

mortar bedded flooring



Grand Louvre – Paris. Architects: I.M. Pei, M. Macary – Paris.

Definition

Interior or exterior flooring consisting of limestone, marble or granite tiles, bedded with cement mortar on an adequate support. The reference document is DTU 52.1 (NF P 61-202 1) "Sealed flooring".

Choice of flooring

The stone selected must have a wear resistance compatible with the intended usage conditions and be resistant to frost for exterior use. Thickness is determined by the stone's compressive strength and the dimensions of the tiles.

- Standard thicknesses:
1.5 and 2 cm for interior use
2, 3 and 4 cm for exterior use (excluding roadway use).
- Standard formats:
Square tiles of 30 x 30 cm and 40 x 40 cm.
Paving in bands:
Widths: 15, 20, 30 and 40 cm.
Lengths: from 40 to 80 cm.

Appearance

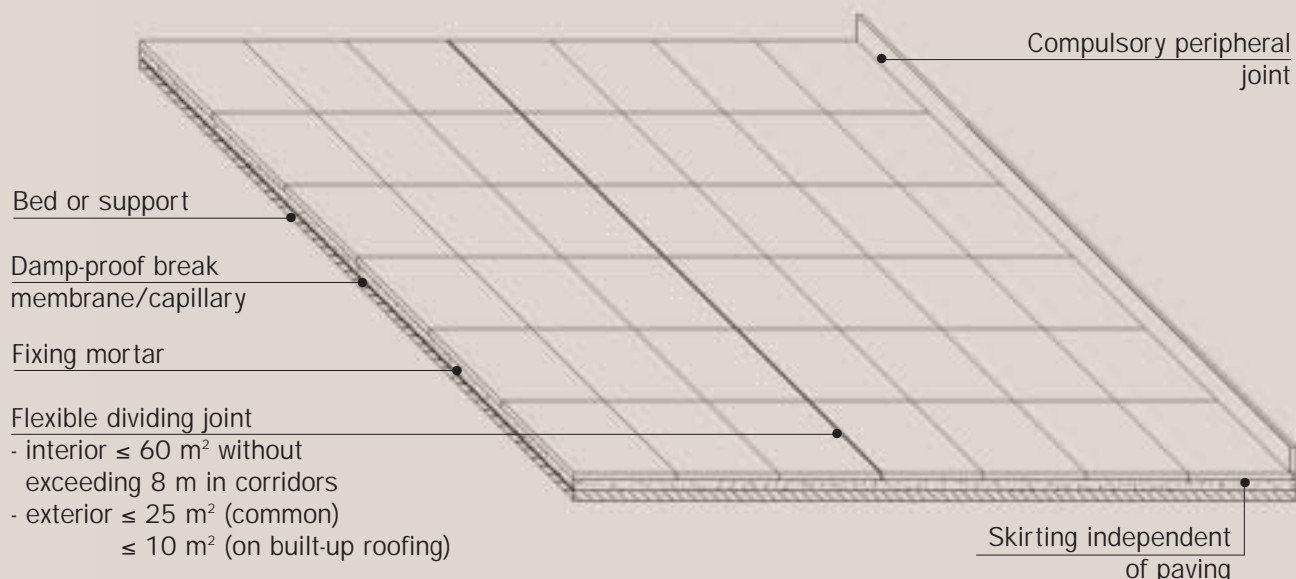
The marble setter must be particularly careful in order to harmoniously distribute the natural shades of the stone.

Support preparation

- **Supports**
Concrete slab, concrete floor with joists and floor blocks or closed joists, wooden floor and steel floor.
- **Beds**
7 beds are possible, including sand, cement mortar or concrete-based.
Bed selection depends on the support and its function.
- **Damp-proof membrane and capillary break**
Layer designed to break the bond between the bed of the support or the bedding mortar from the underlying layers and to prevent rising damp (polyethylene sheeting, thickness $\geq 150 \mu\text{m}$).

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Space requirements for fixing paving: tile thickness + thickness (3 to 5 cm) of the fixing mortar



Fixing mortar

A mixture of sand and hydraulic binders such as:

- Washed river or quarry sand, grade 0.08/3 mm.
- Cement and/or lime which does not stain stone (check prior to use).
- Provide a thickness of mortar from 3 to 5 cm.

Slope

• Exterior

The finished paving should have sufficient slope to allow water to drain off (slope $\geq 1\%$).

A layer of drainage must be interposed between the support and the fixing mortar. Water must be collected and evacuated at the base of the slope (Drain, gutter ...)

Joints

• Structural and expansion joints

Structural and expansion joints must be continued with the same width through the bed, the fixing mortar and the paving.

• Dividing joints

Joints shall be performed through the thickness

of the stone and fixing mortar and filled with a pliable and rot-resistant material (pre-formed plastic, elastomer mastic).

- Interior floors (excluding heated flooring):

Flexible dividing joints measuring at least 10 mm in width to limit area of less than 60 m^2 and lengths of less than 8 m in corridors.

- Exterior floors except on built-up roofing:

Flexible dividing joints measuring at least 10 mm in width to limit surface areas to less than 25 m^2 and lengths to less than 6 m, complemented by an impermeable elastomer mastic.

• Peripheral joints

Joints of at least 3 mm wide on the interior and 10 mm wide on the exterior, filled with a pliable and rot-proof material.

For surface areas greater than 7 m^2 , a peripheral joint must be installed between the last row of tiles and the vertical face of walls, columns and obstacles.

• Running joints

Joints filled with grout or strongly-dosed cement mortar, or prefabricated ready-to-use mortars.

- Interior floors: jointless installation is prohibited.

Joints at least 1 mm for marble. Running joints, 2 to 3 mm.

- Exterior floors

Joints at least 5 mm wide.