

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 the 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 VINYL 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 mastic asphalt or primed screeds must have an adequate thickness of levelling compound (we recommend approx. 2 mm) applied when emulsion-based adhesives are used. Low-stress 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 level of the various screeds at normal screed thickness, i.e. not significantly above the minimum requirements of DIN 18 560:

Screeds	Permitted residual moisture in CM %
Calcium sulphate and calcium sulphate wet screed	< 0.5
Cement screed	≤ 2.0

In the case of insulating subfloors such as mastic asphalt and chipboard or with underfloor heating etc., we recommend bonding even antistatic floorcoverings with conductive adhesive. This cancels out the capacity-reducing effect of the underfloor.

2 Adhesives

For all DLW VINYL floorcoverings, suitable emulsion adhesives are applied using the notch spacing recommended by the adhesive manufacturer. Please also take note of the manufacturer's recommendations for processing and bear in mind that the selection of adhesive and the quantity

applied may have a negative impact on the indentation properties of resilient floorcoverings following installation.

Solvent based contact adhesives are not allowed to use under heterogeneous floorings.

List of manufacturers

Bostik GmbH A.d.Bundesstr.16 D - 33829 Borgholz. Tel.: +49 (0) 5425/801222 www.bostik.de	Henkel-KGaA Construction Technology Henkelstraße 67 D - 40191 Düsseldorf Tel.:+49 (0) 211/797 100 www.thomsit.de
Kiesel Bauchemie Wolf-Hirth-Str. 2 D - 73730 Esslingen Tel. +49 (0) 711/93134352 www.kiesel.com	Mapei GmbH Bahnhofsplatz 10 D - 63906 Erlenbach Tel.: +49 (0) 9372/98950 www.mapei.de
WULFF GmbH Wersener Str. 30 D - 49504 Lotte Tel.: +49 (0) 5404/881-0 www.wulff-gmbh.de	Schönox GmbH Postfach 1140 D - 48713 Rosendahl Tel.: +49 (0) 2547/910234 www.schoenox.com
UZIN UTZ AG Dieselstrasse 3 D - 89079 Ulm Tel.: +49 (0) 731/4097258 www.uzin-utz.com	Wakol GmbH Bottenbacher 30 D - 66954 Pirmasens Tel+49 (0) 6331/8001186 www.wakol.com

The adhesives manufacturers mentioned are given by way of example for many others. The adhesives recommended by the adhesive manufacturers should be obtained directly from the manufacturers or from the Armstrong DLW helpline on + 49 (0) 71 42 / 71 - 255.



3 Sizing up and determining quantities required

3.1 Rolls (sheet flooring)

To determine the quantities required, the run lengths and widths must be measured. Before measuring up, the direction of installation therefore needs to be determined first. Abutted seams are only permissible for run lengths of over 5 m, with the minimum length of a run being 1 m. Rolls which run up to door openings, alcoves etc. must cover these areas. Door openings, alcoves etc. to the side may have strips installed.

3.2 Tiles

Tiles are generally laid with cross joints alternating in the direction of run. They may however also be installed in the same direction using a special arrangement. 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 wastage. There is greater wastage with diagonal installation than with parallel installation, and more wastage with areas which include non-standard angles or curves than with straight areas.

3.3 Stairs

Floorcovering for stairs is cut from the roll. Floorcoverings with a longitudinal pattern must be laid parallel to the nosing of the step. This also applies to landings. The requirement is calculated from the number of steps which can be cut from each roll. Templates are prepared here for spiral staircases.

4 Storage, air conditioning, installation conditions

Storing 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 boiler rooms. Rolls should be stored upright. With tiles, no more than 8 cartons should be stacked on top of one another. If resilient floor coverings are stored at too low a temperature, it may be impossible to lay them correctly. Installation according to the professional standards assumes a minimum room temperature of +18 °C. However, it is not only the room temperature which is important during installation but also the temperature of the subfloor. This should be at least +15 °C or, in the case of underfloor heating, between +18 °C and +22 °C. Relative humidity should be no more than 65%

(ideally 40% to 60%). These climatic conditions should be maintained for 3 days before preparatory

work starts and for at least 7 days after completion. Even at suitable temperatures the floor coverings still need to be conditioned before being laid. It is therefore advisable to cut the floor covering to size the day before laying it.

DLW VINYL floorcoverings should be stacked on top of each other in rolls and tiles fanned out so they can adjust to the room temperature overnight. Acoustic floorcoverings should be allowed to acclimatise at least one day before installation while standing loosely rolled.

Ensure that only one and the same lot number is installed within one room. This applies both to rolls and tiles.

5 Installation

The following floorcoverings should be laid using a special technique alternating between lengthwise and crosswise installation: Contract Interior, Connection Corlon, Translations and Translations II Acoustic.

5.1 Rolls (sheet flooring)

Even if edges will be welded later, it is advisable to cut both edges of the run because only a clean-cut edge can guarantee a neat seam. The first run edge is easily cut with the strip cutter. The second edge can be cut using one of two methods:

a) In small rooms (before applying adhesive): The underlying run is scored with the knife along the upper run edge already cut, and the surplus strip then cut off in the opposite direction using the hooked blade.

b) In large rooms (after applying adhesive): The upper run edge is scored with the scorer or the Linocut along the run edge of the run edge already cut lying in the bed of adhesive, and the surplus strip cut off with the hooked blade.

5.1.1 Seam incision

Make the seam incision so that the edges of the run fit closely but are not forced together. The incision should be either vertical or at a slight angle.

With Timberline make sure that the seam incision is always positioned against the edge of a plank pattern and the next run offset min. 15 cm to the planks.

5.1.2 Abutted ends

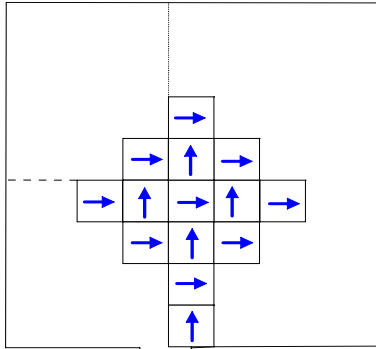
Abutted ends of short runs can be cut to fit before applying adhesive. With longer runs it makes more sense to cut the abutted end after bonding the surfaces. This also applies to abutted seams.



5.2 Tiles

a) Parallel installation

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 the tile size less approximately 1 cm. In halls this measurement can also be taken from the deepest door threshold rather than the wall. The starting point is marked on the line determined.



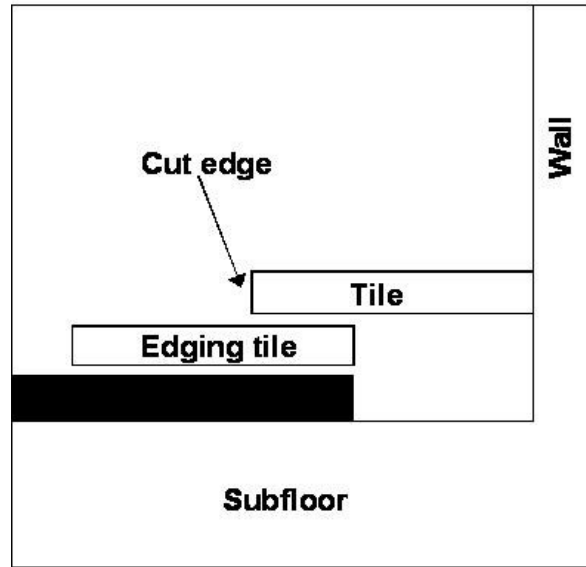
Parallel/chessboard-style installation of tiles

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

In large rooms this row of tiles is left in position until the adjacent field has been laid. In small rooms it is sufficient to leave one tile as a reference.

b) Diagonal installation

The room is first divided up symmetrically and the axis determined using a guide line. Now determine how the tiles are to run to the walls and the main entrance. The diagonal of a square tile is the length of the side of the tile 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 tile diagonal less approx. 1 cm. Here too, it should be taken into account that only virtually whole tiles should be positioned at the main entrance and, between them, half-tiles, never small triangles. A double row of tiles is then placed loosely along the guide line, the first row of tiles lying with opposite corners along the guide line and the corners of the second row of tiles touching it.



Cut edge of edging tiles

In large rooms a diagonal row of tiles is now laid from the starting point outwards and used as the baseline for laying. In small rooms it is sufficient to leave one tile as a reference. The edging tiles are cut in using a hook blade or utility knife after the surface has been bonded.

6 Bonding

Bonding must always be carried out over the entire surface. Always follow the instructions of the adhesive manufacturer during the process. For the back of the floor covering to be wetted, it is essential to select the correct notch spacing, change trowel blades in good time and rub thoroughly. Continuously check that the back is wetted by pulling up tiles as you work.

6.1 Rolls (sheet flooring)

The rolls are pushed back to the centre of the room. Bonding begins with the centre roll. The adhesive for the second run half must reach exactly to the adhesive border of the first run half. Run halves that are cut to closely fit adjoining room fittings such as door thresholds and frames must be 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. Hollow raised areas can be found by knocking and remedied by stroking the trapped air outwards. 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 Tiles

After applying the adhesive, start installation from the tiles laid out as a reference point or line. In large rooms we recommend laying in stages to avoid offsets. To wet the back, carefully rub or press on the tiles. This procedure may need to be repeated.

7 Sealing the seams

Sealing the seams is recommended in rooms where the subfloor is to be protected against the ingress of moisture. Welding must always be performed when installing on DLW KORKMENT SPECIAL, dry constructions (e.g. chipboard/gypsum plasterboard) and screeds with underfloor heating. The sections cannot be welded until the adhesive has set. Depending on the type of adhesive used and the climatic conditions in the room, this may take several days. The adhesive manufacturer's instructions should be followed carefully.

7.1 Thermal seam sealing

The covering seam is milled out to a depth of 2/3 of the covering thickness using a seam miller and plane. The channel must then be cleaned carefully (vacuumed or blown out). The seam width should be around 3.5 mm.

DLW welding cord can be applied with the handheld welding unit and fitted speed-welding nozzle, $d = 5$ mm. So as not to damage the PUR finish, we recommend using speed-welding nozzles with a very narrow air outlet. The working temperature is around 450 to 500 °C, and the working speed approx. 4 – 5 m per minute. The projecting part of the welding cord is removed in two stages. Immediately after being applied, the still warm welding cord can be cut off using the quarter-moon knife with the shoe attached. Then after the welding cord has cooled off, the welding seam can be cut flush to the covering surface with the knife.

7.2 Cold welding

DLW VINYL floorcoverings can also be welded with cold-welding agent if required, but in this case the seam has to be trimmed close, not force-cut. Ensure that the cold welding agent does not penetrate to the underlayer of the cut seam.

Details of cold welding techniques can be obtained for example from:

Werner Müller GmbH
PVC-Kaltschweißtechnik
Rudolf-Diesel-Str. 7
D-67227 Frankenthal
Tel. +49 (0) 62 33 – 3 79 30
Fax +49 (0) 62 33 – 3 79 302
www.mueller-pvc-naht.de

8 DLW Korkment Special as underlay

DLW KORKMENT SPECIAL is exclusively recommended here as the insulating underlay. It is a very fine-grained, highly compacted corkment that is specially tailored to the properties of synthetic floor coverings. DLW KORKMENT SPECIAL can be laid on all prepared subfloors. It can be laid from the roll in the same direction as the upper floorcovering. Seams should be offset by min. 50 cm. The cut can be made as a so-called double cut with a hooked blade against a straight-edge. To bond emulsion or 2-component emulsion adhesives are used. The floor covering should not commence until the adhesive has set completely.

Suitable adhesives can be obtained directly from the manufacturers (see item 2) or from the Armstrong DLW advice service by telephoning +49 (0) 71 42 / 71 – 255.

9 Fitting floorcovering on underfloor heating

DLW VINYL floorcoverings can be laid on subfloors with underfloor heating. Their thermal resistance is so low that it is virtually irrelevant for operation of the heating system (specialist information sheet "Beurteilen und Vorbereiten von Untergründen, Verlegen von elastischen und textilen Bodenbelägen, Schichtstoffelementen, Parkett und Holzpflaster, beheizte und unbeheizte Fußbodenkonstruktionen" [assessing and preparing subfloors, installing resilient and textile floorcoverings, laminated elements, parquet and wood-block floors, heated and unheated floor constructions]), published by the *Bundesverband Estrich und Belag e.V.* (German association for screeds and floorcoverings)).

9.1 Dry constructions

Dry constructions may consist for example of plasterboard/gypsum fibreboard. Armstrong DLW floorcoverings may be fitted after preparing the subfloor as specified by the relevant manufacturer.

9.2 Wet constructions (A1 – A3)

With wet constructions, the heating pipes are embedded in a floating cement or anhydrite screed. Before the floor covering is installed, the heating system installer should ensure that the moisture

dispersed by the effect of heat escapes before the floor covering is laid. The heating system installer must hand over a report about the specified heating and cooling measures performed in this respect as per "Schnittstellenkoordination bei beheizten Fußbodenkonstruktionen" [interface coordination with heated floors], published by the *Zentralverband Sanitär Heizung Klima* (German association for sanitary fittings, heating and air conditioning). A moisture test may only be carried out at the measuring points marked by the screed installer. If no measuring points are available, the floor installer must submit his reservations to the client in writing.

10 Conductive installation

This type of installation involves laying the conductive floorcovering on a conductive system that should be incorporated in the additional electrical safety measures by means of an equipotential bonding system.

In rooms to which the relevant guidelines of the professional association do not apply, connections for example to neutral conductors are possible. The conductive flooring needs to be earthed by an electrical fitter.

When installing conductive DLW Vinyl Conductive / ESD sheet flooring, standard commercial, non-conductive PVC adhesives can be used.

An exception to this is when installing on very dry or insulating subfloors, for example on chipboards, dry screeds, mastic asphalt, underfloor heating or subfloors or dry screeds treated with epoxy resin primers. With these subfloors, a conductive adhesive must be used. When installing conductive DLW Vinyl Conductive / ESD tiles, a conductive adhesive must be used for bonding.

The Armstrong DLW advice service on +49 (0) 71 42 / 71 - 8 45 would be pleased to help with queries on conductive installation.

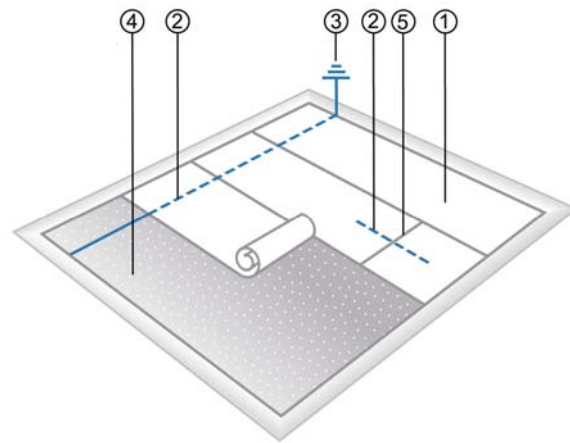
The recommended conductive system is:

10.1 Installation on copper tapes

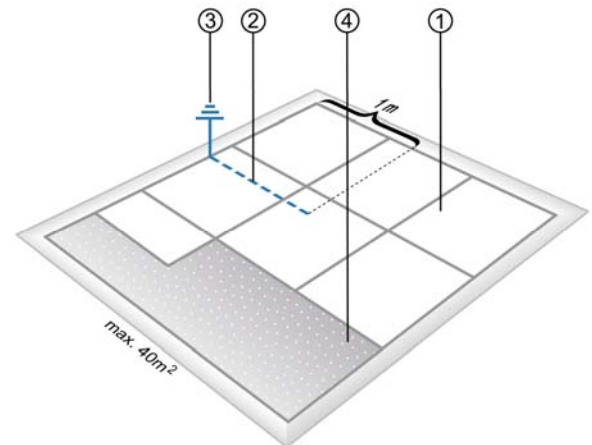
Each row of tiles/strip of floor covering must be linked crosswise with a continuous copper strip. Individual rows/strips must be at least 3 m² in size and linked to the rest of the area with a copper tape. In rooms of up to 40 m², connection points for equipotential bonding should be provided in at least one point in the room. In larger rooms, several connection points must be used.

When installing tiles, a conductive adhesive must always be used. One strip of copper tape per 40 m², laid approx. 1 m under the floor covering, is sufficient.

We offer conductive tape for the installation of DLW VINYL Conductive / ESD, available as 50 m rolls.



1. DLW Vinyl Conductive / ESD sheet flooring
2. Copper tape
3. Earth
4. Subfloor
5. Top seam



1. DLW Vinyl Conductive / ESD tiles
2. Copper tape approx. 1 m for max. 40 m²
3. Earth
4. Subfloor

11 Cleaning and maintenance

The contractor should provide the customer with written maintenance instructions for the floor covering in accordance with VOB, DIN 18365, Section C, Paragraph 3.1.4.



VINYL

The following brochures are available free of charge:

- Cleaning and maintenance of Armstrong DLW VINYL
- Cleaning and maintenance of Armstrong DLW synthetic floorcoverings for domestic applications.

These can be requested by telephoning +49 (0) 71 42 / 71 – 3 40.



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D-74321 Bietigheim-Bissingen

service_germany@armstrong.com
www.armstrong.eu

12 Special notes

12.1 Office chairs with castors

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

12.2 Burns

Smouldering cigarette butts can cause charring on synthetic floor coverings. These floorcoverings should therefore not be laid in restaurants etc. subject to this kind of problem.

12.3 Discolouration

With prolonged contact, rubber may leave indelible discoloration on all resilient floor coverings. Possible causes are:

car tyres, covering materials, castors or feet on washing machines, refrigerators, prams. Such discoloration will not appear immediately, but as a consequence of the migration of substances and subsequent exposure to light.

To avoid such discoloration, use castors made of polyurethane. If this is impossible, we recommend using protective plates.

Bitumen-based asphalts, mineral oils, greases, coloured shoe polishes deposited on the floor covering by shoes can result in discoloration on light-coloured synthetic floor coverings in areas of heavy traffic. This is for example the case in areas which are accessed from asphalted streets, in kitchens or in offices of filling stations and car repair workshops.

12.4 Adhesive tapes

If adhesive tapes are used on the floor covering, please check compatibility with the relevant manufacturers.

Your contact for installation queries:

Tel. +49 (0) 71 42 / 71 - 2 55

This edition supersedes all previous editions.