

INSTALLATION RECOMMENDATIONS

Colour uniformity is ensured by the manufacturer supplying from one batch, which is characterized by the same batch number. Nevertheless, minor colour deviations cannot be completely ruled out. The floor layer must check the colour uniformity after laying out the goods. No complaints relating to colour uniformity can be accepted after installation.

1 Substrate

Suitable substrates for laying DLW Fibrebonded floor coverings are those that are flat, sound, free from cracks, dry or stay dry (see also VOB Part C, DIN 18365 flooring work, as well as the respective relevant regulations). When using dispersion adhesives, dense, non-absorbent substrates, such as mastic asphalt or primed screeds, must be levelled to an adequate thickness (2 mm recommended). For this the material supplier recommends low-stress levelling, low emission compounds. The exact product and execution recommendations from the material suppliers must be taken into account.

In the case of normal screed thickness, i.e. not significantly above the minimum requirements of DIN 18 560, the following rules of thumb apply for the residual humidity of the various screeds:

| Screed | Acceptable residual moisture in CM % |
|---|---|
| Cement screed | ≤ 2.0 |
| Cement heating screed | ≤ 1.8 |
| Calcium sulphate and calcium sulphate flowing screed | ≤ 0.5 |
| Calcium sulphate and calcium sulphate flowing screed heating screed | ≤ 0.3 |

In the case of insulating substrates, such as mastic asphalt, particle board, and with underfloor heating, etc., we recommend that antistatic fibrebonded floor coverings are also glued with conductive adhesive. This cancels out the capacity-reducing effect of the substrate.

Special information is applicable to renovation in connection with “solvent-based old adhesives” such as synthetic resin, etc. In line with the instructions from the material suppliers, it is recommended to create a barrier, otherwise significant reactions between the “old” and “new” materials may occur.

2 Adhesives

With all DLW Fibrebonded floor coverings, adhesive application takes place using suitable dispersion adhesives and the trowel notch size recommended by the adhesive manufacturer. Please also observe the processing recommendations from the adhesive manufacturers.

In principle, we recommend gluing using dispersion adhesives of the lowest emissions class, which are fast setting with hard joint formation and shear force-resistant properties.

Please also note that the choice of the adhesive can have an effect on the development of odours with fibrebonded floor coverings after laying.

**DLW FIBREBONDED****Installation
recommendations**

Updated: 06/2017

9 Manufacturers

| | | | |
|---|--|--|---|
| Bostik GmbH A.d.Bundesstr.16 D-33829 Bor- gholzhausen, Germa- ny Tel.: +49 (0)5425/801222 www.bostik- findley.de | Schönox GmbH Postfach 1140 D - 48713 Rosendahl, Germany Tel.: +49 (0)2547/910234 www.schoenox.com | Kiesel Bauchemie Wolf-Hirth-Str. 2 D - 73730 Esslingen, Germany Tel. +49 (0)711/93134352 www.kiesel.com | WULFF GmbH Wersener Str. 30 D - 49504 Lotte, Germany Tel.: +49 (0)5404/881-0 www.wulff-gmbh.de |
| Henkel-Thomsit Bautechnik GmbH Erkrather Str. 230 D - 40233 Düssel- dorf, Germany Tel.: +49 (0)211/7379256 www.thomsit.de | UZIN UTZ AG Dieselstrasse 3 D - 89079 Ulm, Germany Tel.: +49 (0)731/4097258 www.uzin-utz.com | Mapei GmbH Bahnhofsplatz 10 D - 63906 Erlenbach, Germany Tel.: +49 (0)9372/98950 www.mapei.de | Wakol GmbH Bottenbacher 30 D - 66954 Pirmasens, Germany Tel. +49 (0)6331/8001186 www.wakol.com |

The adhesive manufacturers mentioned are representative of many others. The adhesives recommended by the adhesive manufacturers can be requested directly from the manufacturers or from the DLW Advisory Service by telephoning +49 (0)71 42 / 71 255.

3 Measurement and needs assessment**3.1 Sheets**

The sheet lengths and widths required must be determined for the needs assessment. The direction of laying must therefore be established prior to the measurement. Head seams are only permitted with sheets lengths of more than 5 m, with no base length of less than 1 m being accepted. Sheets that run up to door openings, recesses or similar must cover these surface areas. Lateral door openings, recesses and similar may be laid with strips.

3.2 Modules

Modules are generally laid with cross joints. With regard to the joint run, parallel and diagonal laying are both possible. For the measurement, the surface area over which the floor covering is to be laid is taken as the basis, with an addition for wastage based on experience. Wastage is higher with diagonal laying than with parallel laying, and higher with lopsided or round surface areas than with straight ones.

3.3 Stair treads

Stairs are cut from material in sheet format. The need is calculated based on the number of stairs that can be cut from one sheet. With spiral staircases, templates can be created for this purpose. The stair edges should have a radius of at least 1 cm so that the floor covering can be glued around the stair edge using the appropriate adhesive.

4 Storage, air conditioning, installation conditions

Proper storage of the floor coverings is the best precondition for maintaining the installation technical properties of the coverings. Prior to laying, the floor covering must be stored in premises that are dry, but not too hot. Above all, it must not be stored in boiler rooms. Rolls should be stored horizontally. With modules, no more than eight boxes may be stacked one on top of the other. At too low a temperature, defect-free installation of fibrebonded floor coverings cannot be guaranteed. An installation according to the rules of the trade pre-supposes a room temperature of at least +18 °C and a substrate temperature of at least +15 °C. On underfloor heating, the temperature of the substrate must be between +18 °C and +22 °C. The maximum relative humidity should be 65% (ideally, between 40% and 60%). These climatic conditions should be maintained for 3 days before the work and for at least 7 days after completion. Even at suitable temperatures, the floor coverings must be acclimatised for at least 12 hours before being laid.

Make sure that only one and the same production batch number is laid in a given room, in the order of the roll/box numbers. This applies to both sheets and modules.

5 LAYING PROCESS

5.1 Sheets

5.1.1 Seam cutting

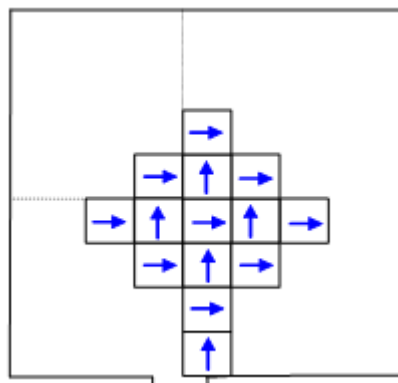
Seam cutting must take place prior to gluing. Seam cutting in the adhesive base is regarded as unprofessional, as it can lead to "open seam areas". The sheets are overlapped by 3-5 cm and laid out. The edges of the floor covering that are lying on top of one another are cut along a rolled steel ruler using a hooked or trapezoidal blade, vertically, in one pass. Laying the original edges on top of one another is not regarded as execution in line with the rules of the trade.

5.2 Modules

When assigning modules to the area to be laid, it must be considered that, if strips are used along the walls, they must be at least 10 cm wide.

a) Parallel-laying

Before laying, a line parallel with the front of the room is determined using a guide line. The wall distance is a multiple of the plank size minus approximately 1 cm, at least 10 cm. In corridors this measurement can be used from the deepest door threshold instead of the wall. The starting point is marked on the guide line determined.



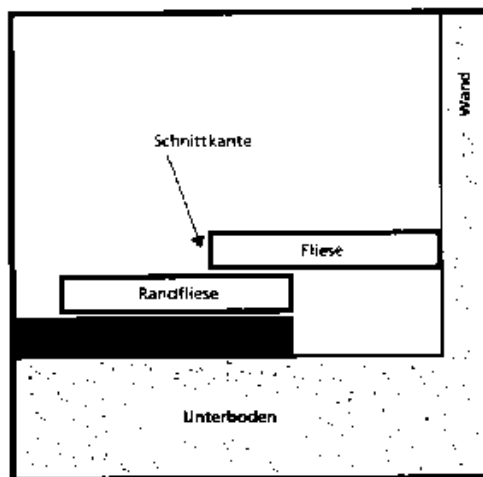
Parallel/chessboard-laying of modules

In particularly conspicuous places, for example the main entrance, only modules that are nearly whole and no narrow strips are used. From the starting point, a series of modules is now laid out loosely along the guide line and held down with module stacks or boxes.

In large rooms, this row of modules remains in position until the adjacent field has been laid. In small rooms it is enough to leave one module as a reference point.

b) Diagonal-laying

First, the space is divided up symmetrically and the spatial axis is determined using a guide line. Next, it is established how the module taper off at the walls and at the main entrance. The diagonal of a module is the length of the module side $\times 1.4$. If this now results in small triangles, the spatial axis is shifted sideways by the fourth part of the diagonal. The same applies to the starting point. In unsymmetrical spaces, the parallel is determined, using a guide line, at a distance from the front of the room that corresponds to a multiple of the module diagonal minus approx. 1 cm. Here, it must also be taken into account that, at the main entrance, only almost full modules should be laid, with half panels between each full panel, but never small triangles. Then, along the guide line, a double row of modules is laid loosely, with the first row of modules having their opposite corners on the guide line and the second row of modules touching these with the corners.



Cut edge of the border modules

In large spaces, a diagonal row of modules is now laid from the starting point outwards and used as the baseline for installing the remainder. In small rooms it is enough to leave one module as a reference point. The border modules are cut to size using a hooked or trapezoidal blade.

6 Gluing

In principle, adhesive is applied to the entire area with fibrebonded material in sheet format. With modules, a non-slip surface must be applied to the substrate. For this, please observe the processing guidelines from the adhesive manufacturers. To wet the rear surface it is essential to select the correct trowel notch size/roller and replace the putty knife blades in good time, as well as to apply the adhesive thoroughly. The wetting of the floor covering's rear surface must be checked on an ongoing basis by lifting up the material as the work is carried out. Basic rolling (40-80 kg roller) and re-rolling of the entire area, and particularly the seam area (do not rub!) is vital.

6.1 Sheets

The sheets are folded back to the centre of the room. Gluing begins with the centre sheet. The adhesive for the second half of the sheet must connect exactly to the adhesive limit for the first half of the sheet. Half sheets that have been cut to fit closely to adjacent parts of the room, such as door sills and frames, are glued first. Taking the waiting time/open time of the adhesive into account (see manufacturer's instructions), the sheets are pushed into the adhesive base. In doing this, care must be taken not to trap any air. The head ends are flexed into position (counter-bent). If necessary, the seams and head ends must be weighted until they are held to the floor by the adhesive.

6.2 Modules

Once the non-slip layer has been applied and has dried fully, installation starts from the modules that have been positioned as the reference point or line. In large rooms, step-by-step laying is recommended in order to avoid any shifts. This means starting in the centre of the room and working in two or four fields up to the walls. During installation, care must be taken to achieve perfect surface adhesion of the modules, i.e. no open gaps may be created between the individual components. Always rub, roll and/or press the modules carefully so that the reverse of the modules adheres to the substrate in the best possible manner.

7 Laying on underfloor heating

In principle, DLW Fibrebonded floor coverings can be glued to substrates with underfloor heating. The thermal resistance is so low that it is of almost no significance for operation of the heating (leaflet "Assessing and preparing substrates, laying resilient and textile floor coverings, laminated elements, parquet flooring and wood-block, heated and unheated underfloor structures", issued by the German Federal Association of Screed and Floor Covering).

7.1 Dry construction

Dry designs may consist of gypsum board or plasterboard, for example. After levelling out the joints, DLW Fibrebonded floor coverings can be laid. The manufacturer's instructions should be observed here.

7.2 Wet construction (A1 – A3)

With wet constructions, the heating pipes or heating cables are embedded in a floating cement or calcium sulphate screed. Before laying the floor covering, the heating system installer should ensure that the moisture, which is driven out of the screed by the effect of heat, escapes **before** laying. The heating engineer must submit a report on the measures carried out here for heating and cooling as prescribed, in line with "Interface coordination for heated underfloor structures" issued by the *Zentralverband Sanitär Heizung Klima* [German central association of the sanitary, heating and air-conditioning industries]. A moisture test must be carried out only at the locations marked by the screed installer. If no measuring points are available, the floor layer must make the client aware in writing of his concerns.

8 Electrically-conductive laying

With this type of installation, the fibrebonded floor covering is laid on a conduction system that must be included in the additional electrical safety measure by means of potential equalisation. In rooms where the relevant guidelines issued by the professional association are not applicable, connections, for example to neutral conductors, are possible. The conductive floor covering must be earthed by an electrician.

Information on the type of adhesive and conduction system must either be obtained directly from the adhesive manufacturer, or by telephoning the DLW Flooring Advisory Service on +49 (0)71 42 / 71 845. It is important that the adhesive used in the case of material in sheet form, or the non-slip layer in the case of modules/tiles, does not have a negative impact on the conductivity of the floor covering.

Commonly-used conduction systems are as follows:

8.1 Laying on copper tapes

A continuous copper tape must be laid under each row of modules or sheet of floor covering. The copper tapes must be connected transversally by two tapes at the ends of the floor covering. Connection points for potential equalisation must be provided in two places within the room, or in multiple places with larger rooms (above 40 m²).

We offer copper tape for conductive installation on copper tape.
Delivery form: rolls of 50 running metres.

8.2 Laying on a conductive layer

The conductive primer is applied in line with the manufacturer's processing guidelines. A piece of copper tape measuring approximately 1 m in length is glued to the substrate at the connection point provided. Please consult the material supplier prior to implementation.

Frequency of connection points:

in two places within the room, or in multiple places with larger rooms (above 40 m²). The maximum distance from an earthing point must not be more than 10 m.

9 Access floors

On access floors, the modules must be installed so that they are offset from the joints of the access floor components. This ensures that optimal coverage is achieved. When applying the adhesive, care must be taken to ensure that this does not penetrate into the joints of the access floor components.

Where necessary, the joints must be masked.

10 Cleaning and maintenance

The contractor must give the customer the written maintenance instructions for the floor covering in line with VOB, DIN 18365 Part C, Paragraph 3.1.4.

The following publication is available free of charge:

- Cleaning recommendations for DLW Fibrebonded floor coverings. It can be downloaded on website www.dlw.eu or requested by telephoning +49 (0) 71 42 / 71 – 255.

11 Special instructions

11.1 Office chairs with casters

For use on fibrebonded floor covering, office chairs must be equipped with type **H** casters according to EN 12 529, i.e. with hard casters in the prescribed dimensions. This must be taken into account when using office chairs with casters.

11.2 Fundamental points

Due to the specially-designed facing and fibre structure, shrinkage and/or expansion of the floor covering may occur, depending on the climate in the room. With humidity greater than 70% relative humidity, the polyamide facing expands. With humidity of less than 40% relative humidity, the facing begins to dry out and shrinkage and internal stress/roller thread tension may occur.

In the case of such unfavourable climatic conditions in the room, we recommend carrying out a gluing test "on site".



FLOORING

DLW FIBREBONDED

Installation recommendations

Updated: 06/2017

Where appropriate, make your reservations known to the building owner/customer, particularly regarding any unfavourable climatic conditions in the room, and satisfy your obligations to provide information.

11.3 Adhesive tapes

If adhesive tape is used on the flooring, please ask the relevant manufacturer about compatibility.

11.4 Disposal

Smaller quantities can be disposed through the residual waste. Larger quantities should be disposed through the Recycling depot / bulky waste.

Your contact for queries relating to installation:

Tel. +49 (0) 71 42 / 71 – 2 55

Fax +49 (0) 71 42 71 1 46

DLW Flooring GmbH

Technical Customer Service

Stuttgarter Straße 75

74321 Bietigheim-Bissingen, Germany

E-mail: service_germany@dlwflooring.com

Internet: www.dlw.eu

This issue supersedes all previous issues