



INSTALLATION BULLETIN # 10

INSTALLATION OF LARGE FORMAT TILE AND STONE

Tile contractors need to be aware of the proper surface preparation steps and ideal setting materials to ensure a successful installation of large format tile and stone.

SURFACE PREPARATION

The most important consideration when setting large format tile is that substrate flatness is paramount. Maximum allowable flatness tolerance for horizontal installations is 6mm (1/4 in.) per 3m (10 ft.) regardless of tile unit size. Many large format tile manufacturers recommend 6mm (1/4") per 3m (10 ft.) maximum substrate variation when setting large unit material (tile greater than 38 cm (15 in.) on one side). For vertical installations, substrate variation tolerance is 3mm (1/8 in.) in 2.4m (8 ft.). A substrate that exceeds these standards should be filled with an appropriate self-levelling underlayment or ground to the correct tolerance. Floor deflection is also an important consideration - check your floor span and tile weight to local building codes. Expansion joints should not be covered but should be continued through to the finished surface, and cracked substrates should be covered with an appropriate crack isolation membrane.

CHOOSING THE RIGHT MORTAR – FLEXITILE 61, 62, & 56SR FULL COVERAGE MORTARS

Using the ideal mortar can make a huge difference in the installation of large format tile - saving time and money. One of the most significant advancements for large format tile and stone is the development of large format tile mortars. Mortars shrink as they cure - the displacement of water causes the mortar to retract and pull the tile as it hardens. This can cause tiles to crack or leave an uneven surface from tile to tile known as "lippage". Mortars with large format tile installation features are formulated to control the amount of shrinking that occurs during the curing process, allowing the tile to stay in position. Large format tile mortars are easy to spread, offer non-slump/non-slip support, and are available in rapid setting formulations that quickly lock tile into place - so that within a matter of hours it's ready for grouting.

Standard thin-sets, being used for large format tile installation, with heavy application by trowel and back-buttering may result in failures when the finished mortar bed exceeds 6mm (1/4 in.).

Whereas standard mortars are capable of a bed 2.5mm (3/32 in.) to 5mm (3/16 in.) thick, a mortar with medium-bed features can span from 2.5mm (3/32 in.) up to 20mm (3/4 in.) thickness after beat-in, providing maximum support and coverage.

Note that certain stone such as green marble, certain limestone and granite, agglomerate tiles, cultured marble or resin-backed tiles may be sensitive to moisture, in which case Flexepoxy 100 mortar should be used for the installation.

For installations subject to severe freeze/thaw conditions Flextile two component systems should be used.

Prior to installation of large-format tile, substrate must be level. Do not use a medium-bed mortar to correct an uneven floor.

For job specific installation systems, recommendations, project warranty information, or for assistance with installation specifications, please contact Flextile's technical department.

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FOLLOWING PROPER INSTALLATION PROCEDURE REQUIREMENTS:

TTMAC references specifically important requirements for large format tile installations:

- 301MJ for movement joints, see above attachment.
- 327 – 330 for Large Format Tiles), see above attachments.
- TTMAC guidelines for substrate preparation/tolerances (page 5 – Surface Preparation and page 25 Deflection - **see reverse**).
- An important requirement is proper coverage and transfer to the back of Large Format Tiles (95% coverage required as per TTMAC 329LFT).

Discuss with your tile distributor or Flextile representative to ensure the mortar selection will meet your upcoming installation requirements. **Flextile 61 and 62, as well as Flextile 56SR** are specifically designed for large format tile installation.

NOTES FOR THE PROFESSIONAL**Surface Preparation:**

- Surface must be clean, dimensionally stable, cured and free of contaminants such as oil, sealers and curing compounds. Concrete must be cured for a minimum of 28 days (preferably 90 days or longer to minimize shrinkage) and should have a steel trowel and fine broom finish for thin-set applications, and should be screed finished for mortar bed applications. If a cleavage membrane is being used, concrete should be steel trowel finished; if a cleavage membrane is to be applied over a rough surface, a 6 mm sand-bed must be applied under the cleavage membrane.
- Mortar bed application substrate surface variation not to exceed 6 mm in 3049 mm.
- Thin-set application substrate surface variation not to exceed 6 mm in 3049 mm and/or 2 mm in 305 mm. For tile larger than 381 mm x 381 mm substrate variation of 3 mm in 3049 mm should be considered. For a slight substrate irregularity, a latex Portland cement mortar or an epoxy mortar leveling coat may be required prior to installation by a thin-set method up to 8 mm thick and allowed to set before application of other materials. A leveling coat in excess of 8 mm should be installed with a medium set mortar or a mortar bed. If required, the method must be specified by the consultant.
- For tiles larger than 305 mm x 305 mm and/or grout joints of 5 mm or less, a more stringent tolerance of 3 mm in 3049 mm is required. Refer to specification section.

DEFLECTION

All floor systems, including wood frame construction, and sub-floor panels, over which the tile or stone is installed shall be in conformance with the National Building Code and/or the Provincial Building Code and/or local Building Codes.

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