

## Installation VINYL PUR

To ensure a good colour match, only install rolls that come from the same manufacturer's batch number. Minor differences in shades of colour cannot, however, be completely ruled out. The contractor should check the colour after laying out the goods prior to installation. Any complaints about colour matching can no longer be considered when installation has been completed.

### 1 Sub-floor

Armstrong PUR vinyl floor coverings can be laid on all sub-floors that are permanently smooth, firm, free of cracks, and refer to all other relevant country standards. Dense, non-porous sub-floors such as poured asphalt or primed screeds must be smoothed with a levelling compound of at least ~2-3 mm thickness, before emulsion-based adhesives are used. The following figures for residual moisture and drying times for various sub-floors apply to substrates of normal thickness and are derived from practical experience:

Floor bases	Permitted residual moisture in CM-%
Cement – screed	≤ 2.0
- with under floor heating	≤ 1.8
Anhydride and	
Anhydride tile floor	≤ 0.5
- with under floor heating	≤ 0.3

A maximum RH of 65 % applies when measured at floor surface using a hygrometer. With insulating base surfaces, e.g. poured asphalt or chipboard, we recommend glueing antistatic floor coverings with conductive adhesive. This offsets any change in electrical resistance. For specialist installations in electrostatic sensitive areas consult our technical department.

### 2 Adhesive

The application of the adhesive is carried out using the correct trowel notch as recommended by the adhesive supplier. We recommend the use of low-emission and solvent-free adhesives. Care should be taken to ensure the correct choice and application of adhesive as this can have an effect on the success of the resulting bond and other aspects of performance in use.

#### List of manufacturers:

<b>Bostik GmbH</b> An der Bundesstr.16 D-33829 Borgholzhausen T: +49 (0) 5425/801222 <a href="http://www.bostik-findley.de">www.bostik-findley.de</a>	<b>Henkel-Thomsit Bautechnik GmbH</b> Erkrather Str. 230 D-40233 Düsseldorf T: +49 (0) 211/7379256 <a href="http://www.thomsit.de">www.thomsit.de</a>
<b>Kiesel Bauchemie</b> Wolf-Hirth-Str. 2 D-73730 Esslingen T: +49 (0) 711/93134352 <a href="http://www.kiesel.com">www.kiesel.com</a>	<b>Mapei GmbH</b> Bahnhofsplatz 10 D-63906 Erlenbach T: +49 (0) 9372/98950 <a href="http://www.mapei.de">www.mapei.de</a>
<b>WULFF GmbH</b> Wersener Str. 30 D-49504 Lotte T: +49 (0) 5404/881-0 <a href="http://www.wulff-gmbh.de">www.wulff-gmbh.de</a>	<b>Schönox GmbH</b> Postfach 1140 D-48713 Rosendahl T: +49 (0) 2547/910234 <a href="http://www.schoenox.com">www.schoenox.com</a>
<b>UZIN UTZ AG</b> Dieselstr 3 D-89079 Ulm T: +49 (0) 731/4097258 <a href="http://www.uzin-utz.com">www.uzin-utz.com</a>	<b>Wakol GmbH</b> Bottenbacher 30 D-66954 Pirmasens T: +49 (0) 6331/8001186 <a href="http://www.wakol.com">www.wakol.com</a>
<b>Laybond Products Ltd.</b> Riverside Saltney CHESTER CH4 8RS T: +44 (0) 1244 674774	<b>F Ball &amp; Co. Ltd</b> Churnetside Business Park Station Road Cheddleton LEEK Staffordshire ST13 7RS T: +44 (0) 1538 361633

Enquiries regarding suitable adhesives should be made directly to the adhesive manufacturers or to Armstrong Technical Team on +44 (0) 1235 554848 (UK) or +49 (0) 7142 71 735.

### 3 Estimating requirements

#### 3.1 Rolls

To calculate the required quantity of floor covering, it is necessary to assess the lengths and widths of rolls needed in relation to measured site quantities, starting first by deciding on the direction in which they are to be laid. Head seams should only be considered if the roll length is greater than 5 metres. Rolls running towards door openings or recesses must completely cover these areas. Recesses running parallel to the roll can be covered by strip inserts where necessary.

### 3.2 Tiles

Tiles are normally laid checkerboard effect with the surface pattern running in alternating directions, but if preferred, they can also be laid broadloom effect running in the same direction. Parallel or diagonal laying is possible to create different effects. The net floor areas plus a percentage for waste is calculated for assessing the number of tiles required. This waste will normally be greater if the tiles are to be laid diagonally or if the area contains irregular angles and curves.

### 3.3 Staircases

Stairs are individually cut from rolls. If the floor covering is printed with a pattern, this must run parallel to the edge of the step. The same applies to platforms and landing areas. The quantity required can be calculated from the number of steps that can be cut from one roll of floor covering. Templates will be needed in the case of spiral staircases or difficult shapes. Stair nosings will normally be required.

## 4 Storage, acclimatisation and installation conditions

To ensure that the floor covering retains its properties during laying, proper storage is required. Material should be kept in a dry room at a temperature of +18° C for at least 24 hours before laying. Rolls should be stored upright, and tiles should not be stacked more than 8 cartons high. Performance of vinyl floor coverings cannot be guaranteed if the temperature is too low at the time of installation. A room temperature of about +18° C and a sub-floor temperature of at least +15° C and on under floor heating between +18 and +22° C should be maintained for the duration of the fitting. These climatic conditions have to be 3 days before and at least 7 days after finishing. These figures should be regarded as the minimum if emulsion adhesives are being used. Before installation, wherever possible, it is worthwhile cutting from the roll to size including cutting waste on the day before they are laid in place. Armstrong vinyl sheet floor coverings should be laid out overnight. It is best to leave them lying flat on top of each other. Any minor irregularities in shape which may have occurred during transport will usually disappear.

When tiles are being laid it is best to fan them out so that they can adapt to the room temperature.

You have to respect, if you use only the same batch-number (for rolls and tiles) in one room.

## 5 Installation

### 5.1 Rolls

It is recommended, even if hot welding is to be carried out later, that both edges of the roll are cut as only then will a clean seam finish be guaranteed. The first roll edge is simply cut using the strip cutter. The second edge can be cut using one of two different methods:

a) In small areas (before applying the adhesive) the sheet that is underneath is scored with a knife using the edge of the upper roll that has already been cut as a guide. The unwanted strips are then cut off in the opposite direction.

b) In large areas (after applying the adhesive) the edge of floor covering that is on top is scored with an over scribe using the edge of the lower sheet that has been already cut as a guide. The unwanted strips are then cut off with the hooked blade.

#### 5.1.1 Cutting the seams

Seam cutting is to be carried out each time so that the edges of the floor covering fit tightly against each other without being forced. The cut is to be made square on or slightly inclined.

With Timberline it must be ensured that the joint cut is always at the edge of a plank pattern and the adjustment roll pattern matched accordingly.

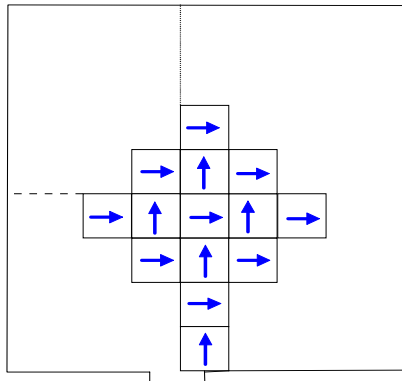
#### 5.1.2 Top ends

Head-end seams of short rolls can be cut to fit before being glued. With longer rolls the head-end seams should only be trimmed after the area has been glued.

### 5.2 Tiles

#### a) Parallel laying

A line parallel to the main front of the room is marked with a chalked string before laying starts. The distance from the wall is a multiple of the size of the tiles, minus about 2 cm. In corridors, this measurement can be taken from the deepest door threshold instead of from the wall. The starting point is marked on this line, and chosen in such a way that, at the most prominent points, (e.g. near the main entrance), the tiles laid are virtually all complete, so that no narrow strips have to be inserted.

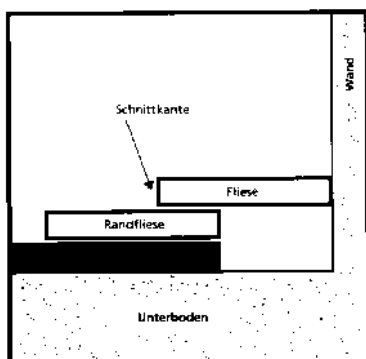


*Parallel-/chequerboard laying of tiles*

A number of tiles are now placed loose along the chalked string and weighed down with weights. In larger rooms, this row remains in position until the adjacent area has been laid. In smaller rooms, it is sufficient for one tile to stay in place in order to mark the starting point.

#### b) Diagonal laying

First the starting point is determined as above. It must now be decided how the tiles are to run to the walls and the main entrance and the angle of fitting. Chalk lines should be made on the diagonal in line with this angle. The diagonal dimension of a tile is the length of one edge multiplied by 1.414. If this results in a large number of small triangles, the starting point of the room can be moved to one side by one-quarter of this diagonal dimension. In non-symmetrical rooms, the parallels are laid down at a distance from the main front equal to a multiple of the tile diagonal minus about 2 cm. It should be noted in this instance as well that the tiles near the main entrance should only be whole ones, possibly with half-tiles in between them. Small inserts should always be avoided. A double row of tiles is then laid along the chalked line, with the first row lying with opposite corners along the chalked line and the second row touching it at the corners.



*Cut edge of edge tiles*

In large rooms, a diagonal row of tiles is now laid from the starting point and is used as a base-line for

all the other tiles. In small rooms it will be sufficient to leave one tile to mark the starting point. The tiles along the wall are finally cut to shape with a hooked blade when all the others have been glued down.

## 6 Glueing

Vinyl products should always be fully adhered throughout, following the adhesive manufacturer's instructions. The choice of the correct trowel notching and the right time to change the spatula blade, as well as thorough rubbing in, are vital if the underside of the material is to be coated properly. This must be checked continually during installation by pulling back the roll to assess transfer of adhesive.

### 6.1 Rolls

The sheets are rolled back to the middle of the room after positioning. Glueing starts with the middle roll. The adhesive for the second half of the roll must meet the edge of the adhesive from the first half. Halves of rolls which fit up to adjoining parts of the room, e.g. at thresholds and door frames, are glued first. Open working times for adhesives must be observed in accordance with the manufacturer's guidelines at all times. All air must be expelled from underneath and any bubbles can be located and removed by tapping the floor coverings, and then pressing out the air to one side. Head ends are rolled back into place before carefully cutting off any surplus. If necessary, seams and head ends should be weighted down long enough until the adhesive has fully cured. All materials should be rolled in accordance with adhesive manufacturer's instructions.

### 6.2 Tiles

When the adhesive has been applied, laying starts from the tile marking the starting point or line. During installation continually check that tiles are square to each other in order to avoid misalignment. The tiles should be rubbed or pressed down thoroughly to ensure good coating on the underside, and this procedure should be repeated if necessary. Materials should be rolled as in the case of sheet material.

## 7 Sealing of joints

Sealing of the joints is recommended for those rooms in which the sub-floor should be protected against the ingress of moisture. Welding must also always be carried out when laying Armstrong DLW Korkment special and floors that have under floor heating. The welding process may only be carried out after the adhesion process is completed.

### 7.1 Thermal welding of seams

Dependent on the type of adhesive and the ambient conditions in the room, this can take several days. In doing this, the adhesive manufacturer's specifications should be observed. The joints in the floor covering are grooved with a grooving machine or manual groover to a depth of 2/3 of the thickness of the floor covering. Finally, the groove should be carefully cleaned (vacuumed or blown out). The width of the joint should be approximately 3.5 mm. The Armstrong vinyl weld rod can be used with a hand welding device and attached speed welding nozzle (5 mm diameter).

We recommend utilising speed welding nozzles that have a very narrow air outlet. The operating temperature is between 450-500° C and a speed of working of 4-5 metres per minute. The projecting part of the weld rod is trimmed in two operations. Immediately after welding, the weld rod which is still warm is trimmed with the crescent-shaped knife and attached sledge. After the weld rod has cooled down the welded seam is trimmed with the crescent shaped blade flush to the upper surface of the floor covering.

### 7.2 Cold welding

Armstrong vinyl PUR floor coverings can also be welded with a cold-welding agent, but in this event the seam must be trimmed close. Do not allow any cold-welding agent to contaminate the surface of the material.

## 8 Armstrong DLW Korkment as underlay

Armstrong DLW Korkment Special can be laid on any prepared sub-floor, and can be laid from the roll in the same direction as the upper floor coverings. Seams should be off-set by at least 50 cm. The cut can be made with overlapping edges using a double-cut with a hooked blade, along a rule. Emulsion adhesive is to be used, or alternatively, a twin-component adhesive. The quantity of adhesive required will depend on the intended future use of the room. The surface floor coverings should not be laid until the adhesive under the Korkment has cured completely. If the floor is to be subjected to heavy use, e.g. in a hospital, the Korkment can be laid with the jute backing on the upper exported surface.

Enquiries regarding suitable adhesives can be directed to adhesive manufacturers or to the Armstrong technical team by telephoning **+49 (0) 71 42 71 340** or **+44 (0) 1235 554848 (UK)**.

## 9 Vinyl with underfloor heating

Armstrong **DLW** vinyl is suitable for installing on substrates above under floor heating systems (see leaflet: "Resilient floor coverings and parquet flooring on heated floor constructions" issued by the Germany Building Industry or refer to relevant country standards).

### 9.1 Dry constructions

Dry constructions can consist of anhydrous gypsum or brick plates. The floor covering can be installed once the joints have been skimmed over with a leveling compound.

### 9.2 Wet constructions

In the case of wet constructions, the heating pipes or cables are embedded into a floating cement or anhydrous gypsum screed. Before the floor covering is installed, care must be taken to ensure that any residual moisture generated by the heated elements is removed. This is generally the responsibility of the heating engineer, who should issue a report on the required heating-up and cooling-down measures undertaken. This report replaces the moisture tests required of the flooring installer, who may not carry out these tests where there is under floor heating systems installed unless the sub-floor installer has left marked measuring a point.

## 10 Installation of Armstrong DLW conductive vinyl

In this laying process the floor covering is laid onto a conductive system that is ultimately connected to a safety earthing system. The earthing of the conductive floor is a matter for the electrical contractor.

The Armstrong advisory service is at your disposal for questions about conductive laying operations on telephone number **+49 (0) 7142 71 845**.

Frequently used conductive systems are:

### 10.1 Laying on copper strips

A running strip of copper is to be laid under each row of tiles or roll of floor covering. The copper strips are to be connected crossways at the head-ends by a further two strips at two points in the room and with larger rooms (over 40 m<sup>2</sup>) at several points, connections to the earthing system are to be arranged.

Armstrong supplies copper strip use in the laying of Armstrong DLW vinyl conductive, this is delivered in rolls of 50 m lengths.

## 10.2 Laying on conductive layers

A conductive primer is to applied according to the operating guidelines of the manufacturer. A piece of copper strip about 1 metre in length is glued on to the floor in such a way that no part of the floor is more than 10 metres from an earthing point.

## 10.3 Laying with double requirement

Floor coverings with the designation ESD/LG1 are conductive but at the same time meet the requirement on the standing surface insulation as per DIN 757 100/VDE 0100 T410. Copper strip lugs and semi-conductive adhesive is required for laying this. It is recommended that additional information should be obtained about this type of laying from the Armstrong advisory service on telephone number +49 (0) 7142 71 845.

## 11 Cleaning and maintenance

The contractor has to provide the customer with a written set of maintenance instructions for the floor covering. You can obtain these by phoning +49 (0) 71 42 71 340 or +44 (0) 1235 554848 (UK).

## 12 Special instructions

### 12.1 Office chairs

Office castor chairs for use on resilient floor coverings must be fitted with type W castors in accordance with EN 12529 (DIN 68131), i.e. with soft castors. This should be taken into account when new chairs are used or before they are purchased.

### 12.2 Discolouration in use

Through long periods of contact, rubber can leave discoloured marks on all resilient floor coverings. These cannot be removed. The causes of such discolourations include: car tires, cover material, the feet of washing machines and refrigerators and pram tires. These discolourations do not appear immediately, but is the result of the transfer of substances and their subsequent exposure to light. To avoid such discolouration, use polyurethane castors. If this is not possible, we recommend the use of protective plates.

Substances such as tar, asphalts, mineral oils, grease, and coloured floor polishes can be ground into the flooring with footwear can result in discoloured marks in heavily used areas on lightly coloured flooring, for example, in rooms accessed from tarred roads, in kitchens, or in the offices of petrol stations and car repair shops.

## 12.3 Burn marks

Hot cigarette-end can leave burn marks on plastic floor coverings so they should not be laid in pubs and cafés or similar places where this kind of damage is only to be expected.

## 12.4 Adhesive tapes

When adhesive tapes are used on the flooring please ask the tape manufacture about the digestibility to the flooring.

Your contact-person for question:

Mr Brendel, Tel. +49 (0) 71 42 / 71 – 7 35  
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