

### DANOPREN 500

Rigid extruded polystyrene (XPS) foam board for thermal insulation of high load-bearing roofs and floors



BBA 19/5704 (3)

DANOPREN 500 is a rigid extruded polystyrene (XPS) foam board with shiplap edges at various thicknesses. It boasts a high compressive strength of 500KPa. Manufactured without CFC's, HCFC's or HFC's.

#### Presentation

- Length (cm): 125
- Width (cm): 60
- Thickness (mm): 50
- Product code: 480102

#### 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)500	EN 826
Dimensional Stability (%)	≤ 5	EN 1604
Water vapour diffusion resistance factor	≥ 80	EN 12086EN 12086
Reaction to fire	E	EN 13501-01

Concept	Value	Standard
Compressive creep max 2% deflection after 50 years (kPa)	150	EN 1606
Traction resistance perpendicular of the faces (kPa)	NPD	-
Water absorption by freeze-thaw cycling (Vol. %)	$\leq 1$	EN 12091
Thermal Resistance ( $\text{m}^2\text{K/W}$ )	1.5	EN 13164

## Additional Technical Data

Concept	Value	Standard
water absorption by diffusion (Vol.%)	$\leq 3$	EN 12088
Density ( $\text{kg/m}^3$ )	38	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 roofs and floors where, by calculation, a product with higher resistance than DANOPREN TR may be required.

## Advantages & Benefits

- Long-term low level of water absorption.
- Eventually, reuse of the plates may be feasible depending on the original installation system.
- Easy and safe handling of the plates: they are light, do not irritate the skin, do not release dust, maintain their physical integrity.
- Very high long-term compressive strength.
- 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

### RESIDENTIAL AND COMMERCIAL FLOORS

- The condition of the load-bearing support shall be checked to ensure that it is adequate for the various loads and overloads of the industrial floor or roof.
- The floor slab, slab or structural support shall be properly levelled and flat (checked with a 2 m ruler).
- Before installing DANOPREN 500 XPS sheets on parking decks, it is recommended that the waterproofing be tested for watertightness.
- Industrial floors or parking decks are subjected to considerably higher overloads than the usual ones on residential floors or decks. It is therefore necessary to use DANOPREN 500 XPS sheets, which have higher compressive strengths than usual (almost double). In any case, the overloads must be checked in order not to exceed the long-term compressive strength values with a maximum creep deformation of 2%. In the case of DANOPREN 500 it is recommended not to exceed a value of 160 kPa.
- The DANOPREN 500 XPS sheets used in parking decks are part of a waterproofing system, so the systems and indications contained in the solutions manual, Specifications and other technical documentation from DANOSA must be taken into account.
- On an inverted roof, a suitable separating layer (e.g. geotextile type DANOFELT PY 150) shall be provided between the DANOPREN 500 XPS sheets and the waterproofing membrane, especially if there may be any chemical incompatibility, as in the case of PVC sheets (in this case, geotextile type DANOFELT PY 300).
- DANOPREN 500 XPS sheets shall be installed floating. If this is not the case, the decision not to do so must be justified.
- DANOPREN 500 XPS boards shall be installed in staggered staggered rows with butt joints in successive rows.
- DANOPREN 500 XPS boards shall be installed with half-timbered butt joints.
- At single point deliveries, DANOPREN 500 XPS boards shall have a minimum gap of 5 mm.
- A suitable separating layer (e.g. geotextile type DANOFELT PY 200) shall be provided between the DANOPREN 500 XPS boards and the paving.
- In the case of an inverted car park type roof, the vehicle surface must be laid immediately, in order to prevent the DANOPREN 500 XPS sheets from being sucked in by excessive wind. This is usually a concrete slab or a paving slab with interlocking joints, in both cases laid on a 40 mm thick, well compacted sand bed.

## Indications and Important Recommendations

- In direct contact with substances or materials containing volatile components, they are exposed to attack by solvents. When selecting an adhesive, the manufacturer's recommendations regarding suitability for use with Styrofoam should be considered.
- It is necessary to keep the plates away from sources of heat or flames. They contain a flammability retarding additive to inhibit accidental ignition from a small fire source, but plates are combustible and can burn quickly if exposed to intense fire. All fire classifications are based on small-scale tests and may not reflect the reaction of the material under actual fire conditions.
- For further information, please refer to the safety data sheet.
- They can be stored outdoors. The product is not affected by rain, snow or ice. Accumulated dirt can be easily washed away. If the plates are stored for a long period of time, they should be protected from direct sunlight, preferably in their original packaging. When kept indoors, the interior shall be

adequately ventilated.

- It undergoes irreversible dimensional changes if exposed to high temperatures for long periods of time. The maximum permanent operating temperature is 75°C.

## 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 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

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