

Tiling with large format, thin-bodied porcelain tiles



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DEFINITION OF A LARGE FORMAT TILE

A tile that has an edge that exceeds 60 cm combined with a surface area of greater than 1800 cm²; (i.e.: 60 x 30cm tile). Typically they are made from porcelain and are highly compacted ceramic products, manufactured from exceptionally pure raw materials and provide a fully vitrified body which has extremely low porosity, varying from 0.005% water absorption to a maximum of 0.5%.

With the introduction into the UK, of large format, thin-bodied porcelain tiles (thicknesses ranging from 3mm to 5mm), it is clear that the main benefit for this type of tile is reduced weight restrictions; For example for fixing onto skimmed or plastered backgrounds or alternatively for refurbishment works – tile on tile.



Note: Not all thicknesses in a manufacturer's product range are suitable for all applications. Exterior applications and demanding commercial floor applications may require the use of a specific manufacturer's porcelain panel (type and thickness) that has been rated for the application and area of use.

SURFACE CONSIDERATIONS

As always preparation is the key to success, and it is important that to avoid failure a correct fixing method is followed. The main challenge for installers is to make sure that the substrate is extremely flat, so as to achieve the required coverage. It cannot be stressed enough; the flatter and smoother the substrate is, the easier the installation will be.

Skimmed, plastered or rendered backgrounds

If tiles are to be fixed to a gypsum plaster background this should have been allowed to dry out for at least 4 weeks, and should be free from dust, efflorescence or any other bond inhibiting substances.

Also make sure that the background is sufficiently flat, especially with the very large format tiles, as the normal SR1 requirement may not be sufficient.

Prime plastered surfaces with Mapei Primer G diluted 1:1 with water using a brush or roller to achieve a uniform coat, and allow to completely dry.

Existing tiled surfaces

Prior to the application of tiles ensure that there are no loose or hollow sounding areas, if so these will need to be cut out and replaced. De-grease the existing tiled surface using a mild detergent, then wash down with clean water and allow to completely dry.

Note: Priming with Mapei Eco Prim Grip may be necessary if the tiled surface is glazed.

INSTALLATION PROCEDURE

Special installation techniques are required for successfully installing large format thin-body porcelain panels. For example, using “vacuum suction cups” and / or “installation frames” can facilitate easier handling and placing of the panels and reduce the chance of cracking them during handling and installation.

Unique rail cutters specially designed to cut large panels can also help installer’s execute the installation quickly and effectively. Consult the thin porcelain panel supplier before selection and installation to determine the porcelain panel’s suitability for the intended area of use and the specified project.

Thin solid-bed fixing is essential, with the need for back-buttering to ensure correct coverage.

The use of Mapei Ultralite S1 is recommended for the fixing of this type of tile. With its light weight technology and ease of application, Mapei Ultralite S1 is suitable for adhesive bed thicknesses up to 15mm.

Grouting

Grout joints need to be kept clean throughout the installation, with excess adhesive being wiped from the joints. Grout joints should be equal to but no greater than the thickness of the tile, and may be filled using Mapei Ultracolor Plus.

Excerpt from: BS5385 pt1:2018:

7.2.1.6 Tile joints

Tiles should never be fixed with butt-joints, as an adequate width of joint is necessary for the relief of any local stress.

Tiles should not be fixed using the dot and dab technique.

Minimum grout widths vary by tile facial area, e.g:

- For tiles with a facial area <0.1 m² with no side over 600 mm long, joints should be not less than 2 mm wide.
- For tiles with a facial area 0.1 m² to 1 m² with no side over 1 200 mm long, joints should be not less than 3 mm wide.

Joints between ceramic panels should be increased pro-rata to panel size (e.g. for 3 m long ceramic panels the recommended minimum joint width between 3 m panels is 5 mm).

Joint widths between the tiles should be consistent throughout the installation unless specified otherwise (see also 7.1.5).

Any surplus adhesive remaining on the surface of the tiles or in the joint spaces should be removed before it hardens, in readiness for grouting (see 7.3).

Movement joints

Movement joints will be required within the installation, and can be filled using Mapei Mapesil AC

Movement joints in internal wall tiling should be incorporated as outlined in British Standard BS5385: Part 1.

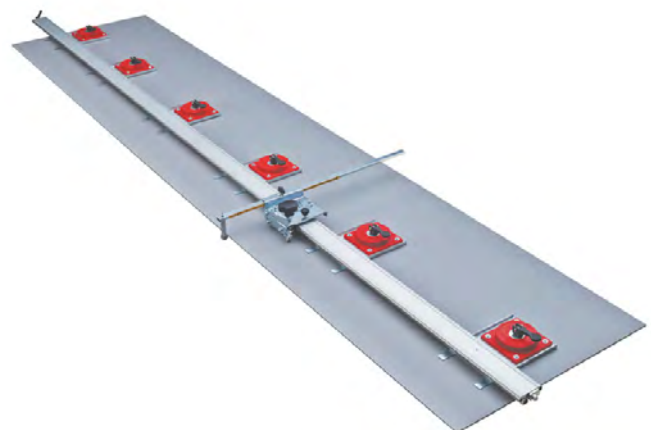
Briefly, this document requires that joints be located

- Over existing and /or structural movement joints.
- Where tiling abuts other materials.
- Where tiling is continuous across junctions of different materials.
- In large tiled areas, at internal vertical corners and at 3m – 4.5m centres horizontally and vertically.
- Where stresses are likely to be concentrated, for example at changes of alignment.

However if pre-formed movement joints are required to be used, there may be a potential size differential, it would therefore be advisable to contact the supplier.

PLEASE NOTE

This Technical Guide is designed to be read in conjunction with the relevant product Technical Data Sheets and Material Safety Data Sheets.



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