

Sub-floor Requirements

The contractor performing the installation of the performance vinyl flooring must ensure the proper quality of the sub-floor. The sub-floor must be clean, smooth, permanently dry, free of cracks and any contaminants that might affect adhesion (e.g. paint, oil, grease, plaster or adhesive), sufficiently hard and resistant to pressure and tension strain.

In case of concrete and sand/cement screed sub-floors, their moisture content should not exceed 2.5%. If the sub-floor moisture content exceeds 2.5%, but does not reach 5%, a damp proof membrane should be installed underneath the PVC flooring system. If the sub-floor moisture content exceeds 5%, do not start installation or install a damp proof membrane underneath the commercial PVC flooring system.

It is recommended to check the condition of the sub-floor by performing the required tests and measurements prior to installation of the flooring. Check the surface level (using a ruler or a measuring wedge), as well as the absence of cracks, the moisture content (using a hydrometer) and the surface hardness (scratch test). Document the obtained test results. The sub-floor temperature directly before installation of the flooring should be between +15°C and +30°C.

Preparation of the Sub-floor (New or Existing Bases)

Prepare the new concrete base by stone or power grinding and vacuum cleaning. In the case of new gypsum based screed sub-floors remove the loose upper gypsum layer by grinding. In the case of existing carpet and rubber flooring, upon removing the old carpet or rubber sheets clean the surface from traces of paint and adhesive then patch or fill the cracks and hollows, if any, before installing the new floor covering.

If the new flooring is to be installed on top of a PVC base or ceramic tiles, thoroughly clean the surface by abrasion and vacuuming, fill the joints with a suitable repair composite and apply an approved primer compound to the entire surface.

If the new flooring is to be installed over existing wooden or laminated floors, confirm that the boards are securely fixed and properly dried. Firmly nail any loose elements to the joists and replace any boards with a moisture content higher than required. The surface then should be sanded and cleaned from dust and treated with an appropriate primer compound. These sub-floor preparation and floor laying instructions assume the use of Henkel Thomsit products which could be replaced by products of any other brand with similar technical properties.

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For the pre-treatment of the concrete base use dispersion primer Thomsit R 777 diluted with water by half; apply the primer without dilution on gypsum screed base with the help of a sponge roller and leave to dry for 24–48 hours. Use primer Thomsit R 766 diluted with water by half to pre-treat hard, dense, impervious surfaces. The primer will trap the remaining dust, close the pores in the concrete and make a contact surface for the smoothing compound.

After the primer has been completely absorbed, the surface needs to be levelled using a suitable smoothing compound (e.g. self-levelling compound Thomsit). When choosing the self-levelling compound consider the expected traffic load and the time allotted for the installation of the flooring. Thoroughly mix the powder with water according to manufacturer's instructions and then spread the smooth paste on the surface with a flat trowel. Occasional air bubbles should be removed with the help of a spiked roller. After the surface has completely dried up it should be smooth-finished and cleaned from dust.

The performance vinyl floorings are compatible with under floor heating. If under floor heating is used on the site, the heating system must be switched on at least four weeks before installation of the new flooring. Switch off the under floor heating 24 hours before commencement of work and keep it turned off till installation of the PVC flooring has been completed. Wait 48 hours after the flooring has been installed and then switch on the heating again. Raise the temperature steadily till it reaches its usual value over approximately 5 days. While using under floor heating, the temperature of the Sub-floor must not exceed 28°C.

Installation of performance Vinyl Flooring

While the measured sub-floor moisture content stays within 2.5–5%, the use of a damp proof membrane is mandatory. If the measured subfloor moisture content is below 2.5%, the use of damp proof membrane can be waived. The use of a vapour layer underlay is advisable in the case of existing concrete bases, vinyl floorings and metal bases and mandatory for asphalt sub-floors.

Installation of performance Vinyl Flooring with a vapour layer

The underlay must be unrolled and tempered on the site at a temperature of at least 18°C for one day prior to installation. The vapour layer underlay should be placed on the even, dry and clean sub-floor prepared according to instructions, with the pattern side facing down.

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Fold up the edges near the walls for at least 10cm and trim accordingly. Adjust the underlay sheets edge to edge and then fasten the edges on the top (of the plain side) with a 5 cm wide vinyl adhesive tape. The underlay should lie flat on the surface. While a vapour layer can be laid both lengthwise and crosswise, the crosswise installation is advised. Make sure the underlay joints do not fall together with the seams between the flooring sheets installed on top of the underlay. The performance vinyl flooring should be glued to the underlay using a dispersion contact adhesive (e.g. Thomsit K 188E). Spread the adhesive evenly on the underlay surface using an A4 notched trowel, maintaining the spread rate of approximately 200 g/m2. Leave the adhesive to evaporate completely till it changes from opaque to transparent yellow.

After approximately 60–90 minutes test it with your finger, and if no longer tacky, the adhesive bed is ready to accept the flooring sheets. Further steps (e.g. welding) are the same as described below for the installation of performance vinyl floorings without a vapour layer underlay.

Installation of performance Vinyl Flooring without a vapour layer

The flooring must be unrolled and tempered on the site at a temperature of at least 18°C for one day prior to installation. Use the flooring rolls from a similar batch and having the same lot number for installation in the same premises. It is advisable to open the rolls in the ascending order of their lot numbers. When laying the flooring with a wood imitating pattern the subsequent strips should point in the same direction, otherwise lay every next strip with the pattern pointing in the reverse direction compared to the previous row. The arrow on the back side of the roll shows the correct laying direction. After tempering the unrolled floor covering, trim the sheets to size on both ends with a 5 cm allowance, then place them on the sub-floor and align precisely edge-to-edge. The rolls should be installed lengthwise following the direction of the sunlight as it falls on the floor. Fold back the flooring strips to half of their length before applying the adhesive.

Gluing

We recommend using solvent-free low emission dispersion adhesives with performance vinyl floorings. Two adhering methods can be advised – based on wet set adhesives and contact adhesives.

Wet Gluing

In case of hygroscopic sub-floors (concrete, sand/cement screed) the use of dispersion or emulsion acrylic adhesive is recommended. The adhesive should be stored in frost-free environment and tempered on the site at a temperature of at least 18°C for one day prior to installation. Stir up the adhesive thoroughly before use. Recommended adhesives; Henkel Thomsit UK 400, Mapei Ultra/ Bond ECO 350, F-Ball F/44. Spread the adhesive on the sub-floor using an A3 or a B1 notched trowel, maintaining the spread rate of approximately 300–400 g/m2. Be sure to check the condition of the notched strips regularly and re-cut as necessary. Always follow the adhesive manufacturer's instructions regarding the optimal quantity, the open time and the drying time of the adhesive. A shorter open time will lead to the appearance of air bubbles whereas a longer open time will reduce the bonding capacity.



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Contact Gluing

The use of contact adhesives can be recommended for both hygroscopic sub-floors (concrete, sand/cement screed) and impervious (PVC) substrates. Only contact adhesives should be used for impervious sub-floors. Recommended adhesive: Thomsit K 188E which is a solvent-free dispersion adhesive suitable for contact application. Apply the adhesive to the sub-floor and spread evenly using an A2 or A4 trowel and maintaining the spread rate of approximately 200–250 g/m2. Leave the adhesive to evaporate completely till it changes colour from opaque to transparent yellow. After approximately 60–90 minutes test it with your finger and, if the adhesive is no longer tacky, start to position the folded back flooring sheet onto the adhesive bed. The performance vinyl floorings are compatible with under floor heating. The wet set and contact adhesives mentioned above are also suitable for such installations.

To ensure good bonding thoroughly smooth the flooring sheet working from the centre outwards, with the help of a manual cork rubber, confirming no air bubbles are trapped underneath. Finally roll the installed flooring using a 50–60 kg roller. Repeat the sequence to install the other half of the flooring sheet.

In order to make site formed coved skirting draw a line on the wall to mark the height the coving will reach and fit the capping strip to the wall using contact adhesive. Attach the cove former in a similar way: using a brush, apply contact adhesive to the back of the cove former and to the wall up to the capping strip and leave both to dry. When completely dry firmly push the vinyl with the cove former into place and tuck the top edge into the capping strip.

Welding

Welding can be performed after no less than 24–48 hours upon installation depending on the kind of applied adhesive and the adhesive manufacturer's instructions.

Heat Welding

Application of heat welding is mandatory for wet areas and premises with under floor heating. When the flooring is ready the joints should be grooved to appropriate depth and width either manually or with a power tool. For foam backed vinyl floorings the joints should be grooved to the depth of the upper (outer) layer; for firm dense surfaces the joints should be grooved to the 2/3 of the profile; the recommended groove width is 2–3 mm. The joints should be thoroughly cleaned from any debris. Use a 4mm welding rod for heat welding of the performance vinyl flooring.

Set the working temperature of the heat welding gun to approximately 300–400°C. The welding can be carried out with the help of an automatic appliance or with a hand-operated welding set. Before starting the procedure trial welding is recommended in order to set the optimal welding temperature and speed. After the welding seam has cooled down remove the excessive welding rod in two steps. First cut off the top half of the welding rod using a quarter moon knife. After the remaining weld has cooled to the room temperature perform the final trim.



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Cold Welding

Cold welding is another common technique used for the installation of performance PVC floorings. This method ensures quick seam closing and is especially suitable for chip floors and all-over surfaces as it produces an integral seamless covering for large areas.

The cold welding technique consists of four steps:

 Place the PVC flooring strips so as they overlap for approximately 3–5 cm. Cut the sheets lengthwise along a metal rule and remove the cut-off waste from both the top and the bottom layer.
Centre the masking paper tape over the closely cut joints of the PVC strips and press it on tightly with a roller to stop the cold welding paste from sneaking while being filled into the joint.
Cut through the masking tape simply and firmly along the seam with a circular cutter (or a trapezoid blade).

4. Thoroughly shake up the tube of cold welding paste. Press the nozzle of the cold welding paste tube deeply into the joint with one hand and pull the tube along the joint. Use your other hand to smear the cold welding paste so that an approximately 5 mm wide line appears on the surface of the masking tape. Allow bonding for ten minutes and then remove the masking tape. The result is an almost invisible waterproof seam. Use Werner Mueller cold welding paste Type A for sealing new PVC floorings and Type C to repair the existing surfaces.

Skirting

Plastic skirting is recommended for closing the edges along the walls. If a vapour layer or damp proof membrane has been used, a 5 mm air gap should be left along the walls during installation of the skirting.

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