



## DANOPOL+ FV 1.5

Single Ply PVC-p 1.5 mm membrane. Hot-air welded.



BBA 14/5118 (2)



EPD S-P-00691

1.2 mm PVC-P single ply membrane, reinforced with fibre glass mat. The DANOPOL "+" range has an enhanced formula with improved weather and UV radiation resistance properties. This formula also integrates a biocide that keeps the membrane protected against a wide range of harmful microorganisms.

### Presentation

- Length (cm): 1500
- Length measurement standard: EN 1848-2
- Width (cm): 180
- Width measurement standard: EN 1848-2
- Thickness (mm): 1.5
- Colour: Anthracite
- Product code: 210205

### Technical Data

Concept	Value	Standard
Mass per unit area (nominal) (kg/m <sup>2</sup> )	1.9	-
External fire behaviour	Froof	EN 13501-5
Longitudinal & transversal dimensional stability	< 0.09	EN 1107-2
Water vapour permeability (μ)	20.000 ± 30%	EN 1931
Flexibility at low temperature (°C)	< -30	EN 495-5
Reaction to fire	E	EN 13501-1

Concept	Value	Standard
Resistance to static loading (kg)	> 55	EN 12730 Método B
Resistance to root penetration	Pasa	EN 13948
Longitudinal & transversal tensile strength (N/5cm)	> 750	EN 12311-2 Método A
Longitudinal & transversal tensile strength (N/mm <sup>2</sup> )	>10.3	-
Longitudinal resistance to tearing (nail shank) (N)	> 150	EN 12310-2
Transversal resistance to tearing (nail shank) (N)	> 150	EN 12310-2
Resistance to impact, A (mm)	> 700	EN 12691
Overlaps resistance (Shear of overlaps) (N/50mm)	> 600	EN 12317-2
Overlaps resistance (Peeling of overlap) (N/50mm)	> 250	EN 12316-2
Hazardous substances	PND	-
Emissivity	0,86±0,02	ASTM C1371-04a(2010)e1

## Additional Technical Data

Concept	Value	Standard
Visible defects	Pasa	EN 1850-2
Nominal minimum thickness	1.5 (-5%; +10%)	EN 1849-2
Mass (kg/m <sup>2</sup> )	1,9 (-5%; +10%)	EN 1849-2
Loss of elongation at break (UV 5000 h)	< 10 < 10	EN 1297, EN 12311-2 EN 1297, EN 12311-2
Loss of plasticizers (mass change at 30 days) (%)	< 4.5	EN ISO 177
Flatness (mm)	< 10	EN 1848-2
Straightness (mm)	< 50	EN 1848-2
Hail resistance (soft Support) (m/s)	50	-
Hail resistance (hard support) (m/s)	28	EN 13583-2012
Resistance to static punching (N)	> 1200	UNE 104416 (b)

## Environmental Information

Concept	Value	Standard
Post-consumer recycled content (%)	NDP	-
Pre-Consumer recycled content (%)	NDP	-
Manufactured in	Fontanar - Guadalajara (España)	-

## Instruction for Use

Preparation of the substrate:

- The surface of the base substrate shall be resistant, uniform, smooth, clean, dry and free of foreign bodies. In the case of thermal insulation, the boards shall be laid in a grid and without gaps of more than 1 mm between boards.
- Polyester geotextiles, type Danofelt PY 300 or higher, shall be used as a separating or protective layer.
- The dimensional stability of the DANOPOL FV sheet ( $\leq 0.09\%$ ) means that no perimeter anchoring is required in the horizontal plane in the execution of ballasted systems made with this sheet, in compliance with the UNE 104416 standard.
- In the vertical plane, the profile is fixed so that the membrane rises a minimum of 20 cm above the surface of the pavement. A strip of sheeting is welded to the profile of the vertical facing and overlapped and welded to the membrane on the horizontal plane. It is recommended to use laminated profiles with a flange at the top, such as laminated profile B (with flange) for anchoring to the vertical facing. Stainless steel profiles, such as galvanised sheet metal, aluminium profiles, etc. can also be used.
- The joint between the profile fixed to the facing and the brickwork facing is always sealed with an elastic and rot-proof mastic: ELASTYDAN PU 40 Grey.

Singular points:

- Where the roof meets vertical faces and elements that pass through the membrane, the membrane must rise at least 20 cm above the level of the finished roof, or higher if necessary, so that the upper edge of the membrane is always above the maximum foreseeable water level on the roof. To improve the aesthetics of the finish on the vertical facing, the adhesive, GLUE-DAN PVC, can be used to adhere the sheet to the vertical facing.
- To improve the strength of the overlaps, especially on green roofs, it is advisable to seal the overlap line using DANOPOL LIQUIDO in the same colour, applied with a bottle.
- When the height of the parapet does not exceed 20 cm, or there is no perimeter parapet, the delivery to these parapets or edges of the slab can be made by means of a laminated sheet profile in the form of an angle, C-laminated profile (finishing angle with drip) that hangs on the outside of the facing in the form of a drip. This profile shall be fixed to the facing by its horizontal flange, which shall be wider than 6 cm, by means of anchors located at a distance of less than 25 cm from each other. The membrane shall be welded to the laminated sheet metal profile in such a way that the head of the screws is concealed.

Laying of the waterproofing membrane:

- The membrane shall be laid floating on the substrate and perpendicular to the line of maximum slope of the roof. The roll of the next row is laid out, welding the overlap. The sheets shall be laid in such a way that no transverse overlap of each row is aligned with any of those of the adjoining rows.
- Anchoring to the structural support must be done by ballasting with gravel, slabs or paving.
- The joint between sheets shall be made either by thermoplastic welding with a hot air welder or by

using a chemical agent THF (tetrahydrofuran). The overlaps shall be at least 5 cm. and the welding of the lower sheet with the upper one shall be at least 4 cm. In the case of thermoplastic welding, immediately after welding, the joint shall be pressed with a roller, thus ensuring a homogeneous joint. To check the joints, a physical check shall be made using a blunt metal needle (with a rounded tip with a radius between 1mm and 3mm), passing it along the edge of the joint.

- No more than three sheets shall be joined at a single point.
- In T-joints (three sheets intersecting at one point), the bottom sheet shall be chamfered to prevent capillary leakage or be reworked with the hot air welder.
- The apex of the angle formed by the transverse and longitudinal edges of the top piece shall be cut into a curve.

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