Thermal Insulation

DANOPREN TR

Rigid extruded polystyrene (XPS) foam board for thermal insulation of inverted roofs and floors.



BBA 19/5704 (3)

EPD S-P-00501

DANOPREN TR is a rigid extruded polystyrene (XPS) foam board with shiplap edges at various thicknesses. Manufactured without CFC's, HCFC's or HFC's.

Presentation

- Length (cm): 125
- Width (cm): 60
- Colour: Blue
- Thickness (mm): 60
- m² / package: 5.25
- Surface (m²): 0.75
- Product code: 484007

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)	0,033	EN 12667
Compression strength (kPa)	CS(10/Y)300	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
Compressive creep max 2% deflection after 50 years (kPa)	95	EN 1606
Traction resistance perpendicular of the faces (kPa)	NPD	-
Water absorption by freeze-thaw cycling (Vol. %)	≤ 1	EN 12091
Thermal Resistance (m²K/W)	1.85	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
Density (kg/m³)	32	EN 1602
Edge treatment	Media madera	-
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 leverl of water absorption.
- High long-term compressive strength.
- Eventually, reuse of the plates may be feasible depending on the original installation system.
- 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.
- Can be installed over the waterproofing membrane, protecting it from mechanical damage and thermal shocks, according to the "inverted roof" concept.

Instruction for Use

INVERTED ROOF

- The roof structure load-bearing capacity will be checked.
- Before installing DANOPREN TR XPS boards it is recommended to run a leakage test.
- DANOPREN TR XPS boards are part of a waterproofing system, therefore the systems and indications reflected in the Danosa solutions

technical manual, product/systems specifications and other technical documentation should be taken into account.

- A suitable separation layer (for instance a fabric like DANOFELT PY 150) shall be installed between the DANOPREN TR XPS boards and the waterproofing membrane, especially in case where it might arise any chemical incompatibility, such as in the case of PVC membranes (in this case, a fabric like DANOFELT PY 300).
- DANOPREN TR XPS boards shall be installed loose-laid. Otherwise, a justification why not must be provided.
- DANOPREN TR XPS boards shall be installed with staggered joints between successive rows.- DANOPREN TR XPS boards shall be installed with all their joints tight.- When close to every detailing, the DANOPREN TR XPS boards will form the joint with at least a 5 mm tolerance.
- A suitable separation layer (for instance a fabric like DANOFELT PY 200) shall be installed between the DANOPREN TR XPS boards and the ballast (gravel or paving).
- A suitable ballast in conditions, weight and distribution will be immediately installed, in order to avoid possible wind uplift. For a non-accessible roof, gravel ballast (rounded low fines of nominal size 16 mm to 32 mm) should be washed and laid to a minimum thickness of 50 mm.
- It shall be avoided any ballast that may form a tight vapor diffusion layer on top of the DANOPREN TR XPS boards.
- When close to every detailing, the DANOPREN TR XPS boards will form the joint with at least a 5 mm tolerance.

RESIDENTIAL AND COMMERCIAL FLOORS

- The structural deck must show proper leveling and flatness (checked with a 2 m rule level). Otherwise it may be necessary to form a sand layer for proper leveling. This sand layer may also allow for horizontal pipes installation. If the structural deck shows proper leveling, the sand layer may go above the insulation boards. In this case it can incorporate a heating floor system.
- DANOPREN TR XPS boards must be installed loose-laid, with tight and staggered joints between successive rows.
- In the case of slab insulation, DANOPREN TR boards may be placed directly onto the ground, once the soil is properly compacted. Then the boards can be placed, as indicated in the previous bullets. If a plastic film is installed as a watertight barrier, it is recommended to place it above the DANOPREN TR boards, i.e., by their “warm” side.

- A screed of at least 40 mm thickness will be installed, as a bed layer for the pavement, above the DANOPREN TR boards. For light or adhered flooring finishings, a minimum 30 mm screed is recommended, reinforced at least with a 220 g/m² mesh.
- In the case of heating floor systems, the DANOPREN TR boards must be placed below the heating system. Thus the “heat theft” between homes with heated flooring systems is avoided. The floor heating will form joints -for example, with DANOPREN CH shavings- in all junctions with walls and partitions.

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

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