



Chapter 4. Installation technique, Grouting and Sealing of joints

After selecting the adhesive (described in Chapter 2), the first step is to spread the adhesive on the substrate by using a spreader with sloping notches (with a pitch of at least 10mm) to get better distribution of the adhesive.



Subsequently, spread the adhesive on the back of the tiles. Use a spreader with smaller notches (square notches of at least 3-4 mm) so that almost 100% of the surface is wetted with adhesive.



The adhesive should be applied in a straight line, with no circular movements, parallel to the short side of the tile to reduce the distance travelled by the air being pushed out.



The adhesive must be spread in the same direction on the back of the tile and on the substrate (in straight lines parallel to the short side of the tile).



Tip

The adhesive must always be applied using the double-buttering technique, that is, the adhesive must be applied on both the substrate and on the back of the tile.

Double buttering is necessary and indispensable to avoid problems caused by gaps in the back of the tiles that could cause tiles to be broken and or become detached.



Double buttering can enable even distribution of stresses over a wider area, which are generated by differential movements between the tiling and the substrate due to, for instance, variations in temperature in the case of external tiling.

To make handling and installing the tiles easier and safer, it is recommended to use runners and cross-members or a frame with suction cups.



The tiles are installed by placing the ribs of adhesive on the substrate and on the back of the slab parallel to help push the air out.

To ensure the tile is completely bonded and that all the air has come out, go over the surface of the tiles with a vibro-plate or tap the surface by hand with a special anti-bounce float made from rubber.



Suggestion

Tap the tile from the centre working towards the edges in the same direction as the ribs of adhesive, that is, parallel to the short side, to ensure all the air under the tile is forced out.



The same technique is used to install both floor and wall tiles.

When installing tiles on facades, the design engineer must assess whether additional mechanical safety fasteners are required.



Tip

Another essential requirement when installing large format tiles is that the adhesive must guarantee a high level of wetting of the back of the tiles so that gaps are not created. Otherwise, the soundness and durability of the bond could be affected.



The grout line between each tile must be at least 2mm wide and must be increased according to the size and type of the tiles, the area of use (floor or wall tiles, internal or external) and the stresses expected when in service.

To maintain the correct gap between each tile and reduce out-of-flatness between adjacent tiles, it is recommended to use spacers between the tiles (around one spacer every 50cm).



It is important to place the spacers in position before installing the tile. Ensure that the spacers are embedded in the adhesive.



To make this operation easier, a special positioning tool may be used to correct the width of the grout line between adjacent tiles and bring the tiles to the position required.



The grout lines may be filled with cementitious grout or with epoxy grout.

Always clean out the grout lines with a cutter, an abrasive scraper, etc. before grouting.



Clean the grouting by using a small amount of water and an abrasive pad (such as Scotch Brite®) followed by a firm cellulose sponge, taking care not to remove the grout.



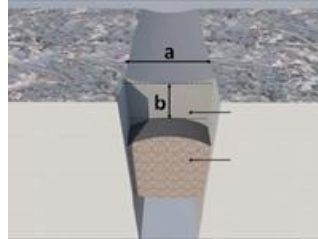
Tip

Unlike cementitious grouts, the cleaning of floor and wall tiles grouted with epoxy mortar must be carried out while the grout is still fresh, with a higher amount of water if necessary, in order to remove completely all epoxy resin residuals.



The width of the joint is determined according to the thickness and size of the tiles, the characteristics of the substrate, the area of use and the loads present.

To set the depth of the joint and prevent sealant adhering to the bottom, insert (MAPEFOAM closed cell polyethylene foam) along the bottom of the joint. The depth of the joint must be according to the following table:



<u>a</u> - width of joint	<u>b</u> - depth of joint	
From 0 - 4 mm		Increase the width of the joint
From 5 - 9 mm	$b = a$	
From 10 - 20 mm	$b = 10 \text{ mm}$	
From 21 - 40 mm	$b = a/2 \text{ mm}$	
More than 40 mm		Reduce the width of the joint sealant

**The above procedures is based on current standards and consolidated experience by Mapei over the years.*

The information and advice mentioned above do not reflect all the different situations that may be encountered on site. In the event or situations or conditions not covered above, our Mapei team is available to help identify the most appropriate solution for each specific intervention. If you have any queries, write to us at mapei@mapei.com.my.
