

DANOPREN PR

Rigid extruded polystyrene (XPS) foam board for thermal insulation of large areas.



EPD[®]



EPD S-P-00501

DANOPREN PR is a rigid extruded polystyrene (XPS) foam board with shiplap edges at various thicknesses. Engineered to cover a larger surface in less time. Manufactured without CFC's, HCFC's or HFC's.

Presentation

- Length (cm): 260
- Width (cm): 60
- Colour: Blue
- Thickness (mm): 80
- m² / package: 7.8
- Surface (m²): 1.56
- Product code: 482007

Technical Data

Concept	Value	Standard
water absorption by total immersion (Vol.%)	≤ 0,7	EN 12087
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
Water vapour diffusion resistance factor	≥ 80	EN 12086EN 12086

Concept	Value	Standard
Reaction to fire	E	EN 13501-01
Fire reaction of the product in final condition of use (only to final apply deck cover, building normalized nº3 according to EN 15715)	B-s1, d0	EN 13501-1
Traction resistance perpendicular of the faces (kPa)	NPD	-
Water absorption by freeze-thaw cycling (Vol. %)	≤ 1	EN 12091
Thermal Resistance (m²K/W)	2.35	EN 13164
Min. service temperatures (°C)	-50	-
Máx. service temperatures (°C)	75	-

Additional Technical Data

Concept	Value	Standard
water absorption by diffusion (Vol.%)	≤ 3	EN 12088
Density (kg/m³)	32	EN 1602
Edge treatment	Machihembrado	-
Surface	Lisa, con piel de extrusión	-

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.
- Complies with CE marking requirements.
- 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 flat roofs, both conventional and inverted.
- Thermal insulation for residential and commercial overloaded floors.

Advantages & Benefits

- Long-term low level 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 "breathability" while avoiding the risk of interstitial condensation.
- Tongue and groove joint: prevents thermal bridges between sheets and convection currents in the chamber.
- Easy and safe handling of the plates: 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.

Descriptive Memory

___ m² of cavity wall thermal insulation, by means of DANOPREN PR extruded polystyrene (XPS) rigid foam boards of ___ mm thickness, with a declared thermal conductivity $\lambda_D =$ ___ W/m·K; declared thermal resistance $R_D =$ ___ m²·K/W; Euroclass E fire reaction classification, according to EN 13501-1 and designation code XPS-EN13164-T1-CS (10Y) 200-WL (T) 0,7-DS (70), according to EN 13164 harmonized technical specifications.

Instruction for Use

ENCLOSURES WITH CAVITY

- When installing DANOPREN PR XPS insulation boards in cavity, the cavity shall be checked to ensure that it is free of burrs and debris.
- The supporting wall shall provide a smooth and even surface for the support of the DANOPREN PR boards.
- Due to the high water vapour diffusion resistivity (MU factor) of DANOPREN PR 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 exceptional applications, such as freezing cold stores (temperatures down to -40 degrees Celsius), it would be necessary to install the barrier as such, verifying the correct position (on the "hot" side of the insulation, which would be the outside of the freezer room itself).
- If necessary, check that the DANOPREN PR sheets are correctly fixed or glued to the supporting wall. In any case, the rigidity and robustness of the sheets ensures that they will not move or give way after being installed, causing the appearance of thermal bridges in the chamber and convection currents between the two sides, "hot" and "cold", of the chamber.
- DANOPREN PR boards have tongue and groove joints and must be butt-jointed. In fact, this treatment of joints on the 4 edges of the sheet prevents any air circulation by convection between the two sides, "hot" and "cold", of the cavity. This simplifies installation and avoids the rather frequent arrangement of two layers of boards to achieve the "joint filler" effect, as this is already easily achieved thanks to the tongue and groove jointing of a single layer.
- If the cavity is higher than the length of the boards, the rest of the cavity must be filled with the necessary cut-outs to provide continuity, thus avoiding the formation of thermal bridges and convection currents inside the cavity. DANOPREN PR sheets are in fact 2.60 m long, in order to better adapt to the typical height of the chamber, and are therefore placed vertically.
- In the particular case where the cavity is that of a ventilated façade, special consideration must be given to the fire safety regulations (CTE DB-SI) and, depending on a series of parameters described in the regulations, the possible need for protections or fire barriers, so that the regulatory requirements are met in the final application of use of the product.
- On the other hand, in the case of occupying the cavity of a ventilated façade, the DANOPREN PR

sheets will be fixed with a minimum of four mechanical fixings near the corners and one in the centre of the sheet, or they will be adhered to the supporting wall on 80% of its surface.

- In addition, the outer finish shall be fixed to the supporting wall or to an auxiliary self-supporting structure. DANOPREN PR sheets must not support the weight of the exterior finish. In this respect, the thermal bridging effect possibly caused by the fixings of the external finish sheet shall be assessed.

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 75°C.
- 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

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