

# ROOFING IN TPO WITH GREEN ROOF (SOPRANATURE)

Warm roof: with sealing element placed on top of the thermal insulation  
**TOTALLY INDEPENDENT SYSTEM • REINFORCED CONCRETE SUBSTRATE**

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## ■ SUPPORTING ELEMENT or SUBSTRATE

The surface must:

1. Be smooth and free from debris and irregularities that may cause damage to the layers above
  2. Be stable over time
  3. Be chemically compatible with the roof system components
  4. Have an adequate slope. A flat or sub-horizontal roof must have a slope ranging from 1.5 and 5 %.
- Important Note: structural load capacity must be considered before choosing and specifying each particular system. The structure's ability to support the additional weight (dead and live load) of a SOPRANATURE system must first be evaluated and approved by a professional engineer charged to the client.

## ■ VAPOUR BARRIER

It depends upon the hygrometry of the underlying structures. For further details please refer to the booklet "Vapour Barrier".

A vapour retarder may consist of:

- VAPOR FLAG polyethylene film
- Bitumen: **ELASTOVAP**
- Bituminous polymer membrane: **SOPRAVAP 3 in 1**

## ■ INSULATION ELEMENT

- It must have an adequate compressive resistance (UNI EN 826).
- The insulation boards should be fully bonded in order to avoid unabsorbed water and allow the overlaps to be adequately hot air welded.
- Compatible with the warm roof system.
- Laying:
  - dry laid on **VAPOR FLAG**.
  - dry laid on **ELASTOVAP**.
  - totally adherent by **SOPRAVAP 3 in 1**.

## ■ SEALING ELEMENT

**FLAGON EP/PV** synthetic liner manufactured in TPO/FPO modified polyolefin, dimensionally stabilised with a layer of glass fibre (50g/m<sup>2</sup>), resistant to weathering, ultraviolet rays and to root growth. It has a signal layer and it is hot air welded on the sheet overlaps.

The perimeter fixing at the base of the upstand must be performed with **Flag pre-drilled bar** in galvanised sheet iron.

Insert **Flag anti-puncturing joint** at the junction between two adjacent bars and hot-weld the tear prevention curb **FLAGOFIL TPO**.

**Anti-root membrane, FLL certified.**

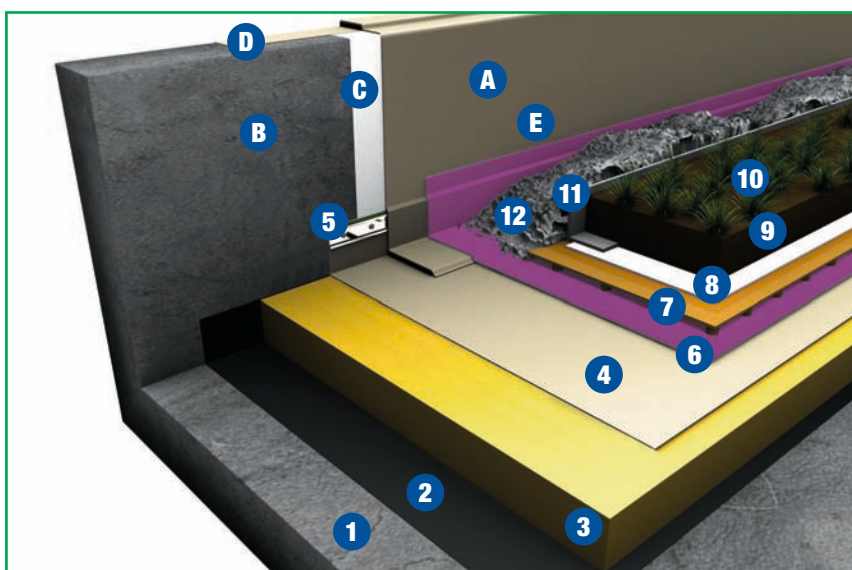
## ■ PROTECTION LAYER

**FLAGON TS** anti-puncturing liner made of a coated PVC film, 0.40 mm thick coupled to 120 g/m<sup>2</sup> non-woven felt in polyethylene. The unrolled sheets must be welded on the outside edges to provide a complete homogeneous protection layer.

## ■ SOPRANATURE SYSTEM

Installation of green roof system by means of SOPRANATURE package as described below.

	FLAGON EP/PV		
	STANDARD SYSTEM	OPTIMUM SYSTEM	REINFORCED SYSTEM
Finishing	SOPRANATURE	SOPRANATURE	SOPRANATURE
Protection layer	FLAGON TS	FLAGON TS	FLAGON TS
Sealing element	<b>EP/PV - 1.8 mm</b>	<b>EP/PV - 2.0 mm</b>	<b>EP/PV - 2.4 mm</b>
Insulation element	YES	YES	YES
Vapour Barrier	YES	YES	YES
Slopes	1.5 % ≤ P ≤ 5 %	1.5 % ≤ P ≤ 5 %	1.5 % ≤ P ≤ 5 %



### Horizontal surface

1. Supporting element
2. Vapour Barrier
3. Insulation element
4. **FLAGON EP/PV**
5. Perimeter fixing by pre-drilled bar
6. Protection layer
7. SOPRALITHE/SOPRADRAIN
8. SOPRAFILTRE
9. SOPRAFLOOR
10. SOPRANATURE vegetation layer
11. Curb
12. Perimeter in gravel

### Vertical surface

- FLAGON EP/PV**
- h<50 cm FLEXOCOL TPO vertical gluing layer  
h>50 cm mechanical fixing
- Separating layer in non-woven felt (non-adhered roof system)
- Possible finishing elements:
  - Flagmetal termination strip and flashing
  - Flagmetal strip under cap
  - Flagmetal perimeter profile
- Provide mechanical anchoring on the vertical upstands (galvanised sheet iron or equivalent)

## SOPRANATURE SYSTEM

It must be in accordance with all the technical specifications applicable to SOPRANATURE vegetated roofing systems. The green roofing system includes 4 components:

1. Drainage panel (**SOPRALITHE** or **SOPRADRAIN**);
2. Filter (**SOPRAFILTRE**);
3. Growing medium (**SOPRAFLOOR**);
4. Vegetation layer (**SOPRANATURE**) different systems are available: extensive (**Toundra**, **Pampa**, **Garrigue**) and semi-intensive (**Green e Landes**).

- It is recommended that a Soprema representative be consulted to find the right technical and financial solutions to suit the particularities of any individual project (in accordance with the selected roof system and the geographical weather conditions).

Flag S.p.A. - SOPREMA GROUP

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