SRO903 – TILING ON INTERNAL TOPPING SCREEDS

SCOPE

This recommendation relates to tiling on internal sand and cement based topping screeds. These screeds are typically in internal wet areas but can be used anywhere there is a **structurally sound substrate** to support the weight of the applied screed.

PREPARATION

Topping screeds are installed to smooth and/or raise floor levels to allow the tile finishes 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 as bonded screeds or as un-bonded screeds.

- Bonded screeds are from a minimum 15mm up to approx., 65mm.
- Un-bonded screeds (also known as self-supporting screeds) are a minimum of 40mm thick up to approx. 80mm thick and will 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 is generally fabricated from wire of diameter between 1.2 to 2.0mm. *"Chicken" wire mesh is not acceptable*.

Substrates suitable for bonded topping screeds include concrete, suitable compressed fibre cement sheeted floors (check with manufacturer) 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 are best removed and smooth steel trowel finished concrete prepared, by mechanical means (e.g. grinding / shotblasting / scabbling) to achieve a fine textured surface with open pores. Bonded screed mortars are applied wet over still wet bonding bridge slurry coats from 15mm minimum thickness to around 60mm maximum thickness.

Substrates suitable for un-bonded topping screeds include contaminated surfaces of concrete; timber floor boards; compressed fibre cement sheeting and floors that have applied coatings and/or waterproofing membranes unable to be removed and which may be incompatible (e.g. bituminous sheet, TPO sheet or polyurethane) with the proposed new floor tile finishes. Un-bonded 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 include welded wire and 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

The screed shall be composed of 3 to 4 parts (by weight) washed sand 1 part cement and mixed with a blend of 1 part **ARDEX Abacrete** to 3 parts water. You may also use a blend of 1 part **ARDEX WPM 405** to 4 parts water.

The bonding slurry for bonded toppings shall be 3 parts cement and two parts **ARDEX Abacrete** neat. You can also use 4 parts cement to 1 part water to 1 part **ARDEX WPM405)** liquid additive.

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 un-bonded 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 un-bonded*.

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 80% coverage in residential and 90% coverage in commercial areas. 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.

Selected ARDEX Tile adhesives can be applied to screeds that have dried for at least 16 hours while other adhesives require the screed to have dried for at least 7 days. See overleaf for recommended adhesives;

	Adhesives for Screeds that have dried for a minimum of 16 hours only	Adhesives for Screeds that have dried for at least 7 days
Porous Bodied Tiles		
Terracotta	No selection for terracotta or similar mechanically weak tiles	X7 ; X10 ; X17 ; X18 ; X52 ; Abaflex
Glazed Ceramic	Abaflex ; X18 ; X52 ; X77 ; X78 ; X56	X7 ; X10 ; X17 ; X18 ; X52 ; Abaflex
Glazed Mosaic	X18 ; X77 ; X78 ; Abaflex	X10 ; X17 ; X18 ; X52 ; Abaflex ; X77
Dense Bodied Tiles		
Vitrified/porcelain	X18 ; X77 ; X78 ; Abaflex	X10 ; X17 ; X18 ; X52 ; Abaflex ; X77
Glass	X18 ; X77 ; X78 ; Abaflex	X10 ; X17 ; X18 ; X52 ; Abaflex ; X77
Natural Stone (excluding moisture Sensitive natural stone	X18 ; X52 ; Abaflex ; X77 ; X78 ; S28	X10 ; X17 ; X18 ; X52 ; Abaflex ; X77

Note : As an optional add-on, you can use **ARDEX E 90** with X78, X77, S28, X18 and X10 as detailed in **TB231**. This will greatly improve their performance and longevity.

GROUTING

Once the adhesive has set, (in most cases this is overnight but refer to the adhesive datasheet) the tiles may be grouted with one of the following ARDEX grouts:

- **ARDEX FG 8** sanded grout for joints from 1 to 8mm and 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 are 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 designed for grout widths 1.5mm 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 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 6m 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** 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.