

Application of ceramic tiling using the thin-bed method

Dispersion adhesives

DIN
18 157
Part 2

Ausführung keramischer Bekleidungen im Dünnbettverfahren; Dispersionsklebstoffe

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

Contents

	Page
1 Field of application	1
2 Terminology	1
3 Underlying structure	1
4 Application or laying surfaces	2
4.1 General requirements	2
4.2 Special requirements	2
4.3 Testing	2
5 Tiles	2
6 Application	2
7 Jointing	3
8 Movement joints in the tiling surfaces	3
Standards referred to	4
Other relevant standards	4

1 Field of application

This standard covers the application of ceramic tiling, using the thin-bed method, with dispersion adhesives conforming to DIN 18 156 Part 3.

Ceramic tiling using the thin-bed method with dispersion adhesives conforming to DIN 18 156 Part 3 may only be used inside buildings in dry areas or in areas that are only slightly affected by damp. If dispersion adhesives are to be used in areas more affected by damp, evidence shall be provided of their resistance to moisture ¹⁾.

Dispersion adhesives shall be able to dissipate their water to the substrate or ceramic covering or through the joints in the tiling. They are generally used for wall tilings.

Note. "Slightly affected by damp" denotes the damp which occurs in dwellings through normal use of toilets, kitchens and bathrooms (except in the shower area).

¹⁾ A test method is currently being prepared.

2 Terminology

See DIN 18 156 Part 1.

3 Underlying structure

The construction and nature of the underlying structure shall comply with the requirements specified in the standards applicable in each case. The underlying structure shall have adequate loadbearing capacity and be stable; it can at the same time form an application or laying surface if suitable for the purpose (see subclause 4.1). Otherwise, provision shall be made for levelling layers such as plasterwork, which will then constitute the application or laying surfaces.

Underlying structures of concrete complying with DIN 1045 or of masonry complying with DIN 1053 Part 1 and Part 2 (at present at stage of draft) shall be sufficiently dry and at least 28 days old.

Underlying structures and application or laying surfaces shall remain dry when in use. This applies in particular to plaster-bound materials.

Continued on pages 2 to 4

4 Application or laying surfaces

4.1 General requirements

Application or laying surfaces shall have a sufficiently plane surface and adequate loadbearing capacity, and be free from through cracks. They shall have a generally continuous surface, as homogeneous as the material allows, adequate surface stability, and be air-dry and free from substances which adversely affect the adhesion of the dispersion adhesive (e.g. release agents, loose components, dust, sandblasting debris, accumulation of binding agents, efflorescence or dirt). Priming may be necessary (see subclause 6.2).

The dimensional accuracy of the application or laying surface shall correspond to that of the finished tiling surface. DIN 18 202 Part 5 shall apply as regards the assessment of planeness.

Metal, plastics, wood and wood based panel products are generally not suitable as application or laying surfaces for dispersion adhesives.

4.2 Special requirements

4.2.1 Plasters

Plasters shall conform to DIN 18 550 Part 1 (at present at stage of draft) and Part 2 (at present at stage of draft) and be made of group P II, P III, P IV a, P IV b or P V mortars. Gypsum plasters shall consist of building gypsum conforming to DIN 1168 Part 2 with a minimum compressive strength of 2,5 N/mm², shall be applied in a single layer at least 10 mm thick, and shall not be felted or smoothed.

4.2.2 Masonry

Masonry shall be constructed with fully filled joints and its planeness shall correspond to that specified in DIN 18 202 Part 5 for finished surfaces.

If this is not the case, masonry shall be furnished with a levelling layer of plaster, which shall then constitute the application surface and be constructed as specified in subclause 4.2.1.

4.2.3 Concrete

Concrete shall conform to DIN 1045 and have a surface which can be wetted with water.

4.2.4 Gypsum wallboards

Gypsum wallboards shall conform to DIN 18 163. The application surfaces shall not be stopped with filler.

4.2.5 Gypsum plasterboards

Gypsum plasterboards shall conform to DIN 18 180 and be applied as specified in DIN 18 181. In the area of the joints between the boards, any joint stopping shall be limited to the flattened part of the plasterboards. Stopping may also be carried out with the dispersion adhesive that is to be used.

4.2.6 Lightweight concrete wall slabs

Lightweight concrete wall slabs shall conform to DIN 18 162 and be applied observing the provisions of DIN 4103.

4.2.7 Autoclaved aerated concrete building slabs

Autoclaved aerated concrete building slabs shall conform to DIN 4166 and be applied observing the provisions of DIN 4103.

4.2.8 Lightweight concrete hollow wall slabs

Lightweight concrete hollow wall slabs shall conform to DIN 18 148 and be applied observing the provisions of DIN 4103.

4.2.9 Other building materials and slabs

In the case of other building materials and slabs not specified in the foregoing, evidence shall be provided of their suitability for use as an application surface.

4.2.10 Existing ceramic tilings

Existing ceramic tilings are suitable for use as an application surface if they adhere sufficiently strongly. The surface of the tiling shall be cleaned before the dispersion adhesive is applied.

4.3 Testing

The application or laying surfaces shall be assessed by inspection and the following simple tests:

- scratch test,
- wetting test with water,
- wiping test,
- rapping test.

5 Tiles

Ceramic tiles conforming to DIN 18 155 Part 3 and Part 4 and to DIN 18 166 shall be used for ceramic tilings applied using the thin-bed method.

Ceramic tiles that do not conform to these standards shall be used only if of equivalent quality.

6 Application

6.1 Building site conditions and meteorological factors

Ceramic tilings may be applied, when using the thin-bed method, only when the temperatures of the substrate, the materials used and the working area are not below 5 °C. The surfaces being tiled shall not become soaked while the work is being carried out.

Freshly applied dispersion adhesives shall be protected against too rapid extraction of moisture, e.g. by exposure to strong sunlight or draughts, during the period before the tiles are applied or laid.

6.2 Storage and use of the dispersion adhesive

The manufacturer's recommendations for storage and use of dispersion adhesives shall be observed, as also instructions regarding any necessary priming.

6.3 Application of the dispersion adhesive and application or laying of the tiles

The dispersion adhesive shall be applied to the application or laying surface in two stages by the floating technique. In the first stage, the application or laying surfaces shall be thinly covered with dispersion adhesive by means of a smoothing trowel. In the second stage the dispersion adhesive shall be applied, sufficiently thick for combing, to the freshly prepared initial layer. The layer of dispersion adhesive thereby produced shall be combed with a comb spatula held at an angle of 45 to 60 °.

In choosing the comb spatula to be used, account shall be taken of the size, planeness and rear side profiling of