Insulation for use in Soffits

Soffit Insulation Design & Installation Guide

URSA WALLTEC BLACK 32, URSAPAN BLACK AND WALLTEC REFLEX

URSA. Insulation for a better tomorrow.

URSA have been specialists in innovative, award-winning insulation since 1959 - and a leading European manufacturer of glass mineral wool for over 50 years.

Our headquarters are in Madrid, Spain, although our business spans more than 40 countries, with 11 production sites and over 1,500 employees. Our team in the UK are dedicated to providing glass mineral wool insulation solutions, whatever the project.

Part of the Etex Group

In 2022 URSA became part of Etex - a global group comprising of 160 facilities across 45 countries and the name behind many other construction product brands in the building materials sector including Superglass, a leading UK glass mineral wool insulation manufacturer. In 2025, the Superglass and URSA brands came together to form Etex UK Insulation Ltd.

URSA TERRA

Developed in 2009, URSA TERRA showcases the latest in glass mineral wool technology. Our distinctive production methods and product formulation define the character of our extensive insulation product range.

URSA WALLTEC BLACK 32 and URSAPAN BLACK are non-combustible glass mineral wool slabs treated with silicon-based water repellent and faced on one side with a black glass fibre tissue. URSA WALLTEC REFLEX is a non-combustible glass mineral wool insulation slab treated with a silicon-based water repellent: it is faced on one side with a micro-perforated aluminium foil.

They are designed for use as soffit insulation in undercrofts, underground car parks and similar semi-exposed applications, and can be used under concrete, metal composite, metal and timber floors.

Design

An exposed soffit is a floor, normally made of concrete, separating a heated environment (dwellings, apartments or commercial) from an unheated space below - as such the floor must be insulated to comply with the Building Regulations/Standards. Adding insulation to the underside of the slab means no disruption to the building's occupants.

Thermal

URSA WALLTEC BLACK 32 and **URSA WALLTEC REFLEX** both have a thermal conductivity of 0.032 W/mK, while **URSAPAN BLACK** has a thermal conductivity of 0.035 W/mK.

Acoustic

The mass and rigidity of concrete floors offer a certain level of acoustic performance, and this can be improved by using URSA soffit insulation as an acoustic absorber and a (decoupled) suspended ceiling. A typical 150mm concrete slab will give approximately 50 dB Rw, which can be taken to over 65 dB Rw with **URSAPAN BLACK, URSA WALLTEC BLACK 32** or **URSA WALLTEC REFLEX** slabs and 2 layers of plasterboard as the suspended ceiling finish.

Thermal Bridging

As the level of insulation is increased, it is vitally important to ensure continuity of the insulation at the junction of elements to avoid both excessive heat loss and potential localised condensation issues. Concrete or steel frame structures in particular need careful design.

The junction where the floor meets the wall has the potential to be a major thermal bridge, and should be designed so the wall and soffit insulation are continuously joined. Downstand beams should be fully encapsulated (see 'Installation' on page 5) and columns may need additional insulation around them to extend the thermal bridge path.

Fire Performance

URSAPAN BLACK, URSA WALLTEC BLACK 32 and **URSA WALLTEC REFLEX** are deemed non-combustible with a fire classification of Euroclass A1 (the highest possible rating) when tested to EN 13501-1:2018 Reaction to Fire.

The floor structure itself will give the required resistance to fire, in the case of concrete and metal composite floors this can be up to 4 hrs; the non-combustible insulation will not prejudice the fire resistance properties of the floor or add to the fire load in the building.

Condensation

As the floor structure is on the warm side of the insulation, the construction is inherently safe from condensation risk, and confirmation of any such risk can be provided by URSA's Technical Department.

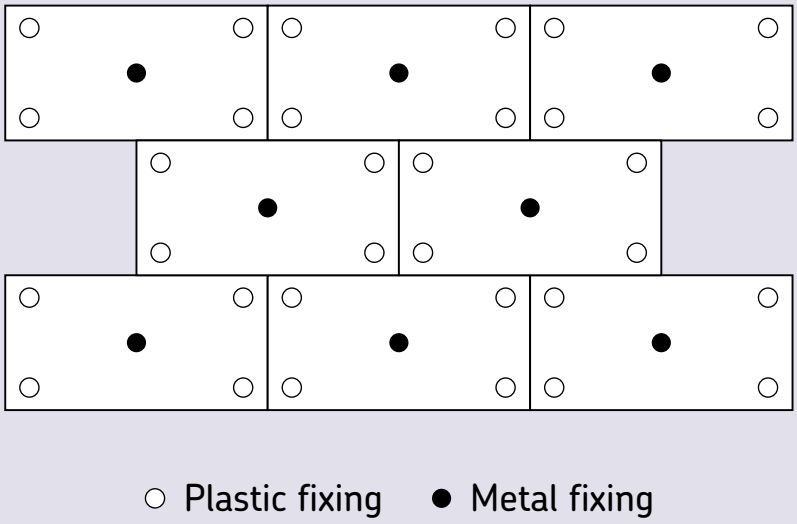
Installation – Insulation Below a Concrete/Metal Composite Floor Slab

URSAPAN BLACK, URSA WALLTEC BLACK 32 and **URSA WALLTEC REFLEX** slabs are simply mechanically fixed to the underside of the floor slab.

The standard procedure is:

1. Consider the layout pattern to avoid excessive cut pieces. In longer runs use a string guide or laser to ensure the first row of boards is straight, and check on a regular basis.
2. Fit the slabs in a staggered, brick bond pattern.
3. Use screw or expansion fixings suitable for concrete (or other substrate) with 70mm minimum diameter washers. Use 5 fixings per board (see fixing pattern).
4. The central fixing to full and part boards must be metal, while the corner fixings may be plastic and should be 100–150mm from the corner.
5. As an alternative, all 5 fixings may be metal although this may impact the U-value slightly.
6. **URSAPAN BLACK, URSA WALLTEC BLACK 32** and **URSA WALLTEC REFLEX** slabs must be tightly butt-jointed with good contact onto the substrate - the resilient nature of the slabs helps in this respect.
7. Do not overdrive or overtighten the fixings.
8. Downstand beams and changes in level of the soffit should be fully encapsulated with a vertical section of insulation. Mitre the slab edges to ensure the black or foil face is maintained; alternatively cut a 90° V-shaped notch to almost the full thickness of the insulation to allow the slab to be bent whilst maintaining the black/foil facing.

Fixing Pattern



Heat Loss Calculations

The normal method of calculating U-values in floors, walls and roofs is the Combined Method (see BS EN ISO 6946) which, as well as assessing the thermal bridge effect of mortar joints, timber studs and so on, accounts for air gaps in the insulation and mechanical fasteners penetrating the insulation.

Compliance with the Building Regulations is shown by limiting the overall CO_2 emissions from the building - this gives considerable design flexibility with no specific U-values, except the worst allowable, that must be achieved.

Typical Construction

150mm concrete slab
URSA WALLTEC BLACK 32/URSAPAN BLACK
1 stainless steel fixing, cross section area of 25mm², at the centre of each slab and plastic fixings at each corner.

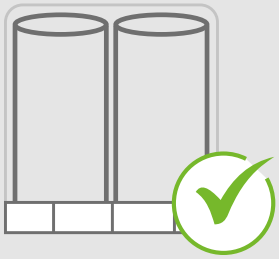
	U-Value (W/m²K)	
Thickness (mm)	**URSA WALLTEC BLACK 32**	**URSAPAN BLACK**
100	0.29	0.32
120	0.25	0.27
130	0.23	0.25
140	0.22	0.23
150	0.20	0.22
160	0.19	0.21
180	0.17	0.18
200	0.15	0.17
220	0.14	0.15
240	0.13	0.14

Typical Construction

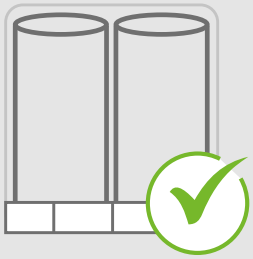
150mm concrete slab
URSA WALLTEC REFLEX
1 stainless steel fixing, cross section area of 25mm², at the centre of each slab and plastic fixings at each corner.

	U-Value (W/m²K)
Thickness (mm)	**URSA WALLTEC REFLEX**
131	0.22
138	0.21
150	0.20

How to store our insulation

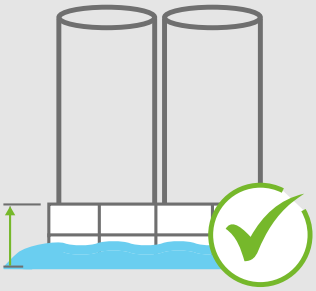


Keep the product covered and fully wrapped on a pallet until required.

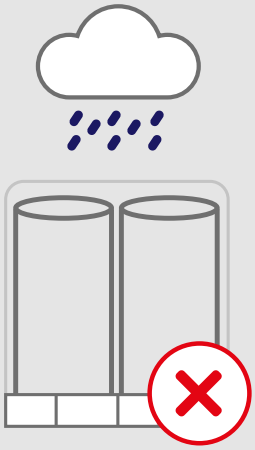


A pallet that is wrapped and has an undamaged hood can be stored outside when indoor space is unavailable, provided it is kept off the ground and protected from the elements. This should only be for short-term storage and not in severe weather conditions.

Once the plastic hood has been removed keep all of the product inside and off the ground away from the elements.



Product should be kept elevated on a pallet at all times to avoid sitting water.



Product can become wet and damaged when exposed to the elements.

Loose product is extremely likely to have water damage when left in the rain rendering your stock unfit for sale.

Please note: This guide is suitable for all URSA roll, slab and batt products. We do not recommend that URSA pallets are double stacked.

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