

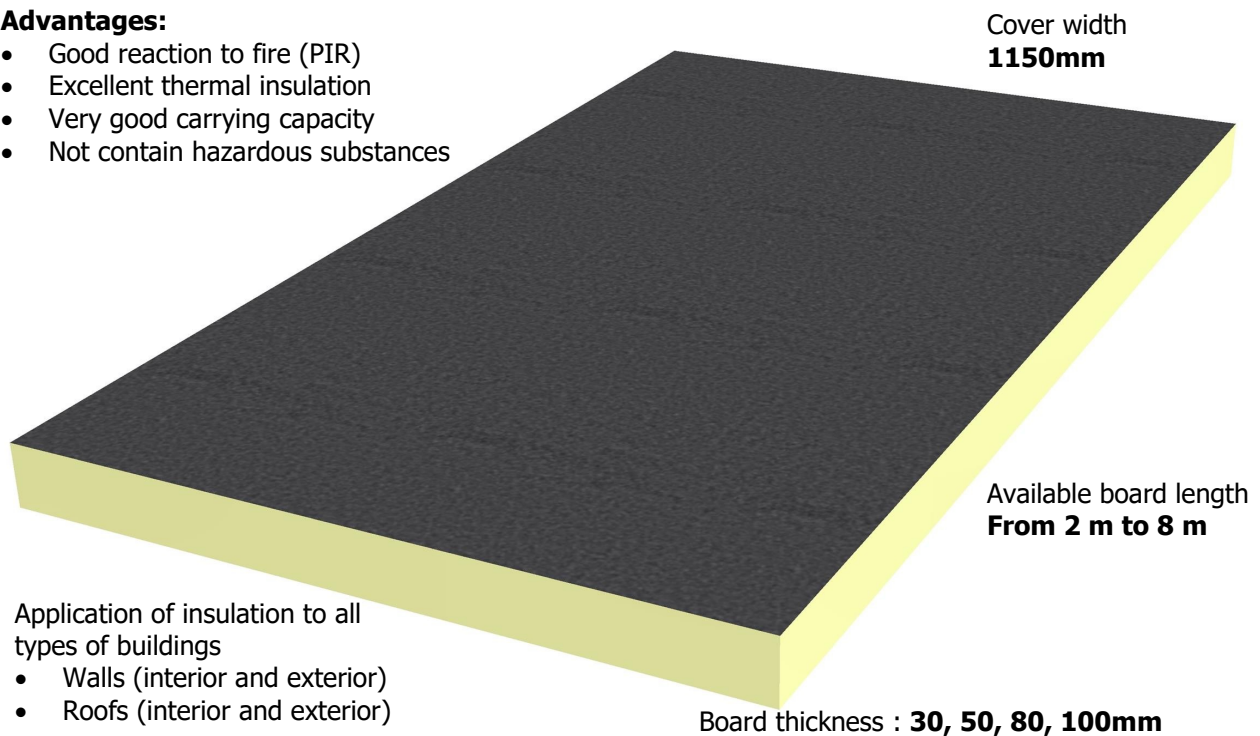
Product Data Sheet

Polyurethane Thermal Insulation Board PP. PU 115

Thermal insulation boards for the insulation of buildings and structures made of rigid polyurethane foam.

Advantages:

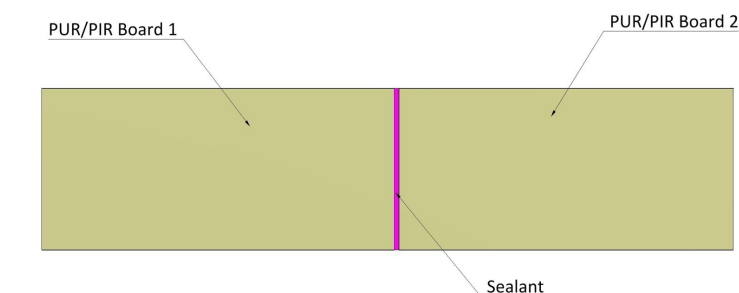
- Good reaction to fire (PIR)
- Excellent thermal insulation
- Very good carrying capacity
- Not contain hazardous substances



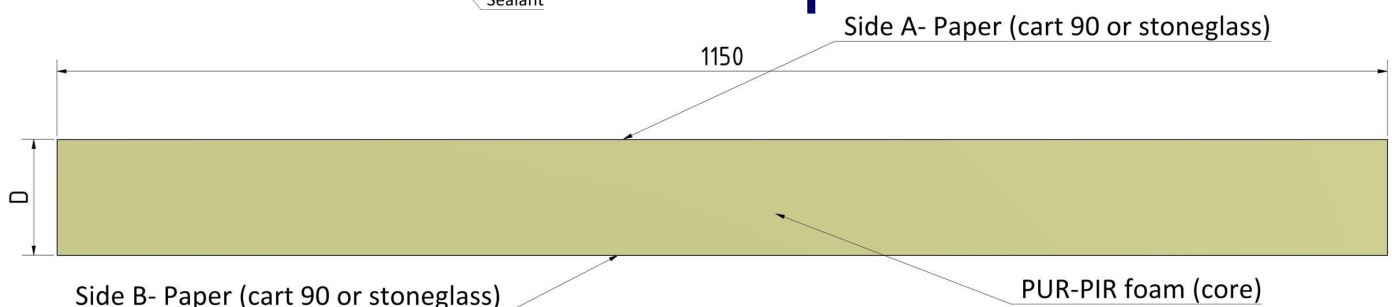
Application of insulation to all types of buildings

- Walls (interior and exterior)
- Roofs (interior and exterior)

Polyurethane thermal insulation boards are used to achieve energy upgrading and saving of buildings. They reduce building losses and help reduce CO₂ emissions to the environment.



Thermal insulation boards are attached to the structural elements either with adhesive or with anchors (plastic or metal). In any case, in the joint between the boards, it is recommended to use a sealant (usually low swelling polyurethane foam) to seal the structure.



POLYURETHANE THERMAL INSULATION BOARD PP. PU 115**Dimension Tolerances**

(according to the template EN 13165)

| | | |
|--|-----------|---------------------------------------|
| | ± 5 mm | L < 1000 mm |
| Board length, <i>l</i> | ± 7,5 mm | 1000 < L < 2000 mm |
| Board width, <i>b</i> | ± 10 mm | 2000 < L < 4000 mm |
| | ± 15 mm | L > 4000 mm |
| | ± 3 mm | D < 50 mm |
| Board thickness, <i>d</i> (class T1) | ± 4 mm | 50 < D < 75 mm |
| | +6, -4 mm | D > 75 mm |
| Paragonism tolerance, <i>S_b</i> | ≤ 5 mm/m | Width or Length |
| | ≤ 5 mm | Area ≤ 0,75 m ² , L ≤ 2,5m |
| Flatness tolerance, <i>S_{max}</i> | ≤ 10 mm | Area > 0,75 m ² , L ≤ 2,5m |

PUR / PIR polyurethane insulation core

The 40 kg / m³ high density polyurethane foam insulation core has excellent heat transfer resistance. They are proven to be the best thermal insulation material in the construction sector.

It does not contain dangerous harmful substances, it is odorless and safe for health and the environment. It contains no CFC & HCFCs, ozone depleting substances. It is recyclable and can be used for the production of secondary products.

Its closed cell structure is chemically neutral and makes it resistant to moisture and mold. It is durable and its properties remain unchanged over time.

In addition, PIR foam is difficult to ignite. PIR polyurethane foam panels could be classified as Bs1d0 as per reaction to fire. PIR polyurethane naked foam classified as class E according to standard EN 13501-1, meaning it does not transmit fire, it is difficult to ignite, has no/hardly any smoke production and does not produce flaming or non-flaming particles.

Essential Characteristics of PIR Polyurethane Foam (according to standard EN 13165)

- Density, $\rho \leq 40 \pm 2 \text{ kg/m}^3$
- Thermal conductivity, $\lambda \leq 0.023 \pm 0.001 \text{ W/mK}$
- Adhesion, $\text{adh} \leq 120 \text{ kPa}$
- Compression, $\text{comp} \leq 150 \text{ kPa}$
- Stability, $\text{dim} \leq 1.0\%$ at -20°C
- Stability, $\text{dim} \leq 1.0\%$ at $+70^\circ \text{C}$
- Structure, 90% closed cell
- Adsorption $\leq 3\%$ of mass
- **Reaction to fire (PIR), class E (on naked foam) & Bs1d0 (for panels)**

External face cover

Stoneglass white paper surfaces, suitable for PU plates for external insulation application.

- Suitable for accepting most types of coatings. The rough surface enhances traction and adhesion.
- It is waterproof with additives against mold and algae.
- It is classified in class E according to EN 11925

Cart 90 H

White paper surfaces Cart 90, suitable for PU plates, for insulation of metal surfaces.

- Bitumen for extra waterproofing. Waterproof with anti-mold and algae additives.
- Ribbed for anti-skid protection and enhanced traction.
- Very lightweight and resistant to mechanical stress and low temperatures.

It is possible to produce boards with aluminum foil or even polyester flat sheets up to 1mm thick, where the environment is extremely corrosive

POLYURETHANE THERMAL INSULATION BOARD PP. PU 115**Characteristic properties****Board Weight:**

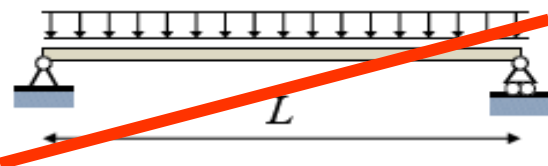
Weight per meter length was calculated taking into account the core density at 40 kg/m³.

Thermal transmittance:

Panel thermal transmittance was calculated according to EN 13165, EN 12667 & EN 12939 (high thicknesses) including the following parameters

- Foam density at 40 kg/m³
- Thermal conductivity $\lambda = 0.023 \text{ W/m.K}$,
- The calculations were made on the nominal thickness of the board.

| Board nominal thickness | Board weight (W 1150mm) | Thermal Transmittance U |
|-------------------------|-------------------------|--|
| [mm] | [kg / length m] | [U] & R ₀ [m ² .K / W] |
| 30 | 1,40 | [0,76] 1,30 |
| 50 | 2,30 | [0,46] 2,15 |
| 80 | 3,70 | [0,29] 3,45 |
| 100 | 4,60 | [0,23] 4,35 |

Maximum load – Load bearing capacity in kN / m²

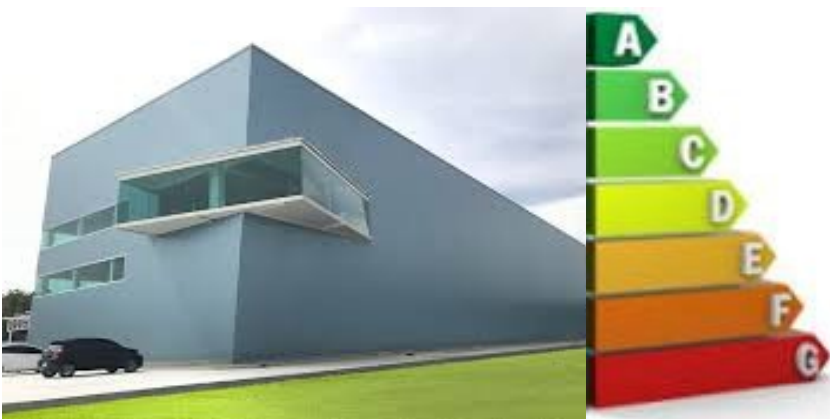
It is important to know that polyurethane insulation boards are NOT load-bearing or self-supporting components. They are fully supported insulating elements. They cannot receive loads (bending, shear). Although its compressive strength at evenly distributed load is **150 kN / m²**, the bending strength does not exceed **15 kN / m²**.

Uses & Applications

It is well known that energy saving not only helps to protect the environment but also to improve the economy on a collective or individual level.

One of the most effective ways to save energy on buildings and facilities is to insulate them. Thermal insulation boards made of rigid polyurethane foam have excellent thermal insulation capabilities and are applicable to all types of buildings (residential & industrial).

They can be used for insulation on horizontal structural elements, exterior and interior (roofs, ceilings and floors). They can also be used for insulation on vertical structural elements, exterior and interior, (walls, partitions, rooms).

**Hot & Cold Rooms**

One of its main applications is the insulation of the floors of the refrigeration chambers.

With advantages such as excellent thermal insulation capacity, high compressive strength, large board size, easy and comfortable material handling make it the most suitable insulation for this application.

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