danosa

Thermal Insulation

DANOPREN FS

Rigid extruded polystyrene (XPS) foam board for thermal insulation of façades (ETICS / EWI).

EPD®

EPD-IES-0021369

EOTA European Organisation for Technical Assessment

ETE 18/1016

DANOPREN FS is a rigid extruded polystyrene (XPS) foam board with a rough surface finish on both sides and standard square edge. Comes in different thicknesses. Manufactured without CFC's, HCFC's or HFC's.

Presentation

- Length (cm): 125
- Width (cm): 60
- Thickness (mm): 80
- m² / package: 3.75
- Surface (m²): 0.75
- Colour: Blue
- Product code: 481020

Technical Data

Concept	Value	Standard
water absorption by total immersion (Vol.%)	≤ 1,5	EN 12087
Specific heat (J/kg·K)	1450	-
Capillarity	NULA	-
Coefficient of linear thermal expansion (mm/m·K)	0,07	-
Thermal conductivity declared (W/mK)	0,035	EN 12667
Compression strength (kPa)	CS(10/Y)200	EN 826
Dimensional Stability (%)	≤ 5	EN 1604

Concept	Value	Standard
Water vapour diffusion resistance factor	≥ 80	EN 12086EN 12086
Reaction to fire	E	EN 13501-01
Traction resistance perpendicular of the faces (kPa)	NPD	-
Water absorption by freeze-thaw cycling (Vol. %)	≤ 1	EN 12091
Thermal Resistance (m²K/W)	2,29	EN 13164
Min. service temperatures (ºC)	-50	-
Máx. service temperatures (ºC)	75	-

Addtitional Technical Data

Concept	Value	Standard
water absorption by diffusion (Vol.%)	≤ 3	EN 12088
Edge treatment	Borde recto	-
Surface	Rugosa, sin piel	-

Standards and Certification

- CTE DB-HE: Technical Building Code. Basic Document: Habitability. Energy saving
- In accordance with the UNE-EN 13164 standard for thermal insulation products for building applications. Manufactured extruded polystyrene (XPS) products.
- Directive 2010/31/EU. Energetic efficiency of the buildings
- Royal Decree 235/2013. Building energy certification
- BUREAU VERITAS company registration according to EN ISO 9001 granted to DANOSA's extruded polystyrene (XPS) manufacturing plant in Fontanar (Guadalajara).
- BUREAU VERITAS company registration according to EN ISO 9001 granted to DANOSA's extruded polystyrene (XPS) manufacturing plant in Leiria (Portugal).
- EU Regulation 305/2011. Construction products.

Scope

- Thermal insulation for exterior, ETICS facades.
- Thermal insulation in buildings.

Advantages & Benefits

- Long-term low leverl of water absorption.
- High long-term compressive strength.
- Eventually, reuse of the plates may be feasible depending on the original installation system.

- Adequate vapour diffusion resistance factor to ensure "breatheability" while avoiding the risk of interstitial condensation.
- Easy and safe handling of the irons: they are light, do not irritate the skin, do not release dust, maintain their physical integrity.
- Have a durability equal to the useful life of the building in which they are incorporated.
- Rough surface, which facilitates adherence of coatings.

Descriptive Memory

___ m² of ETICS or thermal bridge thermal insulation, by means of DANOPREN FS extruded polystyrene (XPS) rigid foam boards of ___ mm thickness, with a declared thermal conductivity λD = ___ W/m·K; declared thermal resistance RD = ___ m²·K/W; Euroclass E fire reaction classification, according to EN 13501-1 and designation code XPS-EN13164-T1-CS (10Y)200-WL (T)1,5-DS (70), according to EN 13164 harmonized technical specifications.

Instruction for Use

SATE FACADE

- DANOPREN FS XPS sheets are the only suitable sheets in the DANOSA XPS product range to be adhered to the supporting wall and then coated with the mortars of a SATE. This is due to the fact that they have rough surfaces, without extrusion skin, which greatly favours the adhesion and compatibility with the other materials of the SATE.
- Thanks to the high water vapour diffusion resistivity (m-factor) of DANOPREN FS boards, it is not necessary to install a vapour barrier, as the boards themselves are sufficiently resistant to the usual uses and climates to prevent the formation of interstitial condensation. In fact, thanks to this vapour diffusion resistant behaviour, compatibility with all types of coatings is favoured, as it is not critical, as it can be with other insulating materials, the fact that the ETICS coating could eventually be not very “breathable”.
- The compatibility of all materials involved in the system shall be checked. The document “ETAG 004”, a European reference prepared by EOTA (European Organisation for Technical Assessments), can be followed, which serves as a basis for granting the ETAG (European Technical Approval).
- In any case, it shall be checked that the supporting wall does not present major irregularities, and that the mortar does not protrude from the brick joints.
- Check that the DANOPREN FS boards have been correctly fixed to the supporting wall, either with adhesive on more than 80% of the surface, or with mechanical fixing and adhesive, following the recommendations contained in “ETAG 004”.
- DANOPREN FS boards are laid from bottom to top, in horizontal rows, with staggered joints in successive rows.
- The DANOPREN FS boards will have a good planimetric surface, which is checked with a spirit level.
- The joints between DANOPREN FS boards shall butt against each other, avoiding clogging with adhesive.
- The edges of the DANOPREN FS boards must not coincide with the edges of the recesses at the corners of the recesses.
- DANOPREN FS boards or half-boards must be installed at the corners of each building face, never smaller pieces.

Indications and Important Recommendations

- Check the continuity of the insulation, avoiding thermal bridges such as: outline of openings, perforations, perimeters, parapets, slabs, pillars, etc.
- Check for the existence of a voluntary quality mark, if stated in the project.

- Check for CE marking and Declaration of Performance.
- Check that the thermal insulation is as specified in the project.
- Check that the product has arrived on site in its original packaging, duly labelled and in perfect condition.
- Check that the installation corresponds to the project definition, in particular the order of the layers of each enclosure and the correct position of the insulation layer in relation to the others.
- Check compliance with the project specifications in terms of dimensions, thickness, declared thermal conductivity, declared thermal resistance, water vapour diffusion resistance factor and reaction to fire.

Handling, storage and preservation

- DANOPREN XPS boards suffer irreversible dimensional changes if exposed for a long time at high temperatures. The maximum working service temperature is 75ºC.
- DANOPREN XPS boards, in direct contact with substances or materials containing volatile compounds, are exposed to solvents attack. The adhesive manufacturer's recommendations concerning its compatibility with polystyrene foam should be taken into account.
- DANOPREN XPS boards can be stored outdoors. They are unaffected by rain, snow or ice. Accumulated dirt can be easily washed. Stored for an extended period of time, the boards should be protected from direct sunlight, preferably in their original packaging. When kept indoors, it should be properly ventilated.
- The XPS boards must be kept away from heat or flames sources. DANOPREN products contain a flame retardant additive to inhibit accidental ignition from a small fire source, but the boards are combustible and, if exposed to an intensive fire, may burn rapidly. Fire classification is based on small scale tests, which may not reflect the reaction of the products in its end use state under actual fire conditions.
- For further information, please refer to the product safety data sheet.

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**