

# Insulation for use in Loft applications

Loft Insulation Design & Installation Guide  
**URSA 10 DIVERSO**









# 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**

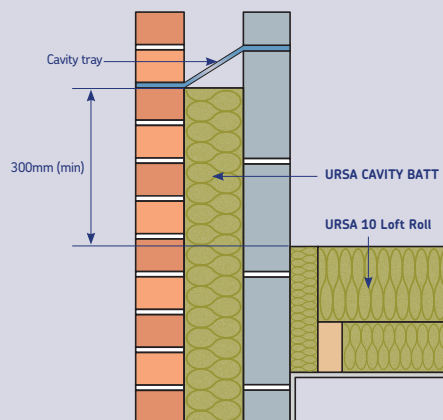
In 2022 URSA became part of Etex - a global group comprising of 160 facilities across 45 countries and the name behind many other construction product brands in the building materials sector including Superglass, a leading UK glass mineral wool insulation manufacturer. In 2025, the Superglass and URSA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

## **URSA TERRA**

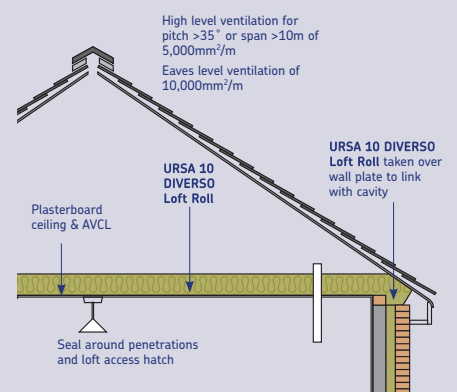
Developed in 2009, URSA TERRA showcases the latest in glass mineral wool technology. Our distinctive production methods and product formulation define the character of our extensive insulation product range.

**URSA 10 DIVERSO Loft Roll** is a non-combustible glass mineral wool insulation roll. The roll comes partially perforated, allowing it to be used between standard joist spacings or as a full-width layer over the joists. This design minimises the need for on-site cutting and waste.

**Figure 1**  
**Cold Pitched Roof Gable Detail**



**Figure 2**  
**HR Underlay**





# Design

## Thermal bridging

As the level of insulation is increased, it is vitally important to ensure continuity of the insulation at the junction of elements. At the junction where the wall and roof meet, packing the eaves with mineral wool, using insulating block cavity closers and extended cavity wall insulation can all help to reduce thermal bridging.

At gable walls the cavity insulation should be continued to at least 300mm above the top of the loft insulation to ensure continuity of the wall and roof insulation. The space between the last roof truss/joist and gable wall must be packed with insulation.

The loft access hatch should be insulated and draft sealed – proprietary units are available that achieve the required thermal and air infiltration performance.

## Limiting Air Infiltration

The plasterboard ceiling should be installed first with all joints between the ceiling and walls sealed with plaster, adhesive or flexible sealant, and seal all penetrations using a flexible sealant.

A correctly detailed and installed polythene air and vapour control layer (AVCL) will enhance the air tightness of the construction.

## Condensation

When increasing the amount of insulation, the increased risk of interstitial condensation must be carefully considered – BS 5250 Management of moisture in buildings. Code of practice, gives detailed design advice.

In pitched roofs the governing factor is the choice of roof tile underlay, either High Resistance (HR) or Low Resistance (LR) types:

**Type HR Underlay** (Figure 2) – these are the more traditional bitumen or polythene based products that have a water vapour resistance greater than 0.25 MNs/g.

Ventilation of the roof void must be provided as follows:

- 25,000mm<sup>2</sup>/m, at low level, for pitches of 15° or less
- 10,000mm<sup>2</sup>/m, at low level, for pitches of more than 15°

Additional openings, at high level, equivalent to a continuous gap of 5,000mm<sup>2</sup>/m should be used if:

- The roof pitch exceeds 35°
- The roof span exceeds 10m
- It's a lean-to or mono pitch roof

**Type LR Underlay** (Figure 3) – these are the more recently introduced breather type membranes that have a water vapour resistance less than or equal to 0.25 MNs/g.

Ventilation of the roof void should be provided as follows:

- 7,000mm<sup>2</sup>/m, at low level, for normal ceilings
- 3,000mm<sup>2</sup>/m, at low level, for well-sealed ceilings
- Alternatively, for well-sealed ceilings, high level ventilation of 5,000mm<sup>2</sup>/m

There are a number of Type LR underlays available that promote the energy efficiency of not providing any ventilation – as these are not covered by BS 5250 Management of moisture in buildings, URSA recommends only using such products if they carry a suitable technical approval such as BBA certification.

Further measures that should be taken include:

- Removal of the water vapour at source by the use of suitable ventilation and/or extraction fans in high humidity areas
- The use of a correctly detailed and carefully sealed air and vapour control layer (AVCL) (minimum 500g polythene sheet or foil backed plasterboard) to reduce the amount of water vapour from the living area passing into the cold roof void

## Services

Tanks, pipes, vessels and ducts in the roof void must be insulated to avoid freezing and/or condensation problems.

Insulation should be omitted from immediately below cold water tanks; this allows heat from inside the house to prevent the tank from freezing.

Recessed lighting should be incorporated into a sufficiently large enclosure in order to ensure continuity of insulation whilst still allowing heat to dissipate from the lamps. Compact fluorescent, low voltage and LED lamps generally run cooler than standard light fittings.

## Wind Uplift

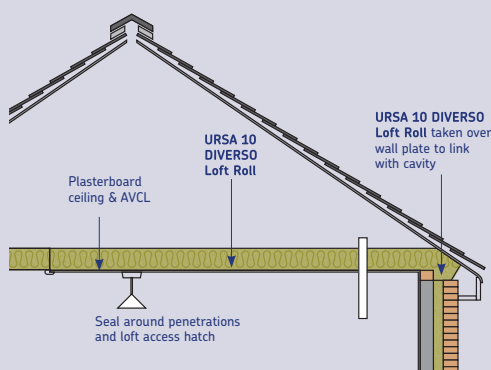
The wind uplift force exerted on the roof will vary according to geographical location, site location and building height.

Calculations relating to the fixing pattern and batten dimensions should be made with reference to BS 5534 Slating and tiling for pitched roofs and vertical cladding. Code of practice.

## Fire Performance

URSA 10 DIVERSO is deemed non-combustible with a fire classification of Euroclass A1 (the highest possible rating) when tested to EN 13501-1:2018 Reaction to Fire.

**Figure 3**  
**LR Underlay**



# Installation – Ventilated Roof Void

URSA 10 DIVERSO is designed to fit between and over the roof timbers at joist (horizontal ceiling) level.

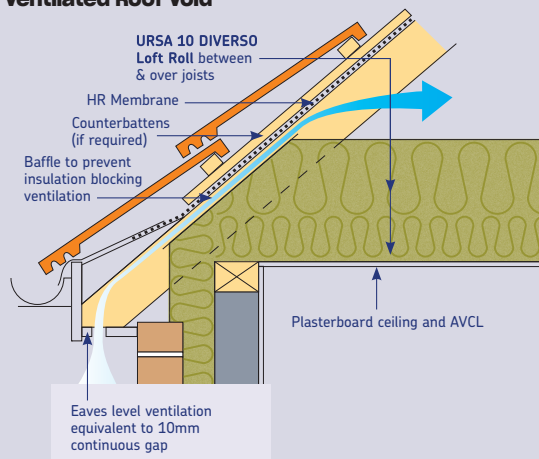
The standard procedure is:

1. The roof trusses, HR Type sarking felt (bituminous or polythene), sarking boards (if applicable), tiling battens and tiles are all installed in the normal way in accordance with good practice and BS 5534 Slating and tiling for pitched roofs and vertical cladding. Code of practice.
2. There must be provision for roof space ventilation at the eaves and, if required, at the ridge. Proprietary eaves ventilators should be used to maintain a clear path from the eaves vents into the roof void.
3. The plasterboard ceiling, incorporating an air and vapour control layer (AVCL) (500g polythene or foil backed plasterboard), is installed in the normal manner ensuring the AVCL is correctly detailed and sealed.

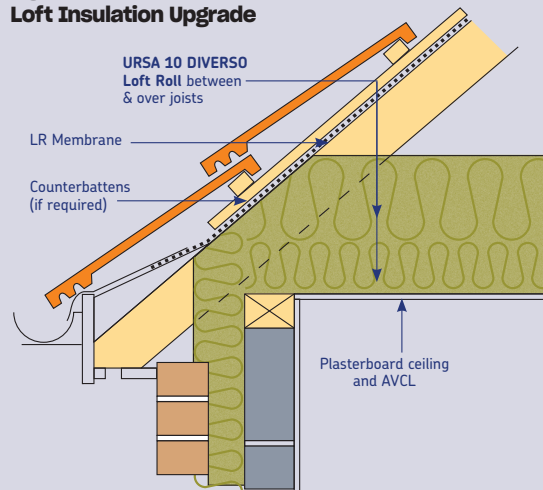
4. The first layer of URSA 10 DIVERSO, same depth as the joists, is laid between the joists.
5. The second layer of URSA 10 DIVERSO is laid at right angles to the joists with all edges closely butt-jointed.
6. Ensure that the loft insulation continues over the wall plate to provide continuity with the wall insulation and is tight against any eaves ventilator units.
7. Ensure that any penetrations through the ceiling, especially if formed by following trades, are correctly sealed to ensure an air and vapour tight ceiling.

The insulation should not be walked on or compressed excessively as the fibres will be damaged leading to a loss of thickness and thermal performance. If damage does occur, replacement material must be installed.

**Figure 4**  
**Ventilated Roof Void**



**Figure 5**  
**Loft Insulation Upgrade**





# Installation – Non Ventilated Roof Void

URSA 10 DIVERSO is designed to fit between and over the roof timbers at joist (horizontal ceiling) level. The principle here is that ventilation is not required, the system instead relying on the water vapour permeability of the sarking membrane which needs to be a Type LR membrane. This construction has the added benefit of the roof void remaining clean and free from wind borne dust and dirt.

The standard procedure is:

1. The roof trusses, LR Type (breather) membrane, tiling battens and tiles are all installed in the normal way in accordance with good practice and BS 5534 Slating and tiling for pitched roofs and vertical cladding. Code of practice.
2. The LR Type membrane must be covered by a suitable technical approval such as BBA certification and be installed in accordance with that approval.
3. When using man-made or natural slates (or other tiles that are relatively airtight) counterbattens should be used in order to ventilate the airspace directly below the slates/tiles.

4. The plasterboard ceiling, incorporating an air and vapour control layer (AVCL) (500g polythene or foil backed plasterboard), is installed in the normal manner ensuring the AVCL is correctly detailed and sealed.
5. The first layer of URSA 10 DIVERSO, same depth as the joists, is laid between the joists.
6. The second layer of URSA 10 DIVERSO is laid at right angles to the joists with all edges closely butt-jointed.
7. Ensure the loft insulation continues over the wall plate to provide continuity with the wall insulation and is tight against any eaves ventilator units.
8. Ensure any penetrations through the ceiling, especially if formed by following trades, are correctly sealed to ensure an air and vapour tight ceiling.

**The insulation should not be walked on or compressed excessively as the fibres will be damaged leading to a loss of thickness and thermal performance. If damage does occur, replacement material must be installed.**











## Upgrading Existing Roofs

URSA 10 DIVERSO is designed to fit between and over the roof timbers at joist (horizontal ceiling) level. In existing buildings there may be a minimal insulation thickness already installed between the roof joists.

The standard procedure is:

1. The first layer of URSA 10 DIVERSO, same depth as the joists, is laid between the joists. If there is already some insulation, add further URSA 10 DIVERSO between the roof joists to fully fill the depth of the joist.
2. The second layer of URSA 10 DIVERSO, is laid at right angles to the joists with all edges closely butt-jointed.
3. There must be provision for roof space ventilation at the eaves and, if required, at the ridge. Proprietary eaves ventilators should be used to maintain a clear path from the eaves vents into the roof void.
4. Ensure the loft insulation continues over the wall plate to provide continuity with the wall insulation and is tight against any eaves ventilator units.
5. Ensure any penetrations through the ceiling, especially if formed by following trades, are correctly sealed to ensure an air and vapour tight ceiling.

**The insulation should not be walked on or compressed excessively as the fibres will be damaged leading to a loss of thickness and thermal performance. If damage does occur, replacement material must be installed.**

# 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 and mechanical fasteners penetrating the insulation.

Compliance with the Building Regulations is shown by limiting the overall CO<sub>2</sub> emissions from the building – this gives considerable design flexibility with no specific U-values, except the worst allowable, that must be achieved.

## URSA 10 DIVERSO Joist Level Insulation

URSA 10 Divero Loft Roll (mm)	U-Value (W/m <sup>2</sup> K) (Joists @ 400mm c/c)	U-Value (W/m <sup>2</sup> K) (Joists @ 600mm c/c)
2 x 200	0.12	0.12
3 x 150	0.10	0.10
3 x 200	0.08	0.08

In two layer options, the first figure is between-joist thickness, and the second is the over-joist thickness.

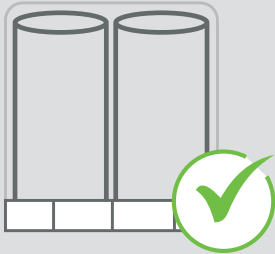
The additional layer of URSA 10 DIVERSO over the joists increases the thermal performance, masks the thermal bridge effect of the timbers and helps to reduce the incidence of pattern staining.

For any U-Value calculations for alternative construction build-ups, please contact our Technical Team on [technicalursa.uk@etexgroup.com](mailto:technicalursa.uk@etexgroup.com)

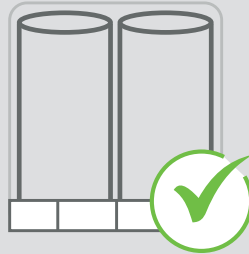




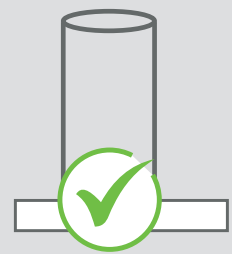
# How to store our insulation



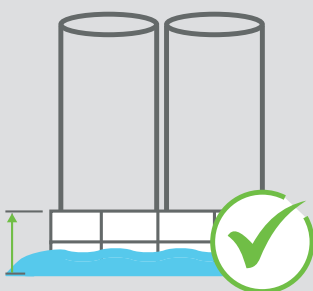
Keep the product covered and fully wrapped on a pallet until required.



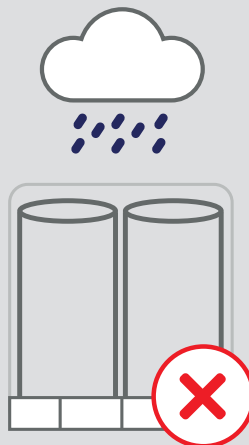
A pallet that is wrapped and has an undamaged hood can be stored outside when indoor space is unavailable, provided it is kept off the ground and protected from the elements. This should only be for short-term storage and not in severe weather conditions.



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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