FLOORING

DLW FIBREBONDED *INSTALLATION RECOMMENDATIONS*

The manufacturer ensures colour matching by supplying from one lot marked with the same lot number. However, slight deviations in shade cannot be ruled out completely. The floor installer must check that colour matches once the product has been laid out. Complaints with regard to colour matching cannot be accepted once the floorcovering has been installed.

1 Subfloor

Subfloors suitable for the installation of DLW fibrebonded floorcoverings are all those which are (and remain) level, firm, free of cracks and dry (see also VOB Part C, DIN 18 365 [German professional association; regulations governing floorcovering work] and the relevant regulations in each case). Dense, non-absorbent subfloors such as poured asphalt or primed screeds must have an adequate thickness of levelling compound (we recommend 2 mm) applied when dispersion adhesives are used. Low-tension levelling compounds recommended by the material supplier are suitable for this. Follow the precise product and application recommendations of material manufacturers.
The following empirical values apply to the residual moisture of the various screeds at normal screed thickness, i.e. not significantly above the minimum requirements of DIN 18 560:

Screed	**Permitted residual moisture in CM %**
Cement screed	≤ 2.0
Heated cement screed	≤ 1.8
Anhydrite and free-flowing anhydrite screed	≤ 0.5
Heated anhydrite screed	≤ 0.3

For insulating subfloors such as poured asphalt and chipboard and for underfloor heating and the like, we recommend bonding even antistatic fibrebonded floorcoverings with conductive adhesive. This eliminates the capacity-reducing effect of the subfloor.
For renovation, special instructions apply in conjunction with "old adhesives containing solvents" such as synthetic resins etc. It is recommended to apply a block in accordance with the directions of the manufacturer of the material, otherwise there may be considerable reactions between the "old" and the "new" materials.

2 Adhesives

For all DLW fibrebonded floorcoverings, suitable dispersion adhesives are applied using the notch spacing recommended by the adhesive manufacturer. Please also follow the processing recommendations of the adhesive manufacturer.
We always recommend bonding using dispersion adhesives of the lowest emission class which bond quickly and form hard joints with shear force-resistant properties.
Please also note that the selection of adhesive can affect the development of odours in fibrebonded floorcoverings following installation.

List of manufacturers

Bostik GmbH A.d.Bundesstr.16 D - 33829 Borgholzh. Tel.: 05425/801222 www.bostik-findley.de	Schönox GmbH Postfach 1140 D - 48713 Rosendahl Tel.: 02547/910234 www.schoenox.com
Henkel-Thomsit Bautechnik GmbH Erkrather Str. 230 D - 40233 Düsseldorf Tel.: 0211/7379256 www.thomsit.de	UZIN UTZ AG Dieselstrasse 3 D - 89079 Ulm Tel.: 0731/4097258 www.uzin-utz.com
Kiesel Bauchemie Wolf-Hirth-Str. 2 D - 73730 Esslingen Tel.0711/93134352 www.kiesel.com	WULFF GmbH Wersener Str. 30 D - 49504 Lotte Tel.: 05404/881-0 www.wulff-gmbh.de
Mapei GmbH Bahnhofsplatz 10 D - 63906 Erlenbach Tel.: 09372/98950 www.mapei.de	Wakol GmbH Bottenbacher 30 D - 66954 Pirmasens Tel.06331/8001186 www.wakol.com

The adhesives manufacturers mentioned are given by way of example for many others. The adhesives recommended by the adhesives manufacturers should be obtained directly from the manufacturers or from the Armstrong DLW advice service by telephoning +49 71 42 / 71 – 735.

3 Measuring up and determining requirements

3.1 Rolls

To determine requirements, the required roll lengths and widths must be calculated. Before measuring up, therefore, the direction of installation needs to be established. Head seams are permitted only for roll lengths of over 5 m; the piece left over may not measure less than 1 m. Rolls which run up to door openings, alcoves or the like must cover these areas. Door openings, alcoves and the like to the side may have strips installed.

3.2 Modules

Modules are generally fitted with transverse joints. Parallel and diagonal installation is possible with regard to the course of joints. For measuring up, an extra amount based on experience is added to the area to be fitted to allow for cutting. There is more cutting involved with diagonal installation than with parallel installation, and more with areas which include non-standard angles or curves than with straight areas.

3.3 Stairs

Floorcovering for stairs is cut from the roll. The requirement is calculated from the number of steps which can be cut from each roll. Templates can be prepared for this purpose for spiral staircases. The edges of the steps should have a radius of at least 1 cm so that the floorcovering can be bonded around the edge of the step using the suitable adhesive.

4 Storage, conditioning, installation conditions

Storing the floorcoverings properly is the best way to ensure that they maintain their installation characteristics. Before installation, the floorcovering should be stored in a dry place which is not too hot, above all not in a boiler room. Rolls should be stored lying down. In the case of modules, no more than 8 cartons should be stacked on top of one another. We cannot guarantee that fibrebonded floorcoverings can be installed without defects at temperatures which are too low. Installation in accordance with the rules of the profession assumes a minimum ambient temperature of +18 °C and a subfloor temperature of at least +15 °C. On underfloor heating, the temperatures of the subfloor must be between +18 °C and +22 °C. Relative humidity should be no more than 65 % (ideally 40 % to 60 %). These ambient conditions should be maintained for 3 days before and at least 7 days after completion. Even at suitable temperatures, floorcoverings still need to be conditioned for at least 12 hours before being laid.

Ensure that only one and the same fabrication batch number is used in one room in roll/carton number sequence. This applies equally to rolls and modules.

5 INSTALLATION

5.1 Rolls

5.1.1 Cutting seams

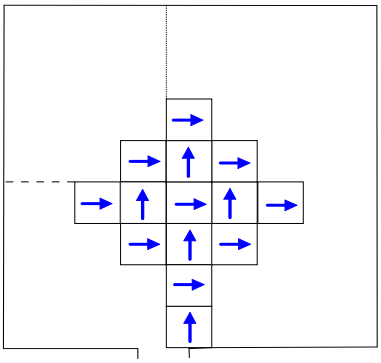
Seams must be cut before bonding takes place. Seams cut in the adhesive bed are unprofessional as they may lead to "open seams". The lengths are overlapped by 3 – 5 cm and laid out. The edges of the floorcovering lying on top of one another are cut perpendicularly along a flexible steel rule in one working step using a hook or trapezoidal blade. Butting up the original edges is not considered professional installation.

5.2 Modules

When dividing modules over the area to be fitted, take account of the fact that if strips are to be used along the walls, they must be at least 10 cm wide.

a) Laying parallel

A parallel with the main front of the room is determined before installation, using a guide line. The distance from the wall is a multiple of module size less approximately 1 cm, at least 10 cm. In halls, this measurement can also be taken from the lowest point of the threshold rather than the wall. The starting point is marked on the line determined.



Parallel/chessboard-style installation of modules

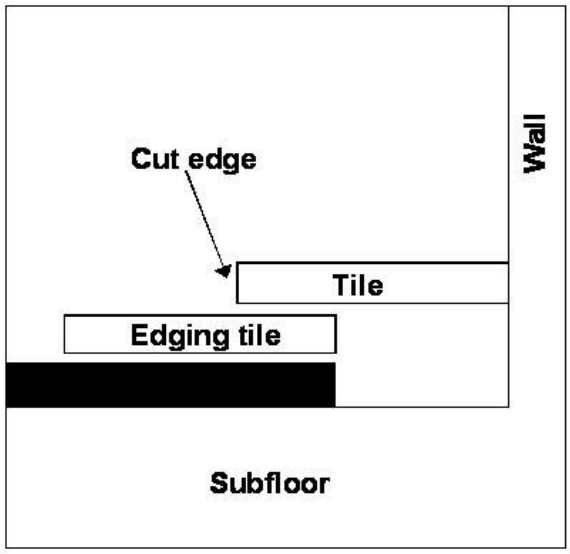
This starting point is determined so that at points which are particularly obvious, for example the main entrance, only virtually whole modules are laid and no narrow strips are used. From the starting point outwards, a row of modules is now placed loosely along the guide line and weighed down with stacks or cartons of modules.

In large rooms, this row of modules is left in position until the adjacent field has been laid. In the

case of small rooms, it is enough to leave one module as a reference.

b) Laying diagonally

The room is first divided up symmetrically and the axis determined using a guide line. Now determine how the modules run out at the walls and the main entrance. The diagonal of a module is the length of the side of the module x 1.4. If small triangles now result here, the room axis is shifted sideways by a fourth of the diagonal. The same applies to the starting point. In asymmetrical rooms, a guide line is used to determine the parallel at a distance from the main front which corresponds to a multiple of the module diagonal minus approx. 1 cm. Here too, it should be taken into account that only virtually whole modules should be positioned at the main entrance and, between them, half-modules but never small triangles. A double row of modules is then placed loosely along the guide line, the first row of modules having opposing corners lying on the guide line and the corners of the second row of modules touching it.



Cut edge of the edge modules

In the case of large rooms, a diagonal row of modules is now laid from the starting point outwards and used as the baseline for laying. In the case of small rooms, it is enough to leave one module as a reference. The edge modules are cut using a hook or trapezoidal blade.

6 Bonding

Fibrebonded product from the roll is always covered with adhesive over its entire area. With modules, a non-slip coating should be applied to the subfloor. Always follow the instructions of the adhesive manufacturer in the process. In order for the back of the floorcovering to be wetted, it is essential to select the correct notch spacing/roller, change trowel blades in good time and rub thoroughly. Continuously check that the back is wetted by lifting modules as you work. Thorough rolling (40-80 kg roller) and re-rolling the entire surface, especially the seam area, is absolutely essential.

6.1 Rolls

The rolls are pushed back to the centre of the room. Bonding begins with the centre roll. The adhesive for the second half of the roll must follow straight on from where the adhesive stopped on the first half of the roll. Roll halves cut to fit adjacent parts of the room snugly, e.g. thresholds and doorways, are bonded first. The rolls are pushed into the bed of adhesive taking account of the curing/open time of the adhesive (see manufacturer's instructions). No air should be trapped in this process. The head ends are rolled in (bent towards one another). If required, seams and head ends should be weighted until they are held to the floor by the adhesive.

6.2 Modules

Once the anti-slip coating has been applied and has cured completely, start laying the modules laid out as a guide point or line. In the case of large rooms, we recommend laying in stages in order to avoid offsets. In other words, start in the centre of the room and work towards the walls in two or four fields. Ensure that the modules are perfectly bonded to the surface when laying, i.e. there may not be any gaping between the individual elements. For the rear of the modules to adhere perfectly to the subfloor, always rub, roll or press on carefully.

7 Laying over underfloor heating

DLW fibrebonded floorcoverings can in principle be bonded to subfloors with underfloor heating. Their thermal resistance is so low that it is virtually irrelevant for operation of the heating system.

7.1 Dry design

Dry designs can be made up of plaster or plaster fibre boards. DESSO DLW fibrebonded floorcoverings can be installed once the joints have been feathered. Follow the manufacturer's instructions in the process.

7.2 Wet design (A1 – A3)

With wet designs, heating pipes or cables are embedded in a floating cement or anhydrite screed. Before the floorcovering is installed, the heating system installer should ensure that the moisture driven out of the screed by the effect of heat escapes **before** the floorcovering is laid. The heating system installer must hand over a report about the specified heating and cooling measures performed. A moisture test may only be carried out at the measuring points so marked by the person laying the screed. If no measuring points are available, the floor installer must submit his reservations to the client in writing.

8 Conductive installation

With this installation method, the conductive fibre-

bonded floorcovering is laid on a conductive system which should be included in the additional electrical protective measure by means of equipotential bonding. In rooms in which the relevant guidelines of the professional association do not apply, connections to neutral conductors, for example, are possible. The conductive floorcovering needs to be earthed by an electrical fitter.
The type of adhesive and conductive system should be requested either directly from the adhesive manufacturer or from the Armstrong DLW advice service on tel. no. +49 71 42 / 71 845. It is important that the adhesive used for product from the roll or anti-slip coating for modules/tiles does not have any negative effect on the static dissipation of the floorcovering.

Conductive systems frequently used are

8.1 Installation on copper tapes

A continuous copper tape is laid under each series of modules/length of floorcovering. The copper tapes should be linked crosswise at the ends of the floorcovering by two tapes. Connection facilities for equipotential bonding should be provided at two points in the room, or in larger rooms (above 40 m²) at several points.

We supply copper tape for conductive installation on copper tape.
Form of supply: 50 m rolls.

8.2 Installation on a conductive layer

The conductive initial coating is applied in accordance with the manufacturer's instructions for use. A piece of copper tape about 1 m long is affixed to the connecting point provided on the subfloor. Consult the material supplier before using the product.

Frequency of connecting points:
at two points in the room, or for larger rooms (over 40 m²) at several points. The maximum distance from an earthing point may not exceed 10 m.

9 Raised floors

On raised floors, modules should be laid offset in relation to the joints of the raised floor elements. This achieves optimum coverage. When applying the fixing material, ensure that it does not get into the joints of the raised floor elements. If appropriate, seal off the joints.

10 Cleaning and care

The installer must give the client written care instructions for the floorcovering as per VOB, DIN 18365 Part C Section 3.1.4

The following printed material is available free of charge:

- Cleaning recommendations for DLW fibrebonded floorcoverings can be requested from tel. no. +49 71 42 / 71 – 340

11 Special notes

11.1 Office chairs with castors

Office chairs with castors must be equipped for use on fibrebonded floorcoverings with type **H** castors to EN 12 529, i.e. with hard castors in the prescribed dimensions. This should be taken into account when using office chairs.

11.2 Basic information

The special design of floorcovering and fibre means that the floorcovering may shrink and/or stretch depending on ambient conditions in the room. At humidities of above 70 % rh, the polyamide floorcovering will stretch. At humidities of below 40 % rh, the floorcovering starts to dry out and there may be shrinkage or inherent/rolling tension.
In the event of such unfavourable ambient conditions in the room, we recommend carrying out a trial bonding on site.
Tell the principal/client of your reservations and fulfil your obligations to point out problems, in particular with regard to any unfavourable climate conditions in the room.

11.3 Adhesive tapes

If adhesive tapes are used on the floorcovering, please check compatibility with the manufacturers in question.

Your contact for installation issues:

Tel. no. +49 (0) 71 42 / 71 - 2 55
Fax +49 (0) 71 42 / 71 - 1 46

Armstrong DLW AG
Technical Customer Service
Stuttgarter Straße 75
D-74319 Bietigheim-Bissingen
e-mail: service_germany@armstrong.com
Internet: www.armstrong.eu

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