **Unbonded** screeds (also known as self-supporting screeds) are a minimum thickness of 40mm thick ranging up to approx. 80mm thin thickness and must include welded wire mesh in accordance with the recommendations of AS3958. The mesh size is from 25 x 25mm up to 75 x 50mm and be fabricated from wire of diameter between 1.2 to 2.0mm.

Note: *'Chicken' wire mesh is not acceptable.*

Substrates suitable for bonded topping screeds include concrete, suitable compressed fibre cement sheeted floors and ARDEX under-tile waterproofing membranes. All surfaces must be dry and free of contaminants such as concrete curing compounds, old adhesive residues, waxy / oily residues, paint over-spray and weak surface materials such as laitance. Contaminants should be removed. Smooth steel trowel finished concrete should be scarified by mechanical means (e.g. grinding/shotblasting/scabbling) to achieve a fine textured surface with open pores. Bonded screeds are applied wet on wet to bonding bridge/slurry coats. They range from 15mm minimum thickness to around 60mm maximum thickness.

Substrates suitable for unbonded topping screeds include contaminated surfaces of concrete; timber floor boards; compressed fibre cement sheeting and floors that have applied coatings and/or waterproofing membranes that cannot be removed and which may be incompatible (e.g. bituminous sheet, TPO sheet or polyurethane) with the proposed new floor tile finishes. Unbonded topping screeds are applied over a double layer plastic (approx. 200-250 micron thick each layer with the top layer laid at right angles across the bottom layer) slip sheet system from a minimum 40mm to around 80mm maximum thickness and must include welded wire, galvanised mesh reinforcement. The mesh has apertures between 25 x 25mm, up to 75 x 50mm and is made of wire 1.2 to 2.0mm diameter as per recommendations of AS3958.



SCREED COMPOSITION

Standard Screed System: The screed shall be composed of 3 to 4 parts (by weight) washed sand 1 part cement and mixed with water. Improved screeds however can use [ARDEX Abacrete](#) or [ARDEX WPM 405](#) liquid additive diluted in water as per the product data sheet.

The bonding slurry for bonded toppings shall be [ARDEX Abacrete](#) (or [ARDEX WPM 405](#)) liquid additive mixed with Portland cement as per the product data sheet.

Optional Screed Systems: The [ARDEX A 38](#) and [ARDEX A 48](#) Rapid Set screeds are engineered screeds that may be used as a bonded screed onto prepared concrete at 15mm minimum thickness, or as an unbonded screed over a slip sheet system at a minimum 45mm thickness. The [ARDEX A 38](#) and [ARDEX A 48](#) screeds provide much higher strength than the standard sand/cement screeds and they do not require the additional steel reinforcing wire mesh when used as an unbonded screed. In addition, their rapid drying qualities allow the application of waterproofing membranes after 2-3 days drying. [ARDEX A 38](#) and [ARDEX A 48](#) must be installed in accordance with the instructions on the product data sheets.

Note: [ARDEX A 38](#) and [ARDEX A 48](#) screeds must only be applied as un-bonded over ARDEX Undertile waterproofing membranes.

APPLICATION

For bonded toppings, the slurry coat is broomed thoroughly over the prepared substrate to form a continuous wet film not more than 2mm thick. The mixed screed mortar is immediately placed over the still wet slurry coat and screeded to falls and levels as required.

For unbonded toppings, the mortar is placed directly onto the slip sheet to approx. 25mm thickness. The reinforcing mesh is embedded into the wet mortar with mesh overlaps (approx.150mm) wired together. The remaining mortar is then placed and screeded over the mesh to achieve the required thickness of 40mm or more.

Note: It is important the screed mortars are compacted regardless of whether or not the screed is bonded or unbonded.

WATERPROOFING

Waterproofing membranes compatible with the tile adhesives may be applied over the external screeds to prevent the penetration of water and reduce the potential for efflorescence. The following membrane systems may be applied:

- [ARDEX WPM 300](#) moisture barrier/ primer + [ARDEX WPM 155](#) (or [ARDEX WPM 002](#)) under tile membranes. This can be applied to dry or damp screeds.
- [ARDEX WPM 368](#) moisture barrier/primer + [ARDEX WPM 155](#) (or [ARDEX WPM 002](#)) under tile membranes. This can be applied to dry or damp screeds.



- [ARDEX WPM 750](#) / [ARDEX WPM 1000](#) sheet rubber membrane for dry screeds only.

The liquid applied waterproofing membranes must be left to fully dry prior to adhesive fixing the tiles.

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.

	Adhesives for screeds that have dried for a minimum of 16 hours only- no membrane	Adhesives for screeds that have dried for 7 days (min.) and/or use a waterproofing membrane
<i>Porous Bodied Tiles</i> Terracotta	No selection for terracotta or similar mechanically weak tiles	X10 ; X17 ; X18 ; X52
Glazed Ceramic	X18 ; Abaflex ; X77 ; X78	X10 ; X17 ; X18 ; X52
<i>Glazed Mosaic</i>	X18 ; Abaflex ; X77 ; X78	X18 ; X77 ; X78
<i>Dense Bodied Tiles</i> Vitrified/porcelain	X18 ; Abaflex ; X77 ; X78	X18 ; X77 ; X78
Glass	X18 ; Abaflex ; X77 ; X78	X18 ; X77 ; X78
<i>Natural Stone</i> (excluding moisture Sensitive natural stone)	X18 ; Abaflex ; X77 ; X78	X17 ; X18 ; X77

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



GROUTING

Once the new tile adhesive has dried for 24 hours the tiles may be grouted with a suitable grout. ARDEX grout ranges are as follows;

- [ARDEX FG 8](#) sanded grout for joints from 1 to 8mm and is a general purpose grout available in a 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 limited colour range.
- [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 are required.

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.
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Movement joints should be at least 6mm wide and are filled with a flexible sealant such as the [ARDEX SE](#) or [ARDEX ST](#) 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).