



## DANOPOL FV 1.5

Synthetic membrane PVC plasticized.



BBA 14/5118 (2)

**EPD**<sup>®</sup>

EPD S-P-00691

DANOPOL FV 1.2 LIGHT GREY is a synthetic PVC plasticized membrane, reinforced with Fibre glass mat. Designed for flat roof waterproofing, U.V. resistant.

### Presentation

- Length (cm): 1500
- Width (cm): 180
- Thickness (mm): 1.5
- Logistic class: (A) Products in stock, available immediately
- Product code: 210029

### Technical Data

Concept	Value	Standard
Longitudinal elongation at break (%)	> 220	-
Transversal elongation at break (%)	> 220	-
External fire behaviour	Froof	EN 13501-5
Density (kg/m <sup>3</sup> )	1266	-
Longitudinal & transversal dimensional stability	< 0.09	EN 1107-2
Humidity resistance factor	20.000 ± 30%	EN 1931
Mass per unit area (nominal) (kg/m <sup>2</sup> )	1.9	-

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)	> 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	-
Transversal resistance to tearing (nail shank) (N)	> 150	-
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	-

## 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> )	1,9 (-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

Concept	Value	Standard
Resistance to static punching (N)	> 1200	UNE 104416 (b)

## Environmental Information

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

## 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.
- DIT 550R/20 "DANOPOL PENDIENTE ZERO"
- It has an Environmental Declaration of Product DAP No. S-P-00691.

## Scope

- Waterproofing against fluids in the construction of tunnels and buried structures.
- Waterproofing of reservoirs and dams.
- Channel waterproofing (EN 13362).
- Waterproofing sheet on the outside of walls.
- Membrane for waterproofing intensive and extensive, accessible and non-accessible roofs in buildings.

## Advantages & Benefits

- Good absorption of structural movements.
- High elongation at break.
- Easy soldering by hot air or THF solvent.
- Great dimensional stability.

- High resistance to root penetration.
- Allows for adaptation to any type of geometry.
- Product compatible with inverted roof systems.
- ROOFCOLLECT® European Recycling Programme for PVC materials.
- UV resistant.
- System with Environmental Product Declaration (EPD), type 3 ecolabel.

## Support

- Tiles
- Concrete
- Existing waterproofing
- 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 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.

## Indications and Important Recommendations

- Anchorage where two planes meet: anchorage shall be linear. The attachment line shall be installed as close as possible to the angle and shall never be located closer than 20 cm from the junction or meeting.
- Anchoring to the parapet: in the case of membranes fastened with strips or profiles, these must be installed leaving a gap at the junction points so that the sheet can absorb movements due to thermal effects. These gaps shall be covered by a strip of the waterproofing sheet, which shall be loose over the groove.
- When the filler is made by means of laminated profiles fixed on the upper edge of the strip going up the wall, they must be provided with a flap, at least on their upper part, which serves as a base for an elastic and rot-proof bead or seal with Elastydan PU 40 Grey, which covers the groove between the profile and the wall. If there is no flap on the underside, the edge must be completely rounded to prevent damage to the sheet.
- The anchoring of the plates or profiles to the skirt shall be carried out by lag bolts, when the base support is made of stone materials, or by self-tapping screws, in the case of wooden or sheet metal supports. Rivets can also be used in the latter case. The dowels, screws or rivets fixing these profiles shall never be more than 20 cm apart and shall withstand a permissible shear load of 480 N per anchorage point. Where it is not possible to fix the plates to a soft support (insulating panels, aerated concrete, etc.), the perimeter anchorage may be made by means of angle profiles fixed to the wall. In this case the fixings will have to be spaced less than 10 cm apart to compensate for the stress which becomes tensile rather than sharp.
- In renovation projects on old waterproofing, it may be necessary to remove existing materials or to use suitable separating layers (geotextiles, mortar layers, polyethylene films, etc).
- This product may form part of a waterproofing system, so all the documents referred to in the Danosa Solutions Manual must be taken into account, as well as all the regulations and legislation that must be complied with in this respect.
- A range of ancillary products is available for use with the membrane (Elastydan PU 40 Grey sealant, GLUE-DAN PVC adhesive, laminated profiles, corners, corners, corners, cups, pipe penetrations, etc.).
- The weldability and quality of the weld depend on atmospheric conditions (temperature, dampness), welding conditions (temperature, speed, pressure, pre-cleaning) and on the surface condition of the membrane (cleanliness, dampness). Therefore, the hot air machine must be adjusted to obtain a correct assembly.
- Weathering sheets are exposed sheets, so care must be taken when installing them.

- To avoid chemical incompatibilities, a DANOFELT PY 300 or higher geotextile separating layer shall be placed between this sheet and the geotextile: Bituminous products, or synthetic TPO/FPO and EPDM, extruded (XPS) or expanded (EPS) polystyrene-based products, rigid or foamed PU, etc.
- After the surface has cooled down, the welds shall be carefully checked by means of a punch. If any irregularity is detected in a hot air weld, it shall be reworked with the same procedure as described above.
- Special attention must be paid to the execution of the singular points, such as parapets (meetings with vertical and emergent elements), drains, expansion joints, etc.
- Appropriate safety measures must be taken as welding work can give off fumes which can be irritating.

## 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**