DANOPOL+ HSF 1.5

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

BBA 14/5118 (3)

EPD S-P-00691

1.5 mm PVC-P single ply membrane, reinforced with polyester net carrier and, a 300 g geotextile fleece bonded to the underside. Featuring a 6 cm 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. For use on flats roofs of 1:80 and in excess of 1:6 and for pitch roofs upto 70 degrees.

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: 210312

Technical Data

Concept	Value	Standard
Mass per unit area (nominal) (kg/m²)	2.2	-
Longitudinal elongation at break (%)	> 50	-
Transversal elongation at break (%)	> 60	-
Elongation at maximum force, longitudinal (%)	> 20	EN 12311-2 Método A
Elongation at maximum force, transverse (%)	> 20	EN 12311-2 Método A

Concept	Value	Standard
External fire behaviour	Froof	EN 13501-5
Longitudinal & transversal dimensional stability	< 0.3	EN 1107-2
Water vapour permeability (μ)	20.000 ± 30%	EN 1931
Flexibility at low temperature (ºC)	< -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	EN 12310-2
Transversal resistance to tearing (nail shank) (N)	> 400	EN 12310-2
Resistance to impact, A (mm)	> 800	EN 12691
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	-
Emissivity	0,86±0,02	ASTM C1371-04a(2010)e1

Addtitional Technical Data

Concept	Value	Standard
Visible defects	Pasa	EN 1850-2
Nominal minimum thickness	1.5 (-5%; +10%)	EN 1849-2
Mass (kg/m²)	2.2 (-5%; +10%)	EN 1849-2
Loss of elongation at break (UV 5000 h)	< 10< 10	EN 1297, EN 12311-2EN 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

Concept	Value	Standard
Hail resistance (soft Support) (m/s)	50	-
Hail resistance (hard support) (m/s)	28	EN 13583-2012

Environmental Information

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

Standards and Certification

- In accordance with the UNE-EN 13491 standard 'Geosynthetic barriers - Characteristics required for use in the construction of tunnels and associated underground structures'
- 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 has an Environmental Declaration of Product DAP No. S-P-00691.
- ETE 10/0054 "DANOPOL HS FM".

Scope

- Channel waterproofing (EN 13362).
- Mechanically fastened roof waterproofing systems (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
- System bonded to the support by a projected adhesive.

Support

- Insulation panels.*

Instruction for Use

- The membrane should not be installed in adverse weather conditions. It must not be laid in rain, snow, or heavy fog, nor if the temperature falls below 5ºC, unless precautions against condensation have been taken.
- Do not apply on wet or frozen surfaces.
- The membrane layers must always be installed with staggered overlaps and in such a manner that the laps fall in the direction toward the outlets.
- 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 by thermoplastic hot-air welding.
- A bonding percentage of 85-95% of the total roof area is considered acceptable.
- Attachment of DANOPOL HSF membrane may be achieved by full bonding, or loose laid (ballasted) with guidance from DANOSA technical services; the choice should depend upon the type of substrate and the required resistance to wind uplift pressure.

For single layer application direct to deck:

- The surface of the base substrate shall be resistant, uniform, smooth, clean, dry, and free of foreign bodies.
- Before laying the waterproofing membrane, apply Fleecebond Adhesive to the entire surface of the substrate in accordance with the applicable datasheet instructions.
- The membrane must terminate a minimum of 15cm above the surface of the finished roof surface level.
- Finished edges must be terminated in accordance with DANOSA UK recommendations (see standard details).

For adhered applications:

- Roll the DANOPOL or DANOPOL+ HSF 1.5 into position, allowing for 50mm side overlaps and 50mm head overlaps and cut to length. At perimeters and details, allow an additional 50mm to allow for mechanical restraint.
- Apply DANOSA UK FLEECEBOND Adhesive (see DANOSA UK Technical Datasheet) to the substrate only in accordance with DANOSA UK instructions.
- Position the next roll of DANOPOL or DANOPOL+ HSF 1.5, allowing for overlaps as previous, and seal with a minimum 30-40mm hot-air weld in accordance with DANOSA UK instructions.

- The overlaps shall be at least 4cm 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.

For system application:

- 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.
- The surface of the base substrate shall be resistant, uniform, smooth, clean, dry, and free of foreign bodies.
- Before laying the waterproofing membrane, apply Fleecebond Adhesive to the entire surface of the substrate or insulation board in accordance with the applicable datasheet instructions.
- Mount the film on the vertical surface without the need for adhesive.

Handling, storage and preservation

- The product must be stored in a dry place protected from rain, sun, heat and low temperatures.
- Easy to cut to adapt the dimensions to the work.
- No welding work should be carried out when the ambient temperature is lower than -5ºC for hot air welding, nor lower than + 5ºC for welding with THF or with Adhesives.
- 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**