

Thursday, 31 July 2014

## **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 dust and contaminants.**

### **TAL PRODUCT REQUIREMENTS**

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 GOLD STAR 6  
TAL BOND  
TAL WALL & FLOOR GROUT  
NOTCHED FLOOR TROWEL  
SPACERS  
TAL SEALMASTER CORD  
TAL GOLD STAR SEALMASTER 1000

**Special note must be taken of the following :**

**Adhesive System :**

We have specified the use of a **rapid setting** high strength adhesive for the installation of these tiles. However, if timing allows for a **quick setting** adhesive option, then TAL Gold Star 12 can be considered.

The advantages of using TAL Gold Star 12 are as follows :

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

**It is however important that newly installed tiles are protected from traffic (other trades, etc) for a minimum of 12 hours, while the adhesive sets.** This is especially important in high traffic areas and fast-track installations.

**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 movements. TAL BOND must be incorporated in the adhesive and grout mix, as a total water replacement, 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.

**1. BACKGROUND PREPARATION & WATERPROOFING**

- 1.1 Allow all new concrete work and screeds to cure for at least 6 weeks and 4 weeks respectively before proceeding. When waterproofing and tiling directly onto concrete, ensure that the surfaces are clean and free of all traces of curing agents, laitance and any other surface contaminants, preferably by scarifying.
- 1.2 Any screeding must be firmly attached to the underlying concrete, must be integrally sound (no crumbling, cracking, etc) and must be 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 surface must be clean and dry and free of all traces of dust, debris, loose particles and surface contaminants.

**The substrate must have a moisture content of 5% or less before the waterproofing can be applied.**

- 1.3 **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 tile adhesive powder **or** 1.5 parts ordinary Portland cement (by volume), which is applied by block brush.

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

- 1.4 The TAL SUREPROOF waterproofing system comprises of 2 components, one containing a cementitious polymer and one containing a liquid-applied waterproofing membrane. The two parts are mechanically mixed together by adding the powder to the liquid, and mixing until a creamy, lump-free consistency is obtained. Let the mix stand for 3 – 5 minutes before stirring again. Apply TAL SUREPROOF to the clean substrate using a block brush, **short hair enamel** paint roller, etc.

1.5 **Coving Areas & Internal Corners**

1.5.1 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.**

1.5.2 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.

1.6 **Floor Wastes / Full Bore Drains**

1.6.1 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.

1.7 **Main Area Application**

1.7.1 **Two coats of TAL SUREPROOF must be applied to ensure a minimum 1.2mm 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 or brush 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.

1.7.2 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.

1.8 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.

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

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

2. **ADHESIVE SYSTEM**

2.1 Apply TAL GOLD STAR 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.

**Alternately**, apply TAL GOLDFLEX flexible rapid-setting adhesive to the background using a notched trowel. No additives or surface priming agents 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.

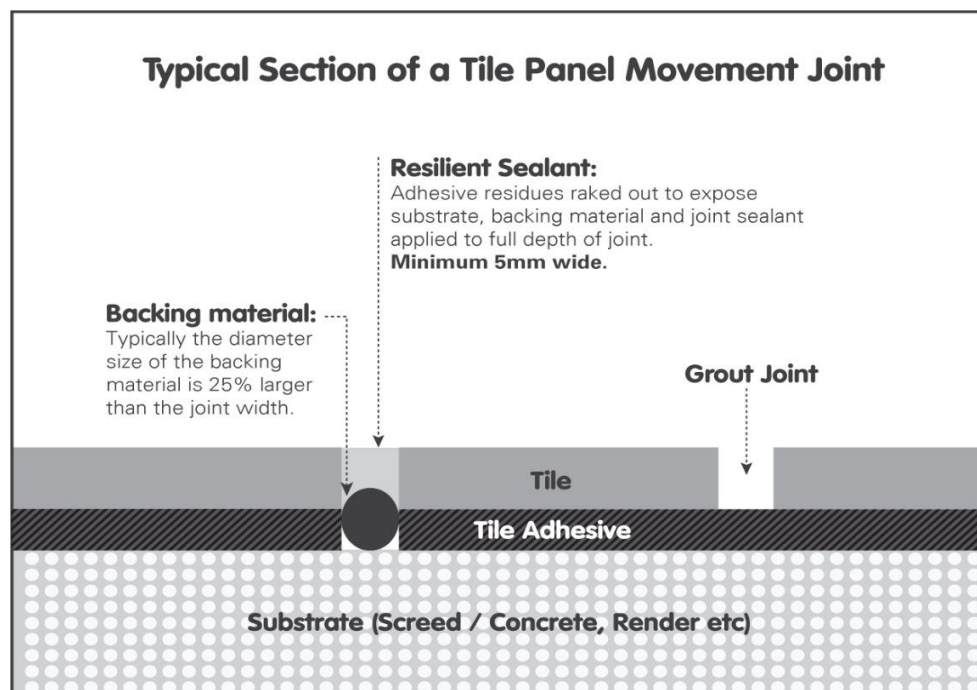
### **3. GROUTING**

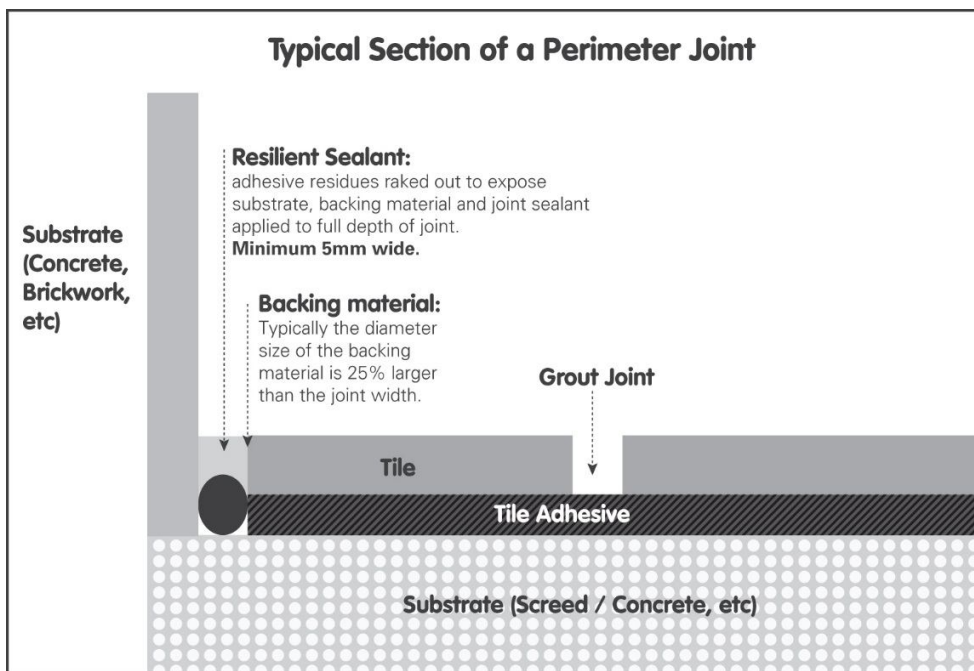
- 3.1 Grouting must not be carried out until sufficient bond has developed between the bedding mix and the tiles to preclude disturbance of the tiles during the grouting operation. Allow a minimum of 4 hours before grouting.
- 3.2 Use grey or coloured TAL WALL & FLOOR GROUT mixed 20kg with 6 litres of TAL BOND (**replacing the water in the mix**) for filling floor tile joints up to 8mm wide.
- 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 a latex additive such as TAL BOND 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, in all internal corners and 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.
- (See detail below of *correctly* constructed tile panel movement joint and perimeter joint.)
- 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 GOLD STAR 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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