INSTALLATION GUIDELINE

Type: Fixing Ceramic Tiles or Porcelain Tiles onto Partition Walling (Dry-wall Partitioning, Fibre-Cement Boards or Timber Panels) in Interior "Dry" Areas

Friday, 1 December 2023

IMPORTANT:

- **This Installation Guideline is issued for information purposes only, and should not be used as a project specification.**

  Please contact the TAL Technical Advice Centre to ensure you have the latest version of this Installation Guideline, as products and application procedures can change.

- **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.**

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

THE TAL PRODUCTS REQUIRED FOR THIS INSTALLATION ARE AS FOLLOWS:

TAL KEYCOAT + TAL KEYMIX
TAL PROFESSIONAL / TAL PROBOND – Ceramic Tiles
TAL GOLDSTAR 12 / TAL GOLDSTAR XL – Porcelain Tiles
TAL WALL & FLOOR GROUT
TAL BOND
TAL SEALMASTER CORD
TAL GOLDSTAR SEALMASTER 1000

NB: Prior to commencing the installation, please refer to the instructions on the packaging and product data sheets for more detailed information pertaining to substrate preparation, product mixing and application, curing times, etc. The products must be applied following a good standard of workmanship.

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SPECIAL NOTE MUST BE TAKEN OF THE FOLLOWING:

Partitioning Walling:
The following is an extract from **SANS 10107**, Code of Practice for the Design & Installation for Ceramic Tiling:

> ***"An important consideration with this type of background is that the sheets or boards shall be adequately braced to provide a rigid surface, free from any springiness and surface undulations. They shall also not undergo any distortion during and after completion of the tiling."***

NB:

- **For this application it is essential that the Panels used are of a suitable thickness and quality for the application and the structure must be such that the Panels can be positively fixed to the framework at maximum 300mm centres in both directions, to provide a firm and dimensionally stable substrate that is able to support the added weight of the adhesive and tiles without any bending/deforming/kicking out of the Panels.**
- **Although we have specified a modified adhesive and grout system for this installation to allow for the anticipated movement, it must be noted that the tile itself remains a rigid material. Excessive deflection or vibration movement in the background could result in an installation failure, ie cracking or delamination of tiles, cracking or popping of grout, etc.**

  Trauma that may be introduced into the installation by knocking/bumping by residents, staff, cleaning staff, etc should also be taken into consideration.
- The corners and edges of the panels must align in plane, without any lippage.
- Ideally, all joins between the Panels should be respected and maintained in the tile installation in the form of tile panel movement joints.

NB: It is critical that the maximum weight of cladding/m² (tile + tile adhesive) as recommended by the walling manufacturer/supplier should not be exceeded as this could result in an installation failure.

Furthermore:

- **Timber exhibits various types of movement, making it one of the most difficult substrates on which to tile.**
- Timber panels must be dry before tiling is commenced.
- To avoid movement and warping due to the ingress of moisture, the backs and edges (sides) of timber sheets or boards must be sealed.

  Note: The front face of *highly porous/absorbent* timber panels (such as chipboard, etc) must be sealed with a *non-oil-based sealant* (TAL SF PRIMER) to prevent moisture ingress during or after tiling. Please contact TAL for more information regarding this priming system.

Adhesive Systems:
Ceramic Tiles
We have specified TAL PROFESSIONAL standard-setting ceramic tile adhesive, mixed with TAL BOND as a total water replacement in the mix, for this installation.

Alternatively, TAL PROBOND **modified** standard-setting adhesive can be considered. When using TAL PROBOND no additives are required, simply mix with cool clean water. This not only minimises the risk of mixing and application errors on site, but also reduces delivery costs and storage requirements for bulky additive containers.

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Porcelain Tiles

We have specified TAL GOLDSTAR 12 quick-setting high-strength adhesive, mixed with TAL BOND as a total water replacement in the mix, for this installation.

Alternatively, TAL GOLDSTAR XL **modified** quick-setting adhesive can be considered. When using TAL GOLDSTAR XL no additives are required, simply mix with cool clean water. This not only minimises the risk of mixing and application errors on site, but also reduces delivery costs and storage requirements for bulky additive containers.

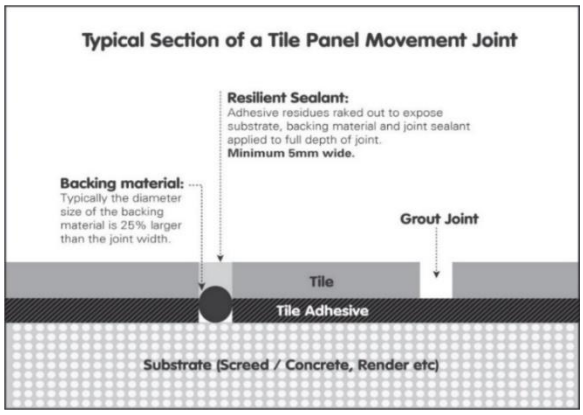
Tile Panel Movement Joints & Perimeter Joints:

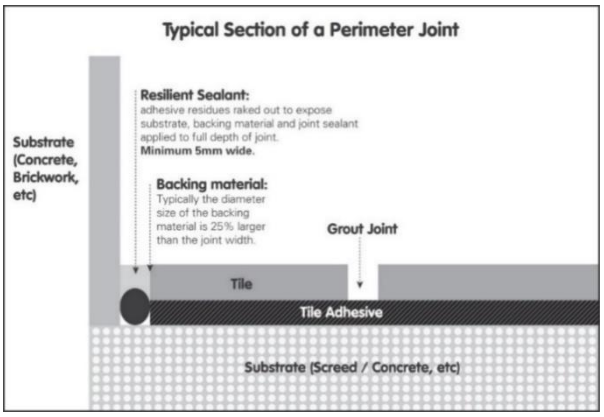
It should be noted that the lack of, ***or poorly constructed***, intermediate tile panel movement joints and perimeter joints in a tile installation is a major cause of tile failure.

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 down to the substrate.

These joints must be filled with and sealed with a suitable backing cord/tape and resilient joint sealant material in accordance with the manufacturer's instructions.

Alternatively, suitable Prefabricated Movement Joint Strips can be installed during the tiling operation, strictly in accordance with the manufacturer's instructions





Application Conditions:

Cold Ambient Conditions

Cold ambient conditions will not only impact on the temperatures of the adhesive, grout and mixing liquid (water or additive used in the adhesive and grout mix), but also the temperature of the substrate and tiles.

NB: Longer setting and curing times should thus be anticipated and catered for during extreme cold conditions.

High Ambient Conditions

As indicated on the product data sheets, warm weather conditions (generally, temperatures above 30°C) may shorten the working time of the mixture, and may even result in flash-setting of rapid- or quick-setting adhesives.

High ambient conditions will also impact on the temperatures of the adhesive and grout, mixing liquid (water or additive used in the adhesive and grout mix), substrate (concrete or screed), and tiles.

It is thus important when elevated ambient conditions are encountered that the materials (adhesives, liquids, tiles, etc) are stored in interior, cool conditions prior to use to reduce the risk of too-rapid setting.

NB: Never add more liquid to a mix which has been left standing for too long, as this will compromise the integrity of the product.

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1. BACKGROUND PREPARATION

1.1 **The Panels used must be of a suitable thickness and quality, and must be in good condition.**

1.2 The Panels must be erected and sealed strictly in accordance with the manufacturer's instructions, and must be **thoroughly braced at maximum 300mm centres in both directions (screwed, *not nailed*)**.

1.3 **NB:** Timber surfaces should be lightly sanded to remove all traces of existing coatings, sealants and other surface contaminants. New installations should be left for at least 24 hours to reach ambient temperatures before tiling to minimize the risk of warping.

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

1.4 Key the surface with a slurry consisting of 1 part TAL KEYCOAT to 2 parts TAL KEYMIX powder ***or*** 2 parts TAL tile adhesive powder (by volume), applied using an appropriate builders block brush and ensuring complete coverage of the substrate. Allow this slurry coat to dry for 4 – 6 hours before applying the adhesive.

2. ADHESIVE SYSTEM

2.1 **Ceramic Tiles**

2.1.1 Apply TAL PROFESSIONAL adhesive **mixed 20kg with 5 litres of TAL BOND (replacing the water in the mix)** to the background using a notched trowel.

Alternatively, TAL PROBOND **modified** adhesive can be used.

2.1.2 Lightweight Ceramic Wall Tiles

2.1.2.1 To ensure optimum adhesive contact as well as maximum coverage per unit of adhesive, we would recommend the use of a notched WALL TROWEL.

2.1.3 Large Format Ceramic Wall Tiles / Ceramic Floor Tiles

2.1.3.1 **In this tiling situation it is essential that there is good adhesive coverage and contact between the adhesive and tiles (minimum 80% adhesive coverage/contact).** We would recommend the use of a notched FLOOR TROWEL or THICK-BED FLOOR TROWEL.

NOTE: Back "buttering" with adhesive is also required when using large format tiles to ensure adequate adhesive coverage and contact behind each tile.

2.2 **Porcelain Tiles**

2.2.1 Apply TAL GOLDSTAR 12 adhesive **mixed 20kg with 5 litres of TAL BOND (replacing the water in the mix)** cool, clean water to the background using a notched trowel.

Alternatively, TAL GOLDSTAR XL **modified** adhesive can be used.

2.2.2 **In this tiling situation it is essential that there is good adhesive coverage and contact between the adhesive and tiles (<u>minimum</u> 80% adhesive coverage/contact).** We would recommend the use of a notched FLOOR TROWEL or THICK-BED FLOOR TROWEL.

NOTE: Back "buttering" with adhesive is also required when using large format tiles to ensure adequate adhesive coverage and contact behind each tile.

2.3 **General – Ceramic & Porcelain Tiles**

2.3.1 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.

2.3.2 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.

2.3.3 Clean off any surplus adhesive remaining on the face of tiles and between the joints with a damp sponge before the adhesive dries.

2.3.4 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 Wall Tiles and Ceramic Floor tiles must be a minimum of 2mm wide and 5mm wide respectively, and the joints between Porcelain Tiles must be a minimum of 3mm wide.

2.3.5 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.

2.3.6 Do not tile over structural, expansion or cold joints in the background. These joints must be extended through the various layers to the surface.

2.3.7 **NOTE: Ensure that heavy and/or large format wall tiles are well supported by means of a batten or some type of mechanical device until such time that the adhesive has set sufficiently. In this situation it will be a minimum of 12 -24 hours, depending on the adhesive system used.**

3. <u>GROUTING</u>

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, as follows:

TAL PROFESSIONAL / TAL PROBOND (Ceramic Tiles) - Allow a minimum of 24 hours before grouting.

TAL GOLDSTAR 12 (Porcelain Tiles) - Allow a minimum of 6-8 hours before grouting.

TAL GOLDSTAR XL (Porcelain Tiles) - Allow a minimum of 8-10 hours before grouting.

3.2 Use Super White or coloured TAL WALL & FLOOR GROUT **mixed 20kg with 8 litres (Super White Grout) or 6 litres (all other colours) of TAL BOND - replacing the water in the mix -** for filling wall tile joints up to 8mm wide.

* **NOTE: TAL Super White Grout is only suitable for wall tile joints up to 3mm wide.**

3.3 **WARNING:**

3.3.1 The joints must be raked out and cleaned before grouting.

3.3.2 Ensure that the joints are completely filled, and the grout is thoroughly compacted into the joints.

3.3.3 Particular care must be taken to clean the grout off the tile face before it hardens completely. This is especially important when a modified grout system has been used.

NOTE: Due care must be taken to ensure the face of soft-glazed ceramic wall tiles are not scratched during application and cleaning. The use of soft applicators and equipment is essential.

3.3.4 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.

3.3.5 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 liquid) 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 spoiling the visual effect of the tiles.

4.2 **Movement joints should be located in both directions at maximum 3 metre centres for this application, aligning with the modular tile size.**

4.3 **Movement joints should also be located in all vertical and internal corners and interfaces**, against obstructions fixed to the structural background **and over all discontinuities in building materials, e.g. at interfaces of Panels and Concrete/Brickwork, etc.** In addition, movement joints should be located around any fixtures protruding through the tiled surface.

4.4 **The joints should be at least 5mm wide and extend through the adhesive and tile layers.**

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 (edges of tiles).

4.7 For the key requirements common to all tiling situations please refer to SANS 10107, Code of Practice for the Design and Installation of Ceramic Tiling.