responsible
waterproofing

INSTALLATION GUIDE WATERPROOFING SYSTEM FOR NON-WALKABLE ROOFS OR RAISED FLOOR BY PEDESTALS

SYSTEM **DRYSKIN TPO**

revestech®

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DRYSKIN TPO: Flexible self-protected membrane for waterproofing non-walkable roofs and raised floor by pedestals. It is composed of a polymeric membrane of high-performance thermoplastic polyolefins (TPO) extruded over non-woven polypropylene fibers for optimal adherence with tile adhesive C2 S1/S2 used for installation. Overlapped must be sealing by hot air welding.

1. **Preparation of the support.**

Check the stability and general conditions of the supports. The surface must be uniform and smooth, without any irregularities or protrusions that could pose a risk of puncture or breakage.
It must be clean and dry, free of dust and any other loose material that could affect the proper adhesion of the membrane. Check that the appropriate slopes are met at all points and the correct sizing of the expansion joints.

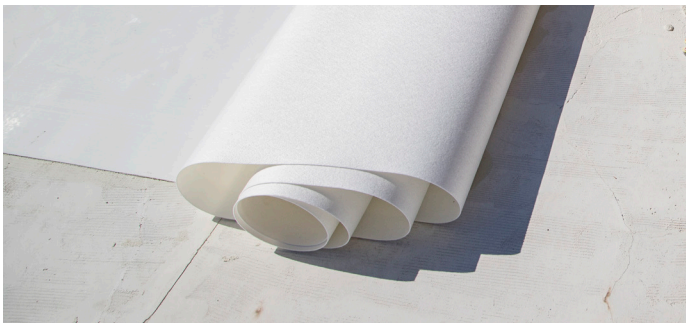
See attachment 1. Correct preparation of the support.

2. **Mark.**

Measure and mark exactly where the membrane will be placed with the help of a chalk line. Keep in mind that the DRYSKIN TPO membranes overlap each other by at least 5 cm.

3. **Restructuring of the membrane**

Once the surface to be waterproofed has been marked out and prepared, transfer the measurements to the membrane and make any necessary cuts. Cutting the necessary pieces to accommodate columns, corners, etc. Keep in mind that the membranes to be installed first will be those closest to the water collection points.
so that the overlaps of the of the membranes are in favor of the drainage.



4. **Laying the membrane**

apply C2 S1/S2 tile adhesive for fixed the membrane to the support. Keep in mind that due to
The different sun exposure conditions may alter the setting time of the cement, so it should be considered when mixing and deciding its consistency.
Apply a thin layer with a 6×6 mm notched trowel, in small sections to prevent it from drying, and always trowelling in a direction perpendicular to the arrangement of the membrane. Never install the membrane over the semi-set tile adhesive.

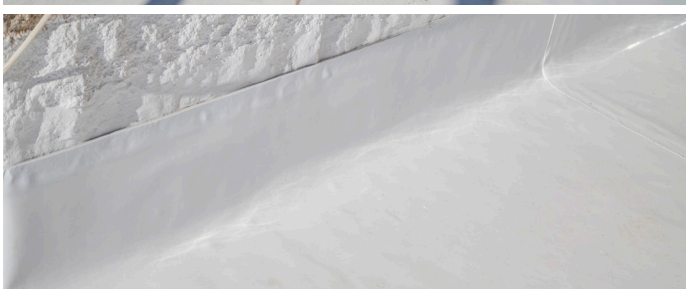
NOTE: In the case of refurbishment, apply the tile adhesive directly onto the old tile, taking the precautions mentioned in Annex 1 into account, considering, if necessary, the application of a primer layer to facilitate the adhesion of the tile adhesive to the old substrate.

ATTENTION: The overlap must always be clean and free of tile adhesive residue, apply carefully and clean the overlap after installation.

5. Spread the **DRYSKIN TPO** membrane over the tile adhesive always in the direction of the slope from the drainage pipes upwards or from the vertical wall, depending on the layout of the roof. Lay the membranes overlapping each other by a minimum of 5 cm

In encounters with vertical walls, raise the membrane a minimum of 20 cm above the level of the roof.

See attachment 2. Solutions for singular points.



6. Ensure the adherence of the membrane and Press the membrane hard on the structure with the help of a plastic
trowel making sure to eliminate all possible air bubbles.
It is important to wait a reasonable amount of time before sealing the overlaps, to allow the tile adhesive to dry completely and for any water vapor that may remain from the adhesive's own setting to dissipate.

ATTENTION: Once installed, it should be checked that the membrane is well adhered to the support across its entire surface.

7. **Welding of overlaps.**

Manual. It is advised to use a hot air torch with a 20 mm nozzle at a temperature of approximately 400°C and a Teflon roller for smoothing. These temperatures may vary according to the climatic conditions of the place where the work is located (humidity, temperature, wind, etc.)

RECOMMENDATION: It is advised to check the condition of the nozzles and the cleanliness of the hot air outlet slot. Before starting with joint sealing, we recommend making a line test welding to check the overlap resistance and not affect the membrane.
Start the process by performing a spot weld, spaced apart yes, 40 cm and at a distance of 3 cm from the edge of the membrane. Subsequently, a linear weld is performed with respect to the edge of the upper membrane at 3 cm with a 45° inclination, passing the Teflon roller at a distance of 1 cm from the weld.
Finally, the welding is done on the edge of the membrane at a 45° angle, passing the Teflon roller at a distance of 1 cm from the nozzle.

Hot air welders. If a hot air welding machine is used, the previous recommendations regarding the condition and maintenance of the machine and the operating temperature should be taken into account.

8. **Overlap at corners.**

Once we have the **DRYSKIN TPO** waterproofing membrane perfectly adhered to the support, we will take care of addressing the joints and interior and exterior corners by folding and sealing the material. Always incorporate the reinforcement pieces made with the membrane itself to achieve a completely watertight system.

See attachment 2. Solutions for singular points.

It is advised against overlapping more than three membranes and to avoid, as much as possible, the formation of triple points. If it were strictly necessary, we will adopt the same solution of custom reinforcement pieces and seal the entire perimeter with hot air.

ANNEX 1.

Correct preparation of the support..

According to the current Regulations, “CEC” Catalog of Construction Elements (Recognized Documents of the “CTE”) and Standard UNE 104416:2009: “Synthetic materials. Waterproofing systems for roofs made with waterproofing membranes formed with flexible synthetic membranes, the resistant support of the roof must be adequately conditioned to receive the waterproofing.

Check the stability and general conditions of the supports.
The surface must be uniform and smooth, with a roughness of less than or equal to 2 mm, and should not have irregularities or protrusions that could pose a risk of puncturing or breaking.

A preventive check of the residual moisture of the substrate must be carried out using a hygrometer. The maximum allowable value of residual moisture must be equal to or less than 3%.

It must be dry, clean, intact, stable, flat, and without roughness. Imperfections must be corrected beforehand using suitable materials for each task.

Any trace of oil, grease, efflorescence, loose old coating, old paint, or lime layers must be properly removed before applying the membrane. Immediately after cleaning, the supports should be dusted using an appropriate industrial vacuum cleaner.

Refurbishment. Existing coating.

In the case of ceramic finishes. Evaluate the state of adhesion to the support of the old coating by means of small taps. All loose and/or partially chipped tile must be removed and the gaps restored using specific tile adhesive. If the joints of the pieces of the old finish are missing or found to be in a state of degradation, it is advisable to redo them by reapplying the joint filler between pieces.

In the case of old waterproofing with bituminous membranes. Check the state of deterioration of the old membrane and remove any deteriorated, sclerosed, or clearly detached parts.

Check that there are no water stagnations under the old waterproofing. Any trace of water still present on the roof slab must be removed to prevent the possible appearance of condensation on the underside of the roof, once the new waterproofing work is completed.

For the cleaning of old ceramic or stone coating, it is advisable to polish and remove any encrustations, dirt, chemical residues, or construction materials. In this way, we make the surface slightly rough and absorbent, to improve and increase the adherence of the membrane. Immediately after polishing, remove the dust from the substrates using an appropriate industrial vacuum cleaner. In the case of some substrates, it may be advisable to use a primer layer to improve the grip of the cement adhesive.

ANNEX 2.

Solutions for singular points.

On the roofs, there are certain areas and specific points that require greater attention and special solutions. In accordance with the basic requirements of the CTE and according to Standard UNE 104416:2019 The points to consider are:

1. Perimeter fixation of the membrane. Encounter with vertical walls.

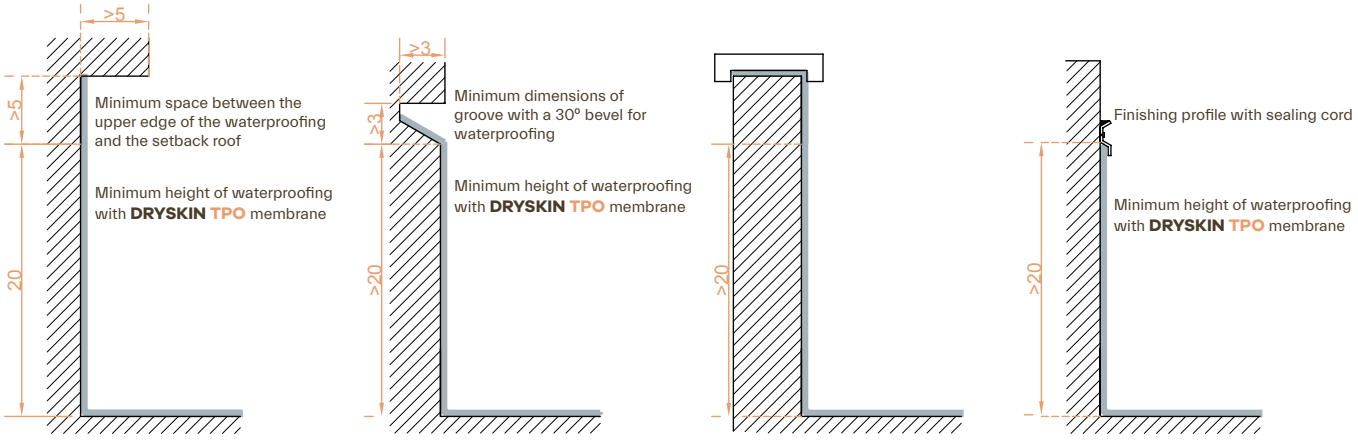
So that the water from precipitation or the water sliding down the vertical surface does not seep through the top edge of the Waterproofing, this finish must be done in one of the following ways.

*By means of a setback whose depth with respect to the external face of the vertical wall must be greater than 5 cm and whose height above the roof protection must be greater than 20 cm.

*Make a groove of at least 3×3 cm, capable of receiving the waterproofing, beveled to form approximately a 30° angle with the horizontal.

Extend the membrane's rise to the gable or end of the wall, creating a horizontal waterproofing and cover with a wall cap or coping stones. It can be a good solution when we have a low vertical wall.

By means of a stainless metal profile, which serves as a base for a sealing bead between the profile and the wall. If there is no tab at the bottom, the edge must be rounded to prevent the membrane from being damaged. It can be a good solution when we have a vertical concrete wall or prefabricated panels where it is not convenient to make setbacks.

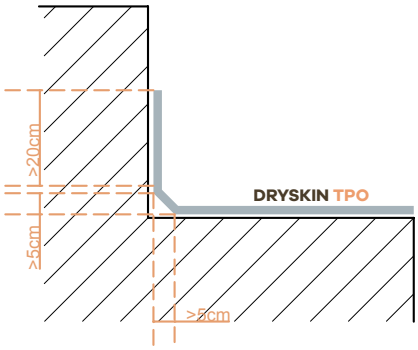


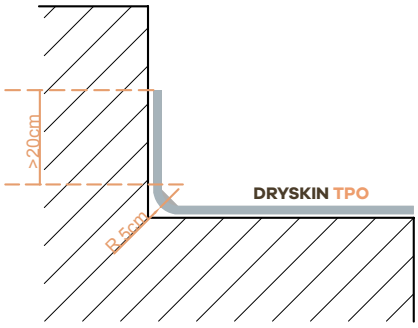
*flat steel profiles can be used and the end of the membrane can be welded.

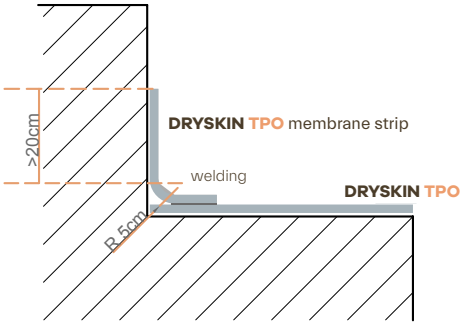
2. Internal and external angle. Corners and nooks.

On a deck, the corners and edges are the most complicated points to resolve and waterproof correctly. According to the basic requirements of the CTE DB HS, protective elements must be installed in corners and edges, made on-site with the same membrane, to a minimum distance of 10 cm from the vertex formed by the three planes.

To resolve the encounters at these points, one must start from the edge of the angle, leaving an excess of at least 10 cm of the roofing waterproofing membrane. Bend the excess material at a 45° angle towards one of the walls and then seal with hot air by welding the overlap







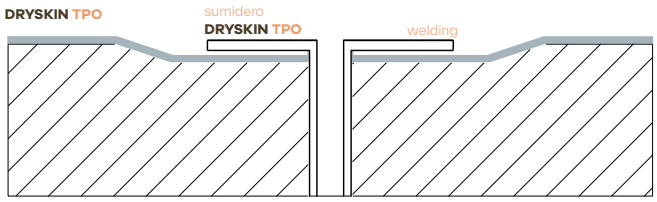
3. meeting with drainage or channel

According to the requirements of the CTE and current regulations, the drains or channels used as water evacuation points
on roofs, they must be made of materials compatible with the type of waterproofing used and meet a series of requirements.

Regarding the design of the cover and implementation:

*The drains must be 1 meter away from the corners and 50 cm from the walls. On low-slope roofs, a recess should be made in the support around the drains.
The recess must have dimensions suitable for the reinforcement pieces and an approximate depth of about 6 to 8 mm.

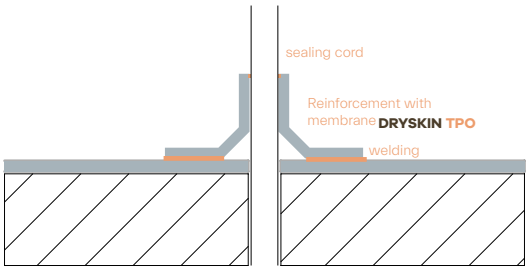
DRYSKIN TPO drains start from these requirements, facilitating their installation. In conjunction with the **DRYSKIN TPO** membranes, they guarantee a completely waterproof and watertightness system.

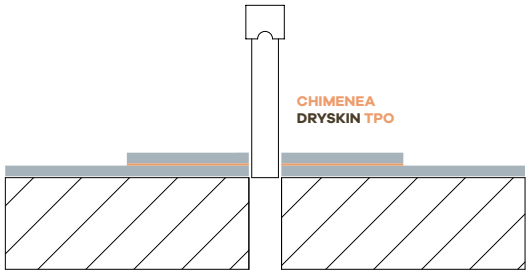


4. Encounter with passing elements

Many times we can find on the roofs the passage of vertical penetrating elements that can be pipes, vents, chimneys, etc.

To correctly resolve the waterproofing of these singular points, a strip of **DRYSKIN TPO** membrane should be cut to the width of the element's development with an excess of 3 cm that will serve for vertical welding overlap. The height of the strip should also have an excess of 3 cm for the welding overlap on the horizontal support.



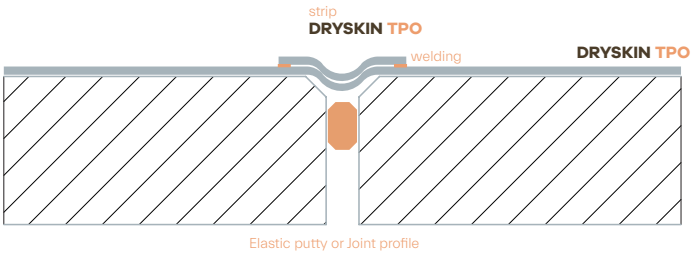


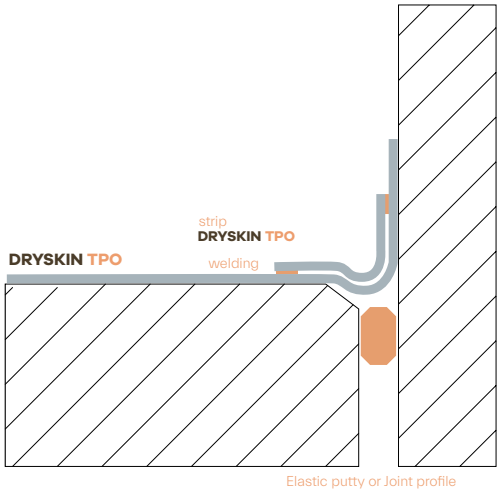
5. Expansion joints

Expansion joints must be arranged on every flat roof. These must affect the different layers of the covering, starting from the element that serves as a resistant support.

In general terms, according to the basic requirements of the CTE and current regulations, the distance between adjacent joints must be a maximum of 15 m, they must have blunt edges with an angle of approximately 45°, and the width of the joint must be greater than 3 cm. They must also be placed at a maximum of 5 m apart on non-ventilated roofs and 7.5 m on ventilated roofs. So that the panels between joints maintain the 1:1.5 ratio.

The constructive treatment of the expansion joint must be carried out by placing a sealant over a filler inserted inside it. The sealing must be flush with the surface.





6. Maintenance

To ensure the watertightness and proper functioning of the roof waterproofing system, it is essential to periodically check the good condition of the installation, especially after extreme weather conditions (torrential rains, hail, snow, etc.).

Check the good condition of the finishes and specific points, analyzing visual defects and ensuring that the fastening is still in good condition.

Remove any sediments that may accumulate on the roof and clean the drainage systems to prevent blockages.