



## DANOPOL+ HSF 1.5

Single Ply PVC-p 1.5 mm  
Fleecebacked membrane. Adhered.



BBA 14/5118 (3)

**EPD**<sup>®</sup>

EPD S-P-00691

1.5 mm PVC-P single ply membrane, reinforced with polyester net carrier and, a 300gr geotextile fleece bonded to the underside. Featuring a 6cm overlap on its right longitudinal side, this product enables effortless overlaying and welding to the adjacent membrane. 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
- Width (cm): 180
- Thickness (mm): 1,5
- Logistic class: (C) Products usually in stock, maximum availability in less than 7 days
- Product code: 210312

### Technical Data

Concept	Value	Standard
Longitudinal elongation at break (%)	> 50	-
Transversal elongation at break (%)	> 60	-
External fire behaviour	Froof	EN 13501-5
Longitudinal & transversal dimensional stability	< 0.3	EN 1107-2
Humidity resistance factor	20.000 ± 30%	EN 1931
Mass per unit area (nominal) (kg/m <sup>2</sup> )	2.2	-

Concept	Value	Standard
Water vapour permeability (m)	20.000 ± 30%	EN 1931
Flexibility at low temperature (°C)	< -30	EN 495-5
Reaction to fire	E	EN 13501-1
Resistance to static loading (kg)	> 60	EN 12730 Método B
Resistance to root penetration	Pasa	EN 13948
Longitudinal & transversal tensile strength (N/5cm)	> 1500 / > 1300	EN 12311-2 Método A
Longitudinal resistance to tearing (nail shank) (N)	> 400	-
Transversal resistance to tearing (nail shank) (N)	> 400	-
Overlaps resistance (Shear of overlaps) (N/50mm)	> 1200	EN 12317-2
Overlaps resistance (Peeling of overlap) (N/50mm)	> 300	EN 12316-2
Hazardous substances	NPD	-

## 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> ) ~ Standard	EN 1849-2	-
Mass (kg/m <sup>2</sup> )	2.2 (-5%; +10%)	-
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

## Environmental Information

Concept	Value	Standard
Recycled content afterword the consumer (%)	NDP	-
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Manufactured in	Fontanar - Guadalajara (España)	-

## Standards and Certification

- In accordance with the UNE-EN 13491 standard on Geosynthetic Barriers. Requirements for use as fluid sealing membranes in tunnel and underground construction.
- In accordance with the UNE-EN 104416 standard for synthetic materials. Roof waterproofing systems made with waterproofing membranes formed with flexible synthetic sheets. Instructions, control, use and maintenance.
- In accordance with the UNE-EN 13361 standard for geosynthetic barriers. Requirements for use in the construction of reservoirs and dams.
- In accordance with the UNE-EN 13362 standard on Geosynthetic Barriers. Requirements for use in canal construction.
- In accordance with the UNE-EN 13956 standard for flexible sheets for waterproofing. Plastic and rubber sheets for waterproofing roofs.
- Conforms to UNE-EN 13967 of plastic and rubber anti-capillary sheets, including plastic and rubber sheets used for sealing buried structures.
- It complies with the requirements of the Technical Building Code (CTE).
- Complies with CE marking requirements.
- It has an Environmental Declaration of Product DAP No. S-P-00691.
- ETE 10/0054 "DANOPOL HS FM".

## Scope

- Channel waterproofing (EN 13362).
- Waterproofing of deck-type roofs with mechanical fastening systems, tertiary or industrial buildings (EN 13956).
- Waterproofing of reservoirs and dams (EN 13361).
- Waterproofing against fluids in the construction of tunnels and underground structures (EN 13491).

## Advantages & Benefits

- Good absorption of structural movements.
- High tensile strength.
- High resistance to piercing.
- Hot air welded: Flame-free system
- Great elasticity.
- High resistance to tearing.
- Allows for adaptation to any type of geometry.
- UV resistant.
- System bonded to the support by a projected adhesive.

## Support

- Concrete
- Mortar
- Insulation panels
- Wooden supports

## 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 must be adhered to the substrate using DANOTHERM with a gap of no more than 1 mm between boards.
- Before spreading the waterproofing membrane, apply DANOBOND adhesive to the entire surface of the horizontal substrate or insulation board, and mount the film on the vertical surface without the need for adhesive.
- The membrane must extend a minimum of 20 cm above the surface of the screed on the vertical surface.
- The joint between the profile fixed to the facing and the masonry facing is always sealed with an elastic, rot-proof mastic.

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.
- 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 (angle with drip cap) that hangs on the outside of the facing in the form of a drip cap. 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 20 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 adhered either on the substrate or on the previously fixed thermal insulation, 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.
- 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 upper part shall be cut in the form of a curve.
- For the transverse overlapping of sheets and if profiles are to be attached to the sheet, they shall be covered by welding 21cm DANOPOL HS 1.5 COVERSTRIP strips in the same colour.

## Handling, storage and preservation

- The product must be stored in a dry place protected from rain, sun, heat and low temperatures.
- This product is not toxic or flammable.
- It shall be kept in its original packaging, in a horizontal position and all rolls parallel (never crossed), on a flat and smooth support.

## Notice

- The information contained in this document and any other advice provided, are given in good faith, based on DANOSA's current knowledge and experience when products are properly stored, handled and applied, in normal situations and in accordance with the recommendations of DANOSA. The information applies only to the application (s) and the product (s) to which reference is expressly made. In case of changes in the parameters of the application, or in case of a different application, consult the DANOSA Technical Service before using the DANOSA products. The information contained herein does not exonerate the responsibility of the building agents to test the products for the application and intended use, as well as their correct application in accordance with current legal regulations. The product images used in our communications are indicative and may differ slightly in color and aesthetic appearance in relation to the final product. Orders are accepted in accordance with the terms of our current General Sales Conditions. DANOSA reserves the right to modify, without prior notice, the data reflected in this documentation. Website: **www.danosa.com** E-mail: **info@danosa.com** Telephone: **+34 949 88 82 10**