DANOPOL FV 1.5

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

BBA 14/5118 (2)

EPD S-P-00691

UV resistant synthetic plasticised PVC membrane reinforced with a fibreglass carrier for waterproofing applications.

Presentation

- Length (cm): 1500
- Length measurement standard: EN 1848-2
- Width (cm): 180
- Width measurement standard: EN 1848-2
- Colour: Light grey
- Thickness (mm): 1.5
- Product code: 210029

Technical Data

Concept	Value	Standard
Mass per unit area (nominal) (kg/m²)	1.9	-
Longitudinal elongation at break (%)	> 220	-
Transversal elongation at break (%)	> 220	-
External fire behaviour	Froof	EN 13501-5
Longitudinal & transversal dimensional stability	< 0.09	EN 1107-2
Water vapour permeability (m)	20.000 ± 30%	EN 1931

Concept	Value	Standard
Flexibility at low temperature (ºC)	< -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/mm²)	>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	-
Resistance to root penetration	Pasa	EN 13948

Addtitional Technical Data

Concept	Value	Standard
Visible defects	Pasa	EN 1850-2
Density (kg/m³)	1266	-
Nominal minimum thickness	1.5 (-5%; +10%)	EN 1849-2
Mass (kg/m²)	1,9 (-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
Hail resistance (soft Support) (m/s)	50	-

Concept	Value	Standard
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)	-

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.
- Complies with CE marking requirements.
- DIT 550R/20 "DANOPOL PENDIENTE ZERO"
- It has an Environmental Declaration of Product DAP No. S-P-00691.

Scope

- Protection against leaks in the construction of tunnels and buried structures.
- Waterproofing of reservoirs and dams.
- Channel waterproofing (EN 13362).
- Tanking membrane.
- Loose laid roofing membrane, including green roofs.

Advantages & Benefits

- Good absorption of structural movements.
- High elongation at break.
- Hot air welded: Flame-free system
- High 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

- Overlays*
- Insulation panels.*
- Concrete subsrates.
- Wooden subsrates.
- Mortar subsrates.

Instruction for Use

- The surface of the 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, similar to DANOFELT PY 300, shall be used as a separating or protective layer (300 gr/m² or higher).
- The dimensional stability of the DANOPOL FV membrane (≤ 0.09%) means that no perimeter anchoring is required in the horizontal plane in the execution of ballasted systems, in compliance with the 104416 standard.
- In the vertical plane, the profile will be fixed so that the membrane rises a minimum of 20 cm above the surface of the pavement. A strip of membrane 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.
- 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.
- To avoid chemical incompatibilities, a DANOFELT PY 300 or higher geotextile separating layer shall be placed between the membrane and the geotextile: Bituminous products, 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.

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