

Wednesday, 12 December 2018

GENERAL SPECIFICATION FOR WATERPROOFING AND FIXING GLAZED CERAMIC FLOOR TILES OR PORCELAIN TILES ON AN EXTERIOR BALCONY

Please note that 'general' specifications are issued for information purposes, and should not be used as project specifications.

As each and every project needs to be assessed individually on its own merits and characteristics please contact the TAL Technical Advice Centre for a project-specific detailed materials and methods specification for specific projects.

It is important that the tile selected is suitable for the application, preferably against a written Supplier's specification. Factors such as water absorption, irreversible moisture expansion, MOR and PEI ratings, chemical resistance and overall stability of the product need to meet the requirements of the service conditions.

The backs of all tiles must be clean and free from all traces of dust and contaminants which could impair adhesion.

Please note that any "wet" areas, such as showers or balconies, should be waterproofed using TAL SUPERFLEX or TAL SUREPROOF waterproofing compounds prior to commencing tiling. Please feel free to contact us for a specification for waterproofing and tiling these areas, as well as for technical literature on any of our products

THE TAL PRODUCTS REQUIRED FOR THIS INSTALLATION ARE AS FOLLOWS:

Waterproofing Installation

TAL FLOOR PRIMER / TAL FLOORKEY
TAL SUREPROOF
TAL SUREPROOF MEMBRANE

Tile Installation

TAL GOLDSTAR 6
TAL BOND / TAL BOND POWDER
TAL WALL & FLOOR GROUT
NOTCHED FLOOR TROWEL
SPACERS
TAL SEALMASTER CORD
TAL GOLDSTAR SEALMASTER 1000

Special note must be taken of the following :

Adhesive System :

We have specified TAL GOLDSTAR 6 **rapid-setting** high-strength adhesive for these installations.

However, if timing on this project allows for a **quick-setting** adhesive option, then TAL GOLDSTAR 12 can be considered.

The advantages of using TAL GOLDSTAR 12 are as follows :

- TAL GOLDSTAR 12 has a longer pot life (pot life of 4 hours, grout after 6 – 8 hours, and traffic after 12 hours)
- TAL GOLDSTAR 12 is more cost effective than TAL GOLDSTAR 6

It is important that newly installed tiles are protected from traffic (other trades, etc) while the adhesive sets. This is especially important in fast-track installations.

Too early trafficking of newly installed tiles before the adhesive has set sufficiently may result in an impaired bond (hollow-sounding and/or loose tiles).

Waterproofing System :

We have specified TAL SUREPROOF, a tough, flexible and seamless rapid-setting two-component (2K) slurry-applied waterproofing membrane, for this installation. TAL SUREPROOF is ideal for installation onto conventional 'in-situ' concrete slabs.

However, due to the nature of their construction, it is essential that **Pre-Cast Slabs**, such as echo slabs, hollow-core slabs, rib and block, etc be waterproofed using a **membrane-reinforced system**, such as TAL SUPERFLEX and TAL SUPERFLEX MEMBRANE.

Please contact TAL for a revised (waterproofing) specification should this installation be onto Pre-Cast Suspended concrete slabs.

External Applications :

External tiling installations require a far stronger and more flexible adhesive system. All external installations will be exposed to building movement, thermal expansion and contraction, as well as inclement weather conditions (rain, dew, frost, etc). It is therefore essential that latex-modified adhesive and grout systems be used when tiling externally to cater for these conditions.

TAL BOND or TAL BOND POWDER must be incorporated in the adhesive and grout mix, with a solid bed of adhesive behind/beneath each tile, and tile panel movement joints should be located at closer centres.

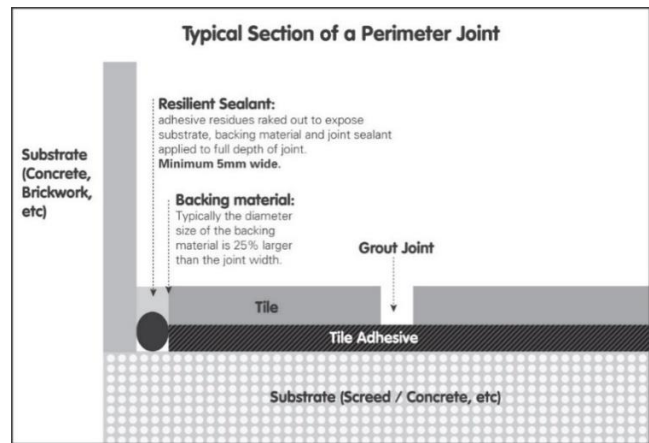
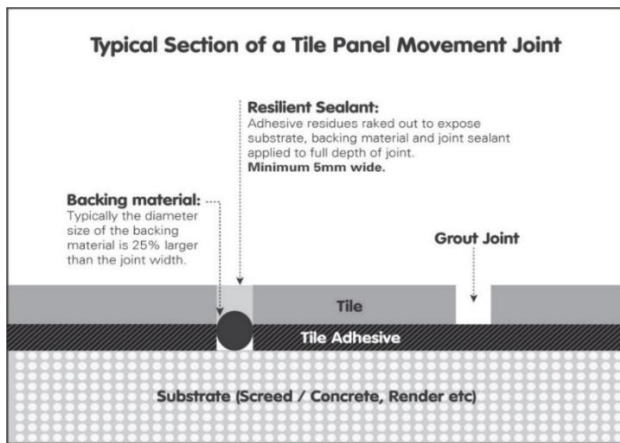
External installations must also be protected from inclement weather and too-rapid drying (direct sunlight, drying winds, etc), while the adhesive and grout sets.

Tile Panel Movement Joints & Perimeter Joints :

It should be noted that the lack of, or poorly constructed, tile panel movement joints and perimeter joints in a tile installation is a major cause of tile failure.

Joints must be created at the required spacing and must be well raked out to remove all traces of adhesive residues, debris, contamination, etc, ie the joint must extend through the tile and tile adhesive layers.

These joints must be filled with TAL GOLDSTAR SEALMASTER 1000 Polyurethane Joint Sealant (and suitable backing cord where applicable) in accordance with the manufacturer's instructions.



1. BACKGROUND PREPARATION

Balconies and terraces must have a minimum slope of one degree and adequate provisions for drainage.

1.1 **All new substrates must be allowed sufficient curing time.**

1.2 Any screeding must be firmly attached to the underlying concrete, and the substrate must be of significant strength, integrally sound (no crumbling, cracking, etc) and of a quality and consistency suitable for waterproofing and tiling. All damaged, defective, deteriorated or hollow sounding areas must be removed and the floor made good before proceeding.

The substrate must be clean and dry and free of all traces of dust and contaminants which could impair adhesion.

1.3 **The substrate must attain a moisture content of 10% or less before the waterproofing can be applied.**

1.4 **All surfaces to be waterproofed must be primed prior to the waterproofing application.** Woodfloated surfaces must be primed with a coat of neat TAL FLOOR PRIMER, and powerfloated or steelfloated surfaces must be primed with a slurry consisting of 1 part TAL FLOORKEY mixed with 2 parts TAL RAPIDFIX powder **or** 2 parts TAL KEYMIX powder (by volume), which is applied by block brush.

Allow the priming coat to dry for 2 – 3 hours before applying TAL SUREPROOF.

1.5 The TAL SUREPROOF waterproofing system comprises of 2 components, one containing a cementitious polymer and one containing a liquid-applied waterproofing membrane.

1.6 Pour the Liquid into the clean bucket and then add the Powder whilst stirring slowly with an electric drill of 1.1 kW with a suitable mixing paddle attachment. Stir at low speed until a smooth, lump-free viscous liquid is obtained. Allow to stand for a few minutes and then stir again before use.

For optimum results it is recommended to mix the entire kit in one mix, ie part mixing of the components is not recommended. The pot life of TAL SUREPROOF is approximately 1 hour at 23°C and 50% RH. Do not mix up more kits than can be used in that time.

1.7 Apply TAL SUREPROOF to the clean substrate using a block brush, **short hair enamel** paint roller, etc.

1.8 Coving Areas & Internal Corners

- 1.8.1 To allow for movement, apply a 10mm bead of flexible silicone sealant into the interface between the wall and floor and between internal vertical corners prior to the SUREPROOF application.

Due care must be taken to ensure that the silicone bead is not flattened out - ie the silicone must be allowed to cure for approximately 12 – 24 hours.

- 1.8.2 Apply a coat of TAL SUREPROOF by block brush or **short hair enamel** paint roller to these interfaces. Immediately roll out the SUREPROOF MEMBRANE (200mm wide) into the wet SUREPROOF with the membrane extending 100mm equally on either side of the interface, ensuring that there are no wrinkles or air bubbles trapped beneath the membrane. The membrane must be pushed into the corners, ensuring that the entire interface is covered with SUREPROOF MEMBRANE. Apply a heavy topcoat of SUREPROOF to completely saturate the membrane.

1.9 Floor Wastes / Full Bore Drains

- 1.9.1 To allow for movement, apply a 10mm bead of flexible silicone sealant into the interface around Wastes/Drains prior to the SUREPROOF application.

Due care must be taken to ensure the silicone bead is not flattened out, ie allow 12 – 24 hours curing time before proceeding.

- 1.9.2 Apply a coat of TAL SUREPROOF up the pipes and immediately position the strip of SUREPROOF MEMBRANE into the wet TAL SUREPROOF. Apply a second coat of TAL SUREPROOF to completely saturate the membrane. For wastes that are flush with the floor, take the application down into and around the waste.

1.10 Main Area Application

- 1.10.1 **Two coats of TAL SUREPROOF must be applied to ensure a minimum 2mm thickness is achieved.** Apply the first coat of TAL SUREPROOF to the dry, primed surface with a block brush or **short hair enamel** paint roller and allow to dry (approximately 1 – 2 hours). Apply the second coat of TAL SUREPROOF in a different direction to ensure complete coverage with no air entrapment or pinholes.

- 1.10.2 It is essential to ensure that the main SUREPROOF application overlaps the corner joints/interfaces, ie the interface application must be completely covered by the main area application.

- 1.11 Allow the membrane to dry completely (approximately 24 - 36 hours, depending on weather conditions) before being subjected to light foot traffic or applying the tiles.

- 1.12 **The waterproofing application must not be commenced if rain appears imminent.**

NB : Due care must be taken to ensure that the waterproofing system is not damaged by following trades.

(For more detailed information, please contact TAL for a Technical Data Sheet on the product.)

2. ADHESIVE SYSTEM

- 2.1 Apply TAL GOLDSTAR 6 rapid-setting adhesive mixed 20kg with 5 litres of TAL BOND (**replacing the water in the mix**) to the background using a notched trowel.

Alternatively, TAL BOND POWDER may be added to the adhesive mixing water at a ratio of 1 x 1kg sachet per 20kg TAL GOLDSTAR 6, or TAL GOLDFLEX single-part flexible rapid-setting adhesive may be used. When using TAL GOLDFLEX no additives are required, simply mix with clean water, alleviating possible mixing errors on site.

- 2.2 **In this tiling situation it is imperative that there is a solid bed of adhesive at least 6mm thick beneath each tile.** We would recommend the use of a notched FLOOR TROWEL.
- 2.3 At no time spread more adhesive than can be tiled onto in 10 – 15 minutes. Depending on atmospheric conditions, this will normally be around 1 square metre. This prevents the adhesive from drying or “skinning” before the tiles are applied.
- 2.4 Bed dry tiles (do not soak) firmly into the wet adhesive with a twisting action to ensure full contact between the background, tiles and adhesive. Tiles should be well tapped home with a rubber mallet or the wooden handle of a trowel. It is sound practice to remove the occasional tile to ensure that good contact has been achieved.
- 2.5 When using heavily lugged tiles, or tiles with a very irregular back profile, it is good practice to butter the back of each tile, ensuring that the grooves or dovetails are completely filled with adhesive.
- 2.6 Clean off any surplus adhesive remaining on the face of tiles and between the joints with a damp sponge before the adhesive dries.
- 2.7 Never butt joint tiles. Joints are required to allow the individual tiles to move with respect to each other and thus avoid a compressive stress build-up. They are also required as vents for the tile adhesive to cure. The joints between ceramic floor tiles must be a minimum of 5mm wide, and a minimum of 3mm wide between porcelain tiles.
- 2.8 Pot life of the adhesive will vary with climatic conditions. Under no circumstances should adhesive which has been left standing for too long be reconstituted by adding more liquid.
- 2.9 Do not tile over structural, expansion or cold joints in the background. These joints must be extended through the various layers to the surface.

3. GROUTING

- 3.1 Grouting must not be carried out until sufficient bond has developed between the bedding mix and the tiles to preclude disturbance of the tiles during the grouting operation. **Allow a minimum of 4 hours before trafficking or grouting.**
- 3.2 Use grey or coloured TAL WALL & FLOOR GROUT mixed 20kg with 6 litres of TAL BOND (**replacing the water in the mix**) for filling floor tile joints up to 8mm wide.
Alternatively, TAL BOND POWDER may be added to the grout mixing water, at a ratio of 1 x 1kg sachet per 20kg TAL WALL & FLOOR GROUT.
- 3.3 **WARNING :**
 - 3.3.1 Exterior installations must be protected against inclement weather and too rapid drying.
 - 3.3.2 Particular care must be taken to clean the grout off the tile face before it hardens completely. This is especially important when an additive such as TAL BOND or TAL BOND POWDER has been used.
 - 3.3.3 A sample of the tiles to be used should be tested beforehand to ensure that no grout is absorbed through the glaze, or into the tile body, causing permanent staining of the tiles.
 - 3.3.4 It is important to use the stipulated amount of liquid in the TAL Grout mixture. When cleaning, a **damp, not wet,** sponge must be used. Over hydration (too much water) of the mix, or in cleaning, causes colour variations in the grout joints, and also affects the integrity of the grout, resulting in a friable product.

4. MOVEMENT JOINTS

- 4.1 It should be noted that the lack of movement joints in a tile panel is a major cause of tile failure. They should be specified at the design stage to avoid placing them in heavy traffic areas and spoiling the visual effect of the tiles.
- 4.2 **Movement joints should be located in both directions at maximum 3 metre centres for exterior applications.**
- 4.3 **Movement joints should also be located around the perimeter of all floors, including interfaces between floor tiling and aluminium shopfronts, all vertical and internal corners / interfaces,** against obstructions fixed to the structural background and over all discontinuities in building materials, e.g. at interfaces of concrete and brickwork. In addition, movement joints should be located around any fixtures protruding through the tiled surface such as columns or stairs.
- 4.4 **The joints should be at least 5mm wide and extend through the adhesive and tile layers.** All construction / cold joints and structural joints in the background must be extended through the adhesive and tile layers to the surface in the form of tile panel movement joints. With regards to structural joints, the full width of the structural joints must be respected and extended through the adhesive and tile layers to the surface.
- 4.5 Where practical, the bulk of the depth of the movement joint can be filled with TAL SEALMASTER CORD.
- 4.6 Seal the joint using TAL GOLDSTAR SEALMASTER 1000 polyurethane joint sealant in accordance with the manufacturer's instructions. It is important that the joint sealant bonds only to the sides of the movement joint.
- 4.7 For the key requirements common to all tiling situations please refer to SANS 10107-2011, Code of Practice for the Design and Installation of Ceramic Tiling.

Should you require any further assistance or have any queries regarding the above, please do not hesitate to contact us. Assuring you of our best attention at all times.

Yours sincerely

SHARON MARGON
TECHNICAL ADVICE SUPERVISOR

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