Technical data sheet

Modified APP waterproofing membrane

# EVOTEC PLUS

## Waterproofing membrane

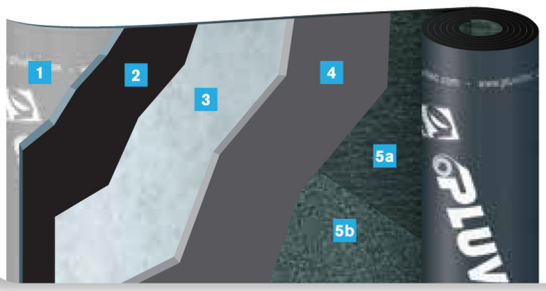
### Description

Pre-fabricated waterproofing membrane made of distilled bitumen and plastomeric polymers (APP) having a woven non woven single strand composite polyester reinforcement, which provide the membrane with good mechanical characteristics and excellent dimensional stability.
The PA versions are self-protected on the upper face with mineral slates which reduce superficial heat absorption improving the durability of the membrane.
The self-protected versions have a side selvedge of 10 cm and upon request a head selvedge of 15 cm, to improve adhesion between the sheets.

### Stratigraphy

1. PE film
2. Waterproofing mass
3. Single strand composite polyester fabric
4. Waterproofing mass

5a. PE film
5b. Mineral finish




### Methods of application

For the application of the membrane the use of heat is generally used by means of a gas torch or specific hot air machine. Use protective devices required by law. The application by heat is not suggested when on heat sensitive materials (polystyrene insulation).

- Coordinate the operations in a way to not cause damage to the construction elements and underground structure. Avoid to leave the structure for the night or for periods of prolonged work interruptions without having been properly sealed.
- The application surface must not have depressions, to avoid the ponding of rain water and must have a sufficient slope to guarantee a regular run off of rain. Normally this is obtained with a slope of 1.5%.
- The water drainage spouts should be sufficiently big enough to allow for rain water to be eliminated in an efficient way.
- Prepare cementitious substrates, including verticals and details, with a bituminous primer either by brush or airless, approx. 300/400 gr/m$^2$.
- Allow this preparation layer to dry before proceeding with any other operation.
- With prefabricated constructions, apply a suitable reinforcing strip along all joints. In the presence of construction joints, prefabricated panels or metal decks, suitable expansion joints are to be considered.

The membranes must be applied to the substrate fully bonded. In any case, when in the proximity of the head laps, the membrane must be applied for at least 100 cm; furthermore all details, perimeters, verticals, change of slope as well as projecting area must be fully bonded.
For further information and news it is recommended to consult the PLUVITEC technical literature; our Technical Office is always available to evaluate particular problems and to provide the necessary assistance to best apply our waterproofing membranes.

## Fields of use

CE

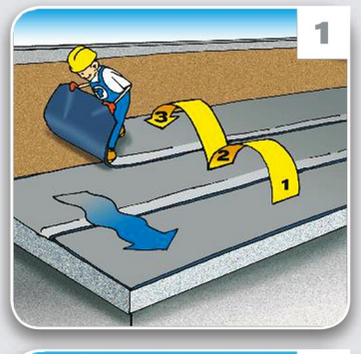
| | N° layers | | | Method of application | | | | | | Type of application | | | Type | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Single Layer | Double Layer | Multilayer | Torch | Hot Air | Mixed (Torch / Air) | Cold Bond Glue | Mechanical Fixing | Thermo Adhesive / Self Adhesive | Fully Bonded | Partially Bonded | Loose Laid | Complimentary Layer | Top Layer | Heavy Protection | Anti-root | Other Uses |
| **EN13707 *Continuous roofs* (Certificate n° GB14/92056)** | | | | | | | | | | | | | | | | | |
| **EVOTEC PLUS P 4 MM** | ▪ | ▪ | ▪ | ▪ | | | | ▪ | | ▪ | | | ▪ | ▪ | | | |
| **EVOTEC PLUS PA 4 MM** | ▪ | ▪ | ▪ | ▪ | | | | ▪ | | ▪ | | | | ▪ | | | |
| **EN13859-1 *Under roof tile*** | | | | | | | | | | | | | | | | | |
| **EVOTEC PLUS PA 4 MM** | ▪ | ▪ | ▪ | ▪ | | | | ▪ | | ▪ | | | | ▪ | | | |
| **EN13969 *Retaining walls* (Certificate n° GB14/92056)** | | | | | | | | | | | | | | | | | |
| **EVOTEC PLUS P 4 MM** | ▪ | ▪ | ▪ | ▪ | | | | ▪ | | ▪ | | | ▪ | ▪ | | | |

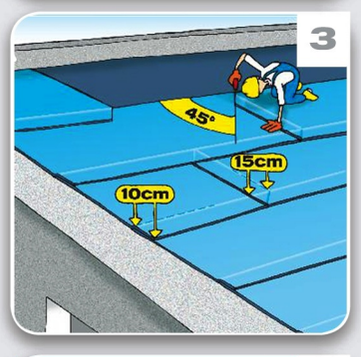
The waterproofing membrane based on distilled bitumen and polymers, as shown in this data sheet does not require the issue of a MSDS, because it does not contain dangerous substances. The information data sheet for the proper use of products is available.

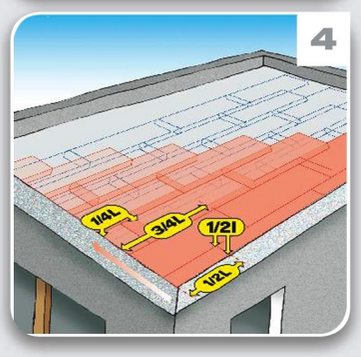
# EVOTEC PLUS

technical data sheet

## How to apply






## Application

- On cementitious surfaces and similar apply, by roller or airless, bituminous primer, approx. consumption 300 gr/m².
- Apply by torch application a 25 cm strip of membrane reinforced with polyester along all vertical up stands.
- To have all overlaps with the slope, position the membrane always starting from the lowest point. (Draw. N.1)
- Position the membrane sheets staggered, avoiding to create any overlaps against the slope and the drains. (Draw. N.2)
- Cut the corners of membrane sheet which will be laid under the next sheet at a 45° angle (10 x 10 cm). (Draw. N.3)
- The joints, both side and head, must be respectively overlapped by 10 & 15 cm. (Draw. N.3)
- The second layer of membrane will be applied astride and over the first one, always in the same direction, and approx. 1/4 of its length from the previous sheet. (Draw. N.4)
- The bituminous membrane will be applied with a propane gas torch to the substrate. It is necessary to heat the entire surface, except for the side & head laps, making sure that the compound forms a liquid mass in front of the roll to assure that it saturates any superficial porosity.
- The side laps (10 cm) and head laps (15 cm) will be heat welded with an appropriate torch; during this stage the overlaps should be pressed by using a roller (15 kg) from which a bead of compound should flow and therefore avoiding to have to iron the overlaps.
- Apply the vertical membrane sheet having the same characteristics of the waterproofing membrane and dimensions equal to the width of the roll, making sure that it overlaps the horizontal one by at least 10 cm, heating it with a gas torch and squeezing it with a trowel until a bead of compound appears from underneath.
- The height of the verticals must be equivalent or superior to the finished surface by at least 15 cm.

## Recommendations

To best use the technical characteristics of bituminous membranes and guarantee the maximum performance and durability of the jobs where they are used, some simple but fundamental rules must be respected.

- The rolls are to be stored in an upright position, preferably indoors in a dry and ventilated area, away from heat sources and avoiding to stack them one on top of the other to avoid possible deformations which may compromise the application. When storing with original packaging, pallets should not be stacked.
- The rolls shall be kept in a warm or heated storage area during application, should the workability of the material deteriorate or become stiff and difficult to install during application, these should be returned to the heated storage area and substituted with new rolls. The rolls that are temporarily stored on the roof before application, shall be kept elevated by being left on their own pallets and shall be covered and protected from the weather.
- The application surface must be smooth dry & clean.
- The application surface must be previously treated with a suitable bituminous primer, to eliminate dust and enhance the adhesion of the membrane.
- The application surface must not have any depressions, to avoid water ponding, and must have a slope which is sufficient enough to guarantee the run off of rain water (min. 1.5 %).
- In situations of application on vertical surfaces superior to 2 meters or on very sloped substrates, apply suitable mechanical fixings to the head laps, after which they will be sealed when torching the head laps.
- The application must be done at temperature higher than + 5°C.
- The application must be interrupted in adverse weather conditions (high humidity, rain, etc.).
- The materials without mineral self-protection or P+V, used as a top layer (cap sheet), can be painted with an aluminium coating to improve and extend the performance and life expectancy, the material should be allowed to oxidize approx. 3-6 months before being coated. An alternative, depending on the type of construction, it is possible to use heavy protection (floating pavements, stone, etc.).
- The pallets on which the rolls are packaged are intended for normal warehouse use.
- The materials on stock should be rotated following a first in first out rotation.

## Technical data

| Technical Characteristics | Measure Units | Reference Norm | Plain | Mineral |
|---|---|---|---|---|
| Type of reinforcement | | | 180g/m2 Polyester spundbond | |
| Upper face finish | | | PE film | Mineral |
| Lower face finish | | | PE film | |
| Length | m | EN 1848-1 | 10 | |
| Width | m | EN 1848-1 | 1 | |
| Thickness | mm | EN 1849-1 | 4 | 4 on mineral |
| Cold flexibility | °C | EN 1109 | -5 | |
| Flow resistance | °C | EN 1110 | 120 | |
| Tensile strength L / T | N / 5 cm | EN 12311-1 | 800/700 | |
| Elongation at break L / T | % | EN 12311-1 | 45/50 | |
| Softening Point | °C | ASTM D36 | >150 | |
| Tearing resistance L / T | N | EN 12310-1 | 180/180 | |
| Static puncture resistance | kg | EN 12730 | 25 | |
| Dynamic puncture resistance | mm | EN 12691 | 1250 | |
| Dimensional stability | % | EN 1107-1 | 0,5 | |
| Fire resistance | | EN 13501-5 | F ROOF | |
| Fire reaction | | EN 13501-1 | F | |
| Watertightness | kPa | EN 1928 | 60 | |

Note : The above shown techincal data are typical results obtained to the best of our knowledge from our quality control records. Extra details can be provided upon request.
In accordance to the standard, a variation of 5-10% is expected

## Sizes & packing

| | P 4 mm | PA 4 mm |
|---|---|---|
| Rolls size [m] | 10x1 | 10x1 |
| Rolls per pallet | 24 | 23 |
| Square meters per pallet [m²] | 240 | 230 |

Sizes & packing may vary depending on the type of transportation. The technical data given is based on average values obtained during production. Pluvitec reserves the rights to change or modify the nominal values without prior notice or advice.

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Azienda con sistema certificato
ISO 9001 ISO 14001 OHSAS 18001