UNIFLEX® XPS

EXTRUDED POLYSTYRENE THERMAL INSULATION BOARD



Product Features

UNIFLEX® XPS is a rigid extruded polystyrene (XPS) thermal insulation board. The continuous extrusion process gives it a smooth, even skin and a **uniform closed-cell structure** with no gaps.

This structure makes **UNIFLEX® XPS** an excellent insulating material, with high compressive strength, low thermal conductivity, low water absorption, low vapour permeance and a long service life.

UNIFLEX® XPS is used in new buildings and retrofit works to insulate roofs, floor slabs, basement and foundation walls and precast panels, and to protect waterproofing.

It is supplied in two grades, **XPS 250** and **XPS 450**, in 25mm and 50mm thicknesses. XPS 450 is the grade for heavily loaded floor slabs.

Advantages

- Low coefficient of thermal conductivity
- Outstanding moisture resistance
- Strong yet lightweight
- High compressive strength
- Easy and safe to handle, cut and install
- Does not corrode, rot or support mould growth
- Reusable in many applications

Fields Of Application

Above foundations of exterior walls	Inverted (protected) roof decks
Exterior foundation walls	Precast sandwich panels
Basement walls	
Below concrete slab	
Cold storage facilities	

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Technical Properties

Property	Test Method	Unit	XPS 250	XPS 450
Density	ASTM D1622	kg/m³	32 - 36	40 - 45
Compressive Strength	ASTM D1621	kPa	≥ 250	≥ 450
Water Absorption	ASTM C272	% (v/v)	0.10 - 0.35	0.10 - 0.35
Thermal Conductivity	ASTM C518	W/m.K	≤ 0.028	≤ 0.028
Flammability	UL 94	Class	HB	HB
Dimensional Stability	-	%	≤ 2.0	≤ 2.0

All values are subject to 5-10% tolerance. Use XPS 450 under heavily loaded floor slabs.

Physical Properties

Material	:	Polystyrene with additives
Colour	:	Pink / Blue
Thickness	:	25mm / 50mm
Size	:	1200mm x 2400mm / 600mm x 1200mm
R-value	:	0.89 m²K/W (25mm) / 1.79 m²K/W (50mm)

Applications

Precast

UNIFLEX® XPS is cast into precast sandwich panels as the insulation core between the outer and inner concrete wythes. A higher R-value means better energy efficiency.

Rooftop

On inverted (protected membrane) roofs, **UNIFLEX® XPS** is loose-laid on top of the waterproofing membrane. It insulates the roof and protects the membrane from temperature swings and damage.

Floor Slab

UNIFLEX® XPS is laid under ground-bearing slabs. Its high compressive strength carries the slab load; use XPS 450 under heavily loaded slabs.

Wall

Fixed against the outside of basement and foundation walls, **UNIFLEX® XPS** insulates the wall and protects the waterproofing during backfilling. It resists moisture, so it keeps its thermal resistance over the years.

This technical data sheet is given in good faith and does not guarantee the application work.
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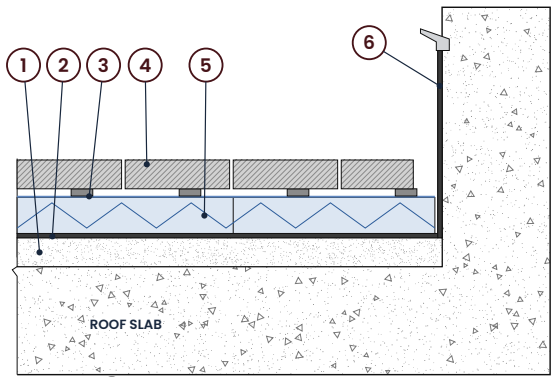
Typical Drawing

1 INVERTED (PROTECTED) ROOF

Not to scale

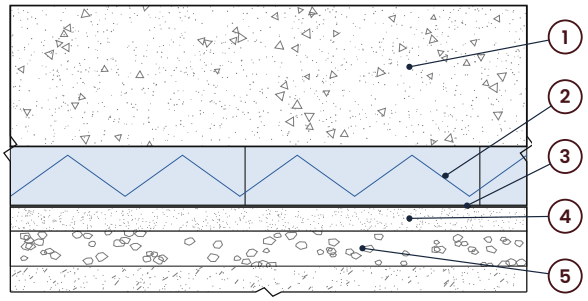


LEGEND

1. Screed to falls
2. Waterproofing membrane
3. Filter fabric (by others)
4. Paving slabs / gravel ballast
5. UNIFLEX® XPS, loose-laid
6. Membrane turned up, flashing

2 UNDER-SLAB INSULATION

Not to scale

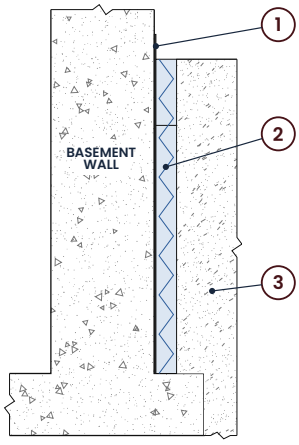


LEGEND

1. Ground slab
2. UNIFLEX® XPS, grade to suit load
3. UNIPROOF® DPM
4. Lean concrete / blinding
5. Compacted hardcore

3 BASEMENT WALL

Not to scale

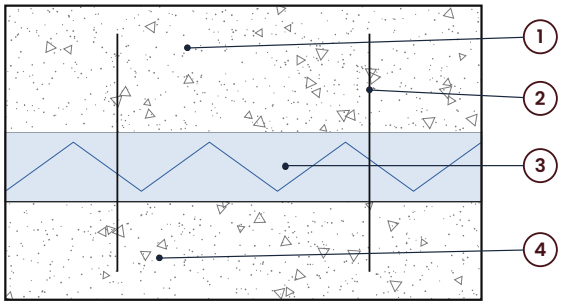


LEGEND

1. UNICOAT® BITUMEN 300 or membrane on wall
2. UNIFLEX® XPS insulation board
3. Backfill compacted in layers

4 PRECAST SANDWICH PANEL

Not to scale



LEGEND

1. Outer concrete wythe
2. Wythe ties (by precaster)
3. UNIFLEX® XPS core
4. Inner concrete wythe

Illustrations only – not for construction. Refer to drawing UR-FL-04.

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Installation Procedures

1 Surface Preparation | 2 Laying The Boards | 3 Covering & Protection

Step 1

SURFACE PREPARATION

The base must be level, clean and free of sharp projections. Under slabs, compact the hardcore and blind it. On roofs and walls, complete the waterproofing and let it cure before the boards go on.

Keep solvent-based coatings, primers and adhesives away from **UNIFLEX® XPS**. Use water-based products such as **UNICOAT® BITUMEN 300**.

Step 2

LAYING THE BOARDS

Lay **UNIFLEX® XPS** with the joints tight and staggered. Cut the boards with a sharp knife or a fine-toothed saw to fit edges and penetrations.

Under slabs: lay the boards on the blinding. **Inverted roofs:** loose-lay them on top of the waterproofing membrane. **Walls:** fit them tight against the coated wall. **Precast panels:** place the board in the mould as the core between the two concrete wythes.

Step 3

COVERING & PROTECTION

Cover the boards as soon as possible. **Under slabs:** protect them from traffic and damage until the slab is cast. **Inverted roofs:** lay filter fabric, then pavers on pads or gravel ballast to hold the boards against wind uplift and flotation. **Walls:** backfill in compacted layers without damaging the boards.

Ballast weight, falls, drainage and fire protection are designed by the project consultant.

Storage

Store **UNIFLEX® XPS** flat and under cover, away from direct sunlight, heat, flame and solvents.

Health & Safety

UNIFLEX® XPS presents no health hazard in normal handling and use. Wear gloves when cutting, and follow normal site safety practice.

Limitations

Solvents dissolve polystyrene: do not let solvent-based coatings, primers, adhesives or sealants touch **UNIFLEX® XPS**. It is combustible (UL 94 HB), so do not leave it exposed inside buildings.

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