

PermaSEAL[®]

Permagard

Self-Adhesive Tanking Membrane

Installation Guide

Contents

1. Introduction	03
2. Priming and preparation	03
3. Wall installation	05
4. Floor installation	06

1. Introduction

PermaSEAL Self-Adhesive Tanking Membrane is designed to protect below-ground structures from water ingress. The high performance, puncture and tear resistant Valeron film bonded to a high tack bitumen adhesive offers the user a highly efficient way to tank an external below ground structure.

- Reliable waterproofing of subgrade basement walls and foundation slabs that are impacted by soil moisture and non-accumulating seepage water.
- Permanent protection from capillary rising damp and vapour barrier under the screed.
- External vapour barrier on waterproof concrete walls.
- Waterproofing of construction joints in prefabricated units of waterproof concrete.

PermaSEAL Self-Adhesive Tanking Membrane can be safely and quickly installed in a similar way to wallpaper application. The sheet can be applied straight from the roll. The sheet requires no time to set, it is immediately water and raintight. Backfilling the excavation can take place immediately after application is complete. Approx. 1.5 mm thick and weighing approx. 1.6 kg/m², PermaSEAL Self-Adhesive Tanking Membrane features a defined layer thickness and is flexible enough to safely bridge any cracks in the substrate. Surfaces should be treated with a bitumen-based primer before application (ICF requires a water-based primer).

PermaSEAL Self-Adhesive Tanking Membrane should only be installed in dry weather and at temperatures between 5 °C to 30 °C. When outdoor temperatures are high, PermaSEAL Self-Adhesive Tanking Membrane should not be stored, cut, or applied in bright sunlight. When temperatures are low, we recommend storing the material in a warmer environment. Applying the membrane with direct sunlight during colder days is also advisable to aid application. At very low temperatures, warming up the sheet with a heat gun will considerably enhance the adhesive effect.

Substrates should be smooth, dry, and free from dust. However, always make sure that they are compression-resistant, clean, and blocks/bricks are flush pointed. Aerated concrete or any substrate where air pockets are present, should be avoided. Level any holes or other surface defects with PermaSEAL Fillet Seal mortar. Uneven masonry where contact adhesion can be expected to fall short of 80% (e.g heavily undulating walls or honeycomb bricks) should be levelled with a 10mm levelling coat.

In basements made of brickwork, the head of the masonry should be protected from percolating water so that the outer wall does not become waterlogged. This is particularly important in cavity wall buildings. When applying PermaSEAL Self-Adhesive Tanking Membrane, take care to make sure that the sheets, especially the overlaps, are free from dust. Whenever necessary, use a slightly moist cloth to remove the dust from the overlap zone before gluing the sheets together. Foundation ledges should be smooth and free from dust. Cement slurry/laitance should be removed because it might flake off later on, causing the waterproofing to peel off.

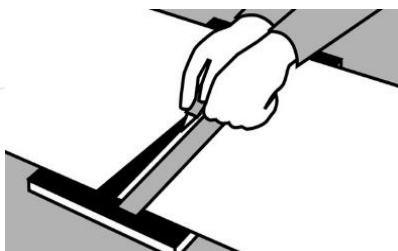
2. Priming and preparation



(Fig. 1/2) The junction between the masonry and the foundation should have a coved fillet. This can be achieved with PermaSEAL Fillet Seal. Prime all mineral substrates with a bituminous primer. The primer produces a slightly tacky surface that is ideal for waterproofing with cold applied self-adhesive sheets. Substrates should be as dry as possible so that the primer can partially penetrate into them. Wet substrates should be sealed with PermaSEAL Tanking Slurry a few days before the primer is applied. Cover the entire surface with primer and allow it to dry. **The drying time should be no less than 1.5 hours.**

The material consumption, which normally ranges between approx. 0.2 and 0.3 kg/m², as well as the drying time depend on the substrate and the temperature. Primed surfaces should be waterproofed within 2 - 6 hours (on the same day) as the primer will otherwise lose its optimal adhesion where dirt and dust will settle on it.

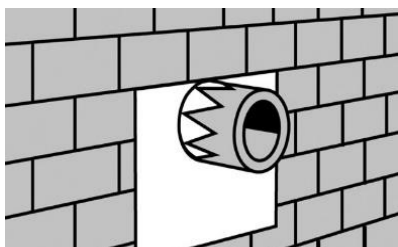
Before putting up the waterproofing sheets, check whether the primer is thoroughly dry. When the primer no longer stains on contact, it has hardened completely. Next, you should test its adhesion to the substrate by applying a narrow strip of PermaSEAL Self-Adhesive Tanking Membrane to the primed surface. Wait a little, then tear off the strip. If the primer comes off as you do so, adhesion is still inadequate and the primer has not yet dried sufficiently. In such a case, the primer will be usable later on, but not immediately. Adhesion is adequate if it takes a great deal of force to tear off the waterproofing strip.



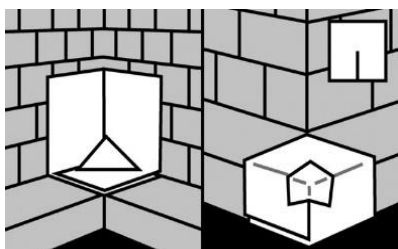
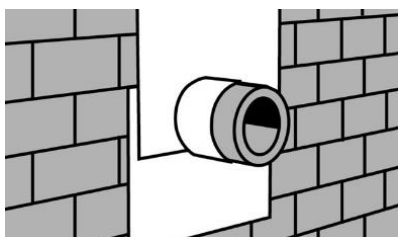
(Fig. 3) Cutting sheets to size: Before pulling off the backing paper, use a sharp knife to cut PermaSEAL Self-Adhesive Tanking Membrane to length and/or width and then roll it up again. For cutting we recommend using a firm wooden base such as a shuttering panel, for example.



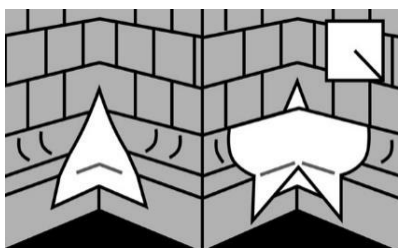
(Fig. 4) Before applying PermaSEAL Self-Adhesive Tanking Membrane to larger surfaces, cover all outside corners, edges, valleys, etc. with cuttings and reinforcement strips so that all risky areas are covered by two layers of the membrane when the installation process is complete. Strips should be approx. 200 - 300 mm wide. Remove the paper from one side and glue on the PermaSEAL Self-Adhesive Tanking Membrane strip. Next, mould the strip more closely to the surface, pull off the other half of the backing paper and seal the sheet.



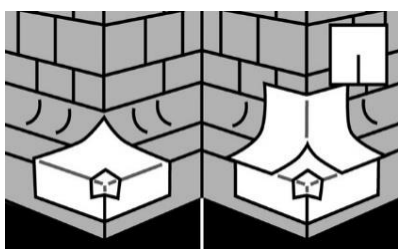
(Fig. 5/6) Pipes through membrane: Make two cuttings measuring approx. 300 x 300 mm. Mark the circumference of the pipe at one of the edges of each sheet, criss-cross it with star shaped cuts, and pull the two cuttings over the pipe from above and below. Make sure that they overlap by at least 100 mm and press down firmly. Next, apply a 100 mm strip of PermaSEAL Self-Adhesive Tanking Membrane to the transition between the wall and the pipe.



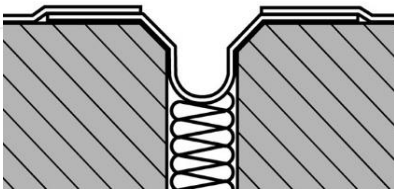
(Fig.7/8) Corners: For inside corners, cut out a square, make a cut into the middle and press it into the corner. For added safety, apply a triangular cut section to the middle. For outside corners, cut a square measuring 300 x 300 mm. Make a cut in the middle and glue it to the corner. For added safety, apply a triangular cut section.



(Fig. 9) For inside corners forming a valley, apply a triangular cut section into the corner. Next, cut a rectangular cutting from one corner to the middle and glue it to the corner.

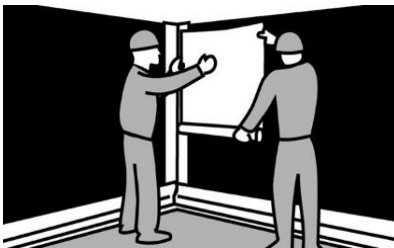


(Fig. 10) For outside corners forming a valley, cut a square measuring 300 x 300 mm, make a cutting into the centre and glue it to the corner. Next, make a central cut into a rectangular cutting and glue it into the valley. For added safety, apply a triangular cut section to the corner.



(Fig. 11) Expansion joints: Make a strip approx. 500 mm wide and cut the backing paper lengthwise approx. 200 mm away from both edges. Make a deep valley above the joint. Remove the pre-cut strip of backing paper along one edge of the sheet and fasten it along the joint. Mould the centre part into the joint. Remove the backing paper from the other edge of the sheet and fasten it to the wall. Fix the neighbouring large sheet with an overlap of 200 mm up to the joint.

3. Wall installation



(Fig. 12) If a wall has an inside corner, begin laying there. First cover the inside corner with a strip 30 cm wide. Align the sheet and remove the backing paper approx. 500 mm down from the top of the sheet. Working from the centre of the sheet and from the top down, fasten the sheet to the entire surface and press down well, avoiding air bubbles.



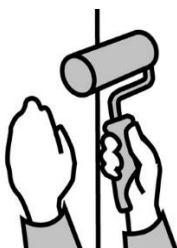
(Fig. 13) The strip affixed along one edge must be removed to permit bonding to the sealing compound below.



(Fig. 14) Align each subsequent sheet and fix it with an overlap of 100 mm as described above.

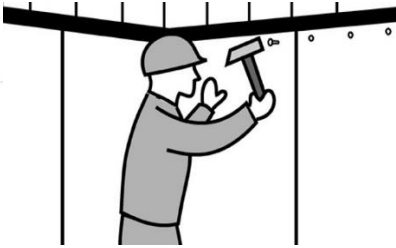


(Fig. 15) Outside corners should either be covered by a 300 mm strip or a sheet may be folded around the corner so as to extend approx. 150 mm to the other side.



(Fig. 16) Carefully rework and press down all overlaps, seals, and caps.

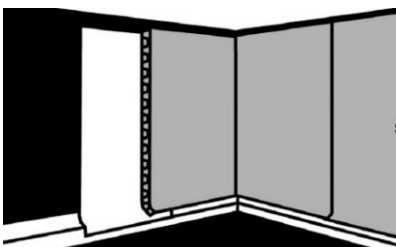
In basements walls, especially those exposed to sunlight, residual moisture may cause the waterproofing sheet to form blisters and detach itself locally from the substrate. However, this physical process is not critical. Nevertheless, sheets laid out vertically must have their upper edges secured mechanically. In masonry, for example, stainless steel nails may be used, spaced 500 mm apart and covered with PermaSEAL Overtape.



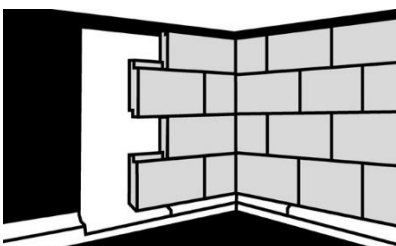
(Fig.17) Sheets applied to concrete substrates do not require mechanical fastening: they merely need pressing down firmly with a roller and sealing with PermaSEAL Overtape for additional safety. However, we recommend mechanical fixing in the event of adverse weather conditions and/or prolonged holdups.



(Fig. 18) Before using PermaSEAL Overtape, mineral substrates should be primed with a bituminous primer. Alternatively, metal profiles may be used which should be attached directly after laying.



(Fig. 19) To protect the waterproofing from mechanical damage during backfilling, PermaSEAL 8 or 20 Geodrain should be installed. The drainage sheet offers reliable protection and safe drainage.

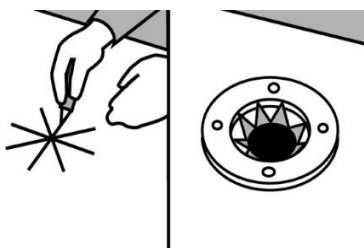


(Fig. 20) Another option is to install additional thermal insulation by gluing perimeter insulation boards to the PermaSEAL Self-Adhesive Membrane waterproofing with a solvent-free PMBC bitumen adhesive or any solvent free adhesive. Then, PermaSEAL 8 or 20 Geodrain Membrane may be applied on top of the perimeter insulation for protection and drainage. Excavations must be backfilled within 72 hours after the completion of the waterproofing job. Backfilling and compacting must be done in layers 300 mm thick. Avoid prolonged exposure of the water proofing membrane to direct UV sunlight.

4. Floor installation

Apply PermaSEAL Self-Adhesive Tanking Membrane cuttings and reinforcement strips of PermaSEAL Self-Adhesive Tanking Membrane to all edges, corners, valleys, etc. Strips should be 300 mm wide. Pull it off on one side and press down the PermaSEAL Self Adhesive Tanking Membrane strip. Mould down the strip more closely, pull off the other half of the backing paper and fix the strip. In outdoor applications, run the strip at least 150mm up the wall.

Inlet collars



(Fig. 21) First install the inlet. Cover it with a 600 mm square cutting of PermaSEAL Self-Adhesive Tanking Membrane, make criss-cross cuts across the inlet opening, mould the sheet down, and fix it. When laying out large sheets later on, run them across the previously installed inlet, make criss-cross cuts across the opening, mould down, and fix so that the inlet is covered by a double layer of PermaSEAL Self-Adhesive Tanking Membrane.



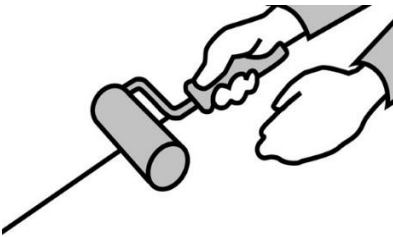
(Fig. 22) Cover the transition from the floor to the masonry with a strip no less than 300 mm wide.



(Fig. 23) Always start laying from the lowest point, working either with or across the gradient. After the sheets have been rolled out and cut to size (we recommend adding an extra of 50 mm), the next step is to align them. Begin by laterally aligning the segments you have trimmed. Next, roll them up again to the middle and cut the backing paper, taking care not to damage the waterproofing layer. Pull off the backing paper slowly and press the sheet down. Next, roll up the other half of the sheet, remove the backing paper, and press the sheet down.



(Fig. 24) The covering strip that runs along the edge of the sheet must be removed to permit the sealing compound below to bond with the overlap of the adjacent sheet. As described above, align the neighbouring sheet and glue the two sheets together with a 100 mm overlap.



(Fig. 25) To finish, press down all overlaps very carefully with a roller.

Upper edge sealing of the membrane outdoors



(Fig. 26) The membrane should reach at least 150 mm height on any surrounding walls; the height of the water-bearing level must be observed. Upper edges should be additionally secured with PermaSEAL Overtape. Mineral substrates must be primed with bituminous primer before PermaSEAL Overtape can be applied.

Capillary: General comment for vertical and horizontal application: In order to prevent capillary forces in the area of T-joints, it is strongly recommended to arrange a diagonal cut (100/100mm) at the end of the uncovering membrane.

Installation notes: PermaSEAL Self-Adhesive Tanking Membrane should not be applied to damp, frost filled surfaces or when the temperature is 5°C and falling or 25°C and rising. All surfaces must be primed before application. PermaSEAL Self-Adhesive Tanking Membrane is designed for use in positive side waterproofing situations, for example, on the outside of basement walls (where positive pressure will be exerted against it). In no instance should this product be used internally as a tanking membrane (negative side waterproofing).