

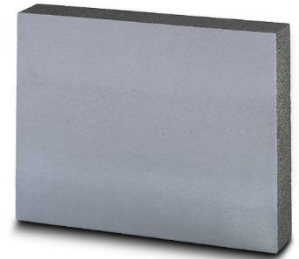
Technical data sheet

BauderGLAS Inverted Insulation



making roofs secure.

12.06.2026



Product description	Cellular glass with a pre-applied inorganic coating on the topside. Both the core material and the coating have an A1 reaction to fire classification and are therefore non-combustible. Where more than one layer of insulation is required, BauderGLAS Slab T3+ will be used as the base layer.	
Application fields	This product is for use within inverted (protected membrane) roof systems and can be laid directly onto Bauder Hot Melt and Bauder bitumen-based Waterproofing Membranes. Contact Bauder technical department for advice relating to other membrane types. Use in conjunction with BauderJFRI WFRL prior to installing paving, decking, ballast or lightweight green or brown roofs. Use in conjunction with BauderGLAS Upright Boards to exposed vertical upstands. For a comprehensive specification contact Bauder technical department.	
Surface Finish	Top	Cementitious pre-applied inorganic coating
	Core	Cellular glass
	Bottom	Cellular glass
Colour	Grey finish	
Edge Profile	Square	
Article number	100mm board = GB30258100 140mm board = GB30258140 200mm board = GB30258200	
Website Link	https://www.bauder.co.uk/products/glas	

Characteristic	Test method	Unit	Value
Density (± 15%)	EN 1602	Kg/m³	100
Thickness ± 2mm	EN 823	mm	100, 140 & 200
Width ± 2mm	EN 822	mm	600
Length ± 2mm	EN 822	mm	450
Thermal conductivity	EN ISO 10458	W/m.K	$\lambda_{cor} \leq 0.038$ (Manufacturer's declared value)
Reaction to fire	EN 13501-1	-	Euroclass A1
Point load	EN 12430	mm	PL ≤ 1.5
Point load top	EN 12430	mm	PL ≤ 1 (≤ 0.5)
Compressive strength	EN 826 Annexe A	kPa	CS ≥ 400
Bending strength	EN 12089	kPa	BS ≥ 400
Tensile strength	EN 1607	kPa	TR ≥ 100
Dimensional stability after 48h@70°C & 90% RH	EN 1604	DS (70.90)	$\Delta\epsilon_{1,0} \leq 0.5\%$, $\Delta\epsilon_d \leq 1\%$
Water absorption on short term	EN 1609	kg/m²	WS ≤ 0.5
Water vapour transmission	EN 12086	μ	∞
Colour	-	-	Grey (Product is made from natural materials so the colour cannot be guaranteed and can vary from batch to batch)
Freeze Thaw	-	-	Resistant

CE – Marking ensure conformity with the mandatory essential requirements of CPD as mentioned in EN13167; within the CEN Keymark certification all mentioned characteristics are certified by an empowered, notified, and accredited 3rd party.

CERTIFICATION AND ENVIRONMENTAL INFORMATION	
BBA Certificate No	Pending
Environmental Product Declaration (EPD)	B-EPD n° 200010_001_EN
Declaration of Performance (DoP)	120270065B
Declaration of Conformity (DoC)	-
International Standards Organisation (ISO)	ISO 45001:2018 Health & Safety Cert No: BE 014112 ISO 9001:2015 Quality Management Cert No: BE 014114 ISO 14001:2015 Environmental Management Cert No: BE 014113
BRE Green Guide generic product rating	A+
Ozone depletion potential (ODP)	The insulation is totally inorganic, contains no Ozone depleting propellants, flame resistant additives or binders. Without VOC or other harmful substances.
Recycled content	Specially graded recycled glass ($\geq 60\%$)

BauderGLAS Characteristic		
Description	BauderGLAS is manufactured from specially graded recycled glass ($\geq 60\%$) and natural raw materials which are available in abundant supply (sand, dolomite, lime...). The insulation is totally inorganic, contains no ozone depleting propellants, flame resistant additives or binders. Without VOC or other volatile substances.	
Reaction to fire (EN 13501-1)	Material complying with Euroclass A1, non-combustible, no toxic fumes	
Properties in relation to fire	European Commission Directive 2000/553/EC	Designated BROOF(t4) (low vulnerability in Scotland) which is without restriction when used within a ballasted inverted roof construction.
Additional reaction to fire classification report	19984E (Warrington Fire)	
Service temperature limits	From -265°C to +430°C	
Water vapour resistance (EN ISO 10456)	$\mu = \infty$	
Hygroscopicity	Zero	
Capillarity	Zero	
Melting point (cf DIN 4102-17)	$>1000^\circ\text{C}$	
Thermal expansion coefficient (EN 13471)	$9 \times 10^{-6} \text{ K}^{-1}$	
Specific heat (EN ISO 10456)	1000 J/(kg.K)	

Normative references

For undated references, the latest edition of the referenced document (including any amendments) applies.

INSTALLATION GUIDANCE

INTRODUCTION

BauderGLAS Inverted Insulation is for use in conjunction with relevant Bauder Waterproofing Systems and exclusively within Inverted Roof Systems.

Depending on u value requirements, BauderGLAS Inverted Insulation can be used as a single or double insulation layer application, in which the top layer is always BauderGLAS Inverted Insulation. It is then overlaid with ballast, paving or extensive green roofs. Alternate finishes will require Bauder Technical approval.

BauderGLAS Inverted Insulation is to be used in conjunction with BauderJFRI WFRL (Water Flow Reducing Layer), which is laid over the insulation system, and beneath the roof finishes.

BauderGLAS Inverted Insulation is Euroclass A1 rated, non-combustible, and in fire situations does not contribute to the spread of flame. The inverted roof insulation system can be used for roof to falls or zero falls roofs (in compliance with BS6229:2018) with maintenance access, balconies or terraces for pedestrian use.

TYPICAL BUILD UP



Paving

Paving Support Pads (Specification Specific)

BauderJFRI WFRL

BauderGLAS Inverted Insulation

BauderGLAS T3+

(used in two-layer systems)

Bauder Waterproofing System

Screed to falls (if required, not shown)

Deck to falls (not shown)

INSTALLATION RECOMMENDATIONS

- All decks under a BauderGLAS Inverted Insulation System should be designed to comply with BS6229:2018 with a minimum fall of 1:80. BauderGLAS Inverted Insulation can be used in zero falls applications when designed to comply with the appropriate paragraph in BS6229:2018.
- Roof falls (as required) and drainage paths should be checked prior to BauderGLAS Inverted Insulation installation to eliminate ponding and the subsequent risk of silt build up, stresses in freezing conditions and to reduce water entry in the event of a failure in the roof waterproofing layer. BauderGLAS Inverted Insulation System is designed for use upon buildings with an internal temperature of 5°C or higher.
- In the case of a double layer insulation design, the thickness of the base and top layer should be in accordance with a Bauder Project Specification.
- The flatness and the general conditions of the substrate are important criteria when using BauderGLAS Inverted Insulation. Bauder Technical Department can be consulted for further guidance on suitability of substrates. Under a straight edge (reference) length of 2 m, the deviation should be less than 5 mm or 3 mm under a straight edge (reference) length of 0.6 m. For further guidance on the suitability of substrates please contact Bauder technical department.
- Installers of the product must take care not to damage the roof waterproofing, protection layers will be outlined in the Bauder Project Specification.
- If gravel is to be applied as the ballast, use of rounded gravel is then mandatory as well as a ballast bearing drainage layer. e.g. BauderGREEN DE NF 10 or Bauder SDF Mat.
- The ballast layer must be installed to prevent wind uplift and provide complete protection to the WFRL from UV degradation.
- Ballast design such as gravel or paving should meet the regulations for wind uplift.
- Gravel ballast (rounded low fines of nominal size 16 mm to 32 mm) should be washed and laid to a minimum thickness of 50 mm.
- Care must be taken to ensure that upgraded/refurbished roofs are capable of carrying the increased load and depth of the installed system.
- Adequate measures need to be taken during installation to prevent any damage of the insulation top coating, any damage must be repaired with BauderGLAS Inverted Insulation Repair Kit.
- Point loads need to be avoided at all times during the installation and specifically when installing the BauderJFRI WFRL, drainage membrane, pedestals, ballast etc. Where required a protective foot or crawl board must be used to distribute the loads on top of the BauderGLAS Inverted Insulation during the installation of the BauderJFRI WFRL and subsequent finishes.

MAIN SYSTEM COMPONENTS



Picture 1: BauderGLAS T3+ Base Layer



Picture 2: BauderGLAS Inverted Insulation

BauderGLAS T3+ insulation (picture 1) This product is only used in the base layer of a 2-layer system and is restricted to a 200mm maximum thickness.

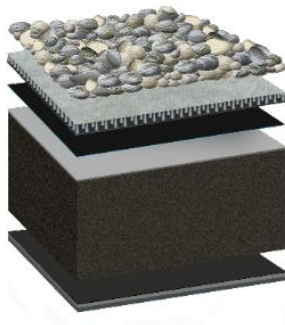
BauderGLAS Inverted Insulation (picture 2) can be used as a single layer but is always the top layer in the system, coating facing upward, colour grey. The coating shade varies in each batch and therefore cannot be specified or guaranteed. The grey coating is pale and becomes darker when wet, returning to its original colouring as it quickly dries.

Both products are 600 x 450mm. Thicknesses are determined by the u value requirement for the roof system and can be found in the Bauder Project Specification.

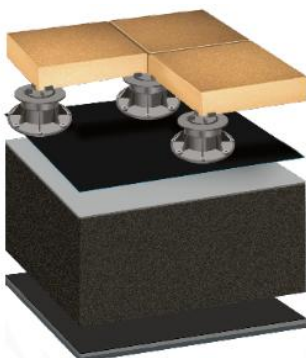
BauderGLAS Inverted Insulation System (Single and Two layer) Build Up Options

BauderGLAS Inverted System Non-Combustible Insulation on a Continuous Support.

One layer system

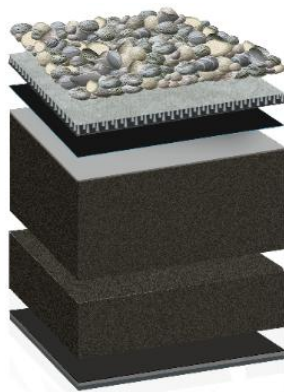


- Ballast
- Drainage composite layer (eg: BauderGREEN DE NF 10)
- BauderJFRI WFRL
- BauderGLAS Inverted Insulation
- Bauder Waterproofing (Hot Melt or RBM option shown)
- Deck to falls (not shown)



- Paving (by others)
- Bauder Pedestals
- BauderJFRI WFRL
- BauderGLAS Inverted Insulation
- Bauder Waterproofing (Hot Melt or RBM option shown)
- Deck to falls (not shown)

Two-layer system



Ballast
Drainage composite layer (eg: BauderGREEN DE NF 10)
BauderJFRI WFRL
BauderGLAS Inverted Insulation
BauderGLAS T3+
Bauder Waterproofing (Hot Melt or RBM option shown)
Deck to falls (not shown)



Paving (by others)
Bauder Pedestals
BauderJFRI WFRL
BauderGLAS Inverted Insulation
BauderGLAS T3+
Bauder Waterproofing (Hot Melt or RBM option shown)
Deck to falls (not shown)

APPLICATION

Substrate (Deck)

The substrate must be created as per BS6229:2018 Section 4.4. Deflection and Back Falls must be removed prior to waterproofing and BauderGLAS Inverted Insulation installation. The flatness and the general conditions of the substrate are important criteria when using BauderGLAS Inverted Insulation.

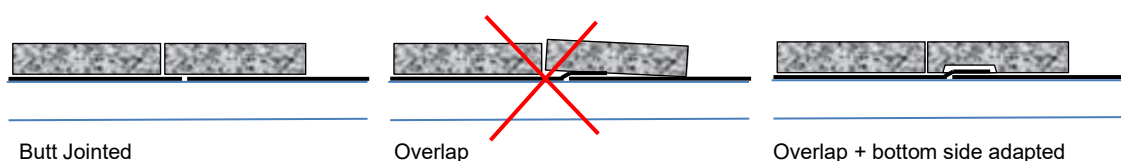
Prior to the BauderGLAS Inverted Insulation being installed the waterproofing must be cleaned of all debris. This careful preparation will result in a stable and rigid insulation build up.

BauderGLAS Inverted Insulation can be used with 3 of Bauders Waterproofing System's, namely Hot Melt, reinforced bitumen systems and LiquiTEC Cold Applied Liquid.

The Bauder Waterproofing system chosen should be installed as per manufacturer's recommendations. BauderGLAS Inverted Insulation must be evenly supported on the substrate. When working with 2 layers of insulation, the BauderGLAS Inverted Insulation is entirely supported by the base layer of BauderGLAS T3+ slab and must be laid correctly and evenly supported on the deck/substrate.

BauderGLAS T3+ slab and BauderGLAS Inverted Insulation are loose laid.

If side and end laps are required within the top layer of the chosen Bauder Waterproofing System then the layer of insulation in contact with the waterproofing can be adapted by abrasion, so that the BauderGLAS Inverted Insulation rests flat on the waterproofing either side of side and end laps. Bauder will state the method to be used within the Bauder Project Specification to achieve continuous contact with the deck/substrate surface and if an isolation layer is required to protect the waterproofing from damage by the BauderGLAS Insulation.



Single Layer system:

Make sure to install the BauderGLAS Inverted Insulation with staggered joints. The stagger should be a minimum of 150mm.

Infill pieces must have a minimum width of 150mm.

To maximise insulating performance ALL abutments and insulation joints MUST be tightly butted up. If necessary re-measure, replace or cut/sand down and re-install any insulation which is not fitting correctly. Also ensure BauderGLAS Inverted Insulation is tight with no gaps where it meets rooflights, walls, edge details and other services which perforate the roof deck.

Two Layer system:

Each insulation layer is offset relative to the other, (see Pictures 3 & 4). The best staggered overlap is 150mm or more.

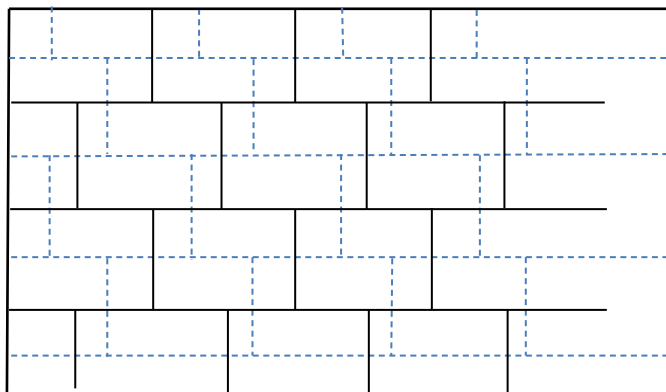
Infill pieces must have a minimum width of 150mm.

The base layer, BauderGLAS T3+ slab should always be installed with staggered joints, with minimum stagger of 150mm (Picture 3 dotted line).

The insulation top layer, BauderGLAS Inverted Insulation, should always be installed with staggered joints, with minimum stagger of 150mm (Picture 3 black line).

To maximise insulating performance ALL abutments and insulation joints MUST be tightly butted up. If necessary re-measure, replace or cut/sand down and re-install any insulation which is not fitting correctly. Also ensure BauderGLAS Inverted Insulation is tight with no gaps where it meets rooflights, walls, edge details and other services which perforate the roof deck.

See Picture 3: blue dotted line = BauderGLAS T3+ layer, full lines = BauderGLAS Inverted Insulation



Picture 3



Picture 4

Shaping and adapting the insulation in case of unevenness

BauderGLAS Inverted Insulation is easily trimmed and shaped, therefore if the substrate or abutment is uneven, it's easy to modify the insulation by abrading / sanding or cutting to fit. The BauderGLAS Inverted Insulation layers must be fully supported upon the substrate with no rocking or movement.

Always use the correct PPE as sanding and cutting of the insulation will create offcuts and dust. To ensure the insulation is sitting correctly in position with closed joints and no rocking or movement, remove offcuts and dust from the area prior to laying the insulation.

Useful tools:



Grind Board

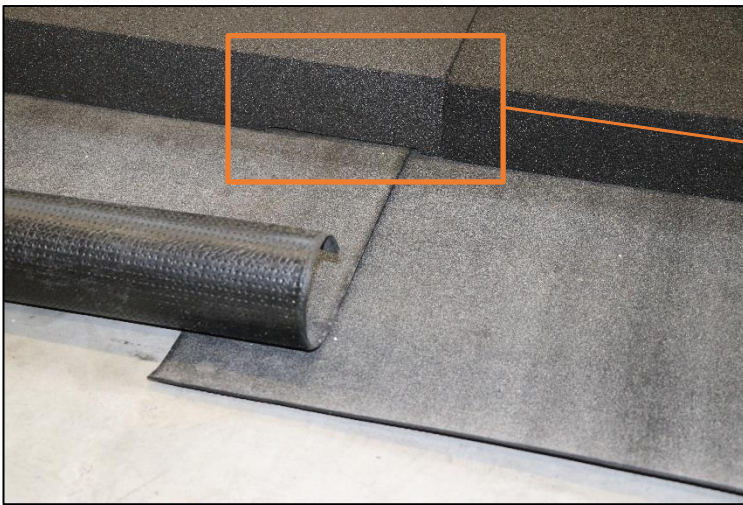


Grater



Spatula

Examples of the above in use can be seen below.



Cutting BauderGLAS Inverted Insulation

Bauder recommends that designated areas are set out on each roof area to limit the spread of debris accumulated in the cutting and abrading processes.

BauderGLAS Inverted Insulation is easy to cut and adjust.

Many contractors will set up a working area with all the necessary marking out and cutting tools; this ensures all the offcuts and dust is in one working area. Regularly clear away the offcuts and dust to maintain a clear and dust free working and installation area.

Sanding / abrading is used to make small adjustments.

Cutting is used to trim down the insulation to create the staggered layout, and to fit neatly against the adjacent insulation and abutments. To maximise insulating performance ALL abutments and insulation joints **MUST** be tightly butted together.

If necessary re-measure, cut and re-install any insulation which is not fitting correctly.

A metal saw or hardpoint timber saw is used for cutting all BauderGLAS insulation.

It is important to use a square edge, mark a line (pic 1), and make a clean and straight cut (pic 2). Prepare a robust, flat working surface which fully supports the insulation. This will ensure accurate, safe and easy cutting of the insulation material.



Cutting the insulation with a saw.

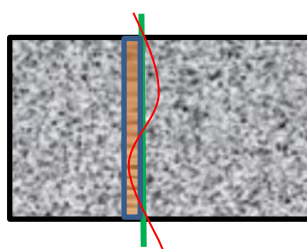
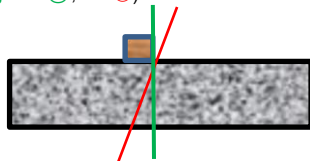
Make sure the insulation is fully supported and not rocking or moving. Saw on the downstroke, DO NOT saw on the upstroke, this will chip the insulation and surface coating.

Carefully saw in a straight line (green 😊) if you do not saw in a straight line (red 😞) you will have additional work to sand the insulation until you have a flat surface. If a diagonal line is to be cut, measure and mark very carefully to ensure the angle is accurate.

To ensure the insulation system is closed up tightly, where possible ensure that the factory machined edges of the insulation butt up against each other; and the cut edges are against an abutment such as a parapet, or roof light etc.

Ensure you saw in a straight line and cut vertically through the insulation.

(green 😊, red 😞)



The cut side of the BauderGLAS should be to the outside (wall/parapet) to prevent open joints and getting misplacements of the next slabs.

Making holes in BauderGLAS T3+ or BauderGLAS Inverted Insulation

To cut round holes through the insulation place the insulation on a flat and stable surface. Select a thin-walled tube with the correct external diameter (Picture 8). Using a rotating motion gradually press the tube through the FOAMGLAS® (finish as Picture 9). In the case of the BauderGLAS Inverted Insulation always press from the coated side.

Large holes should be cut with a saw and neatly sanded to the desired shape.



Picture 8



Picture 9



Picture 10

Sanding/Abrading BauderGLAS Inverted Insulation after cutting

Use a sanding block to shape the underside of the insulation, to ensure a firm and stable contact with the substrate or an abutment.

Sanding the edge of BauderGLAS Inverted Insulation, start at the coating and sand with a downwards motion. Do not sand on the upward stroke, since this can possibly chip the insulation and coating (see Picture 10)

SYSTEM INSTALLATION

Single layer

The waterproofing will already be installed as per the Bauder specifications and recommendations. BauderGLAS Inverted Insulation is loosely laid with staggered joints on a flat substrate. After the insulation is laid, check it is fully supported upon the substrate with no rocking or movement. All insulation joints should be tightly butted together and tight against the abutments. If necessary remove and refit or replace any wrongly fitted insulation. Walking over the BauderGLAS Inverted Insulation during installation is possible, but should be done with care. If required it's important to use "walking boards" to reach the areas where you want to bring all other materials such as BauderJFRI WFRL, pedestals and paving, etc. Point loads upon the insulation surfaces are to be avoided, adequate preparation's and care should be taken at all times.

It is recommended to install BauderJFRI WFRL over the BauderGLAS Inverted Insulation at the end of the working day. Where possible install the insulation, WFRL, and finishes such as pedestals and paving in one stage, gradually moving across the work area. This avoids the need for moving the protection boards around; and the finishes also protect the insulation system from damage by other trades.

Two or more layers

Base Layer

The waterproofing will already be installed as per the Bauder specifications and recommendations. Using the setting out plan previously described the BauderGLAS T3+ slabs are loosely laid with staggered joints on a flat substrate. Fit the BauderGLAS T3+ slabs individually ensuring they are all fully supported upon the substrate with no rocking or movement.

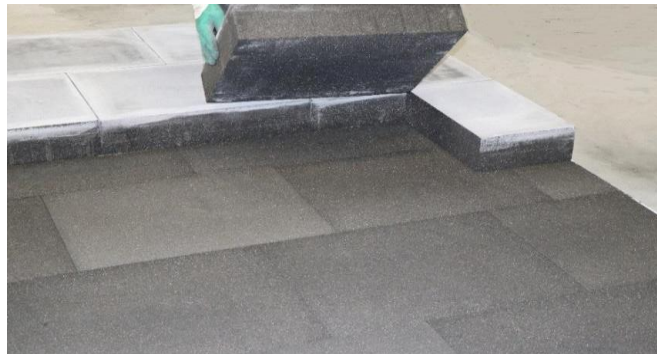
If the base layer insulation is firmly supported upon the substrate, but there are slight differences in the top surface level, this surface can be carefully sanded flat.

Top layer

After the base layer is installed correctly you can start with the top layer of BauderGLAS Inverted Insulation

Following the setting out plan previously described lay the BauderGLAS Inverted Insulation in a staggered / offset pattern which is also offset from the insulation layer beneath. Joints in the top layer should not align with the base layer.

After the top layer of insulation has been laid, check it is fully supported upon the base layer with no rocking or movement. All insulation joints should be close butted together and tight against the abutments. If necessary remove and refit or replace any wrongly fitted insulation. BauderGLAS Inverted Insulation can be cut, sanded and adjusted.



Walking upon the BauderGLAS Insulation

Walking upon the BauderGLAS Insulation layers is possible during installation but should be done with care. We recommend that where two layers of insulation are required, both layers are installed prior to walking on. If required it's important to use "walking boards" to reach the areas where you want to bring all the other materials such as WFRL, pedestals and paving, etc. Point loads upon the insulation surfaces are to be avoided, adequate preparation's and care should be taken at all times.

Following trades should not have access to insulated roof areas prior to the surfacing/landscaping being installed unless the insulation is securely protected. Advice on how to achieve this is available via Bauder technical department.

Small repairs to the BauderGLAS Inverted Insulation coating

Small damage to the BauderGLAS Inverted Insulation coating or small flakes chipped off, can be repaired using BauderGLAS Inverted Insulation Repair Kit (Grey Colour to match the coating). To ensure a good quality install it is important to repair any damage to the coating. Should there be any major damage, the insulation should be replaced. The BauderGLAS Inverted Insulation Repair Kit is a solvent-free 1-component synthetic resin paste which is purpose manufactured for the BauderGLAS Inverted Insulation coating. It is packed in 25 kg buckets and has a grey colour.

The BauderGLAS Inverted Insulation Repair Kit is applied with a spatula. Apply the paste evenly and press it into the damaged area, finally smooth off with the spatula, and leave to dry. To prevent the mix drying out. Each time after use, replace the plastic film covering on the product before cleaning the edge of the pail and

fitting the lid. When the pail is closed correctly the paste will not dry out and will remain useable for a long time. For correct storage and expiry date see the BauderGLAS Inverted Insulation Repair Kit packaging and data sheets.

Below: Using BauderGLAS Inverted Insulation Repair Kit to repair to the edge of the BauderGLAS Inverted Insulation coating.



(Picture 1)



(Picture 2)

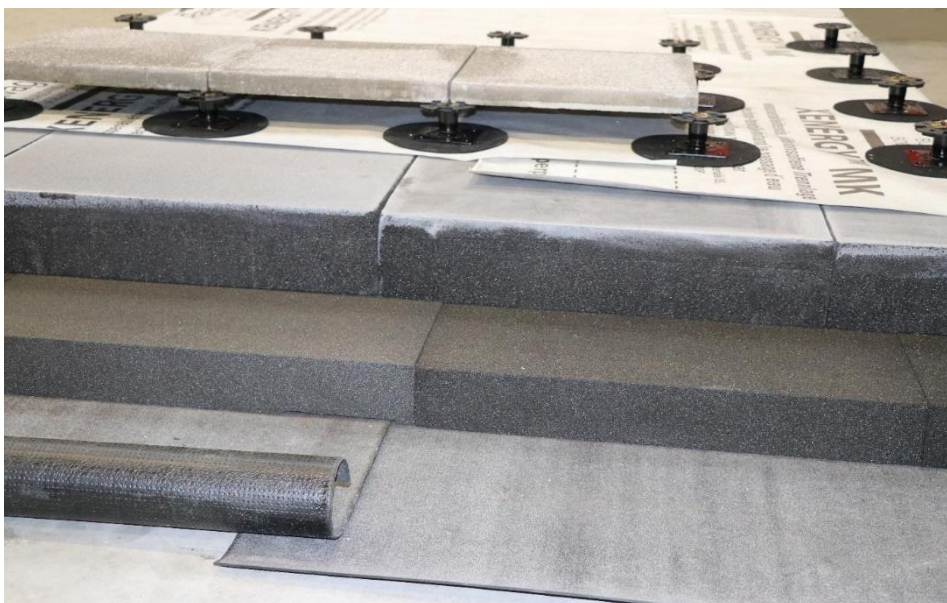


(Picture 3)

WATER FLOW REDUCTION LAYER (WFRL) AND SURFACINGS

Install the BauderGLAS JFRI WFRL over the BauderGLAS Inverted Insulation following the manufacturer's guidelines for all overlaps and necessary details. Further finishes over the BauderGLAS JFRI WFRL such as pedestals / tiles / gravel / ballast are installed according to the manufacturer's guidelines.

The BauderGLAS JFRI WFRL minimises the quantity of rainwater which could flow into the insulation system, leading to increased heat loss. Rain which falls upon the roof percolates down to the WFRL, and then drains away at the rainwater outlets. The performance of the BauderGLAS JFRI WFRL, and subsequent rainwater cooling effect is taken into consideration when determining the U-value of the roof.



IMPORTANT NOTES FOR INSTALLERS OF WFRL AND PAVING/BALLAST

Installers of the BauderJFRI WFRL and the finishing (gravel or paving) must take care not to damage the BauderGLAS Inverted Insulation and the BauderGLAS Inverted Insulation coating.

It is recommended to have the BauderJFRI WFRL installed over the BauderGLAS Inverted Insulation at the end of the working day.

Where possible install the insulation, BauderJFRI WFRL, and finishes such as pedestals and paving in one stage, gradually moving across the work area. This avoids the need for moving the protection boards around; and the finishes also protect the insulation system from damage by other trades.

If damaged the BauderGLAS Inverted Insulation insulation should be repaired or replaced.

The base of the pedestal support system should be smooth and flat to evenly spread the loads over the insulation system. A round pedestal base is preferable to a square or rectangular base.

TRANSPORT

BauderGLAS Inverted Insulation Board is transported direct to site from the manufacturer on artic or rigid vehicles. Due to the weight of this material all insulation must be offloaded via a forklift or crane and cannot be handballed.

PRODUCT STORAGE GUIDANCE

Store the materials outdoors with suitable robust UV resistant, flame-retardant tarpaulin. Ensure the product(s) are clear of buildings and any other storage areas. The products must not be exposed to a direct naked flame or other ignition sources, or to solvents or other chemicals. All insulation boards must be kept dry, on pallets and off the ground. The packaging of Bauder Insulation products should not be considered adequate for weather protection. Where there are storage containers on site, these may be suitable for storing products.

Damaged boards must not be used.

PACKAGING MATERIAL

BauderGLAS Inverted Insulation Boards are shrink wrapped in polyethylene with cardboard and delivered to site on wooden pallets.

Pallet size – 1.0 x 1.2 x 1.4m high approx.
Boards per pallet depend on board thickness.
100mm – 12.96m²
120mm – 10.8m²
140mm – 8.64m²
160mm – 7.56m²
180mm – 6.48m²
200mm – 6.48m²

HANDLING/PPE

All persons using this product should be fully aware of the manual handling methods as roofing materials are heavy and can cause serious injury. When using this product, installers should be provided with, and wear, suitable personal protective equipment.

PPE should include appropriate safety goggles when cutting, drilling or abrading to protect against dust / projectile material. Wear the PPE generally required for the jobsite with a minimum of gloves to protect against possible sharp edges on the cellular glass board and a suitable dust mask to protect against dust inhalation.

BauderGLAS Inverted Insulation is not toxic.

Safety glasses are a must when handling, cutting, grinding, crushing, or drilling BauderGLAS Inverted Insulation. Wear safety glasses with side shields or dust goggles in dusty environments. Wear goggles for dust protection while cutting or abrading in wind. A mouth nuisance dust mask (type FFP1 or higher) is useful when cutting or abrading, but not necessary.



BauderGLAS Inverted Insulation Board is recyclable. Off-cuts need to be disposed via an authorised disposal contractor to an approved waste disposal site, observing all relevant regulations.

Please ensure all installation specifications meet any associated Building and Fire Regulation requirements.

Follow the safety instructions as indicated in our Safety Data Sheet.

Always follow the safety instructions valid on the construction site.

SHELF LIFE

When stored correctly, the product has no stated shelf life.

DISPOSAL GUIDANCE

Off-cuts need to be disposed via an authorised disposal contractor to an approved waste disposal site, observing all relevant regulations. (European waste catalogue EWC number 17 06 04 "Insulation material").

Technical data sheet

12.06.2026

RE-USE OPTIONS OF PRODUCT

BauderGLAS Inverted Insulation is recyclable.

Please refer to EPD in Certification and Environmental information section. Document can be found at www.bauder.co.uk

FURTHER INFORMATION/DOCUMENTS

Current documents such as brochures, installation guides, etc can be found by visiting www.bauder.co.uk

Safety Data Sheets are designed to provide the necessary information to recipients of substances and mixtures in the EU & UK. This product is classed as an article; therefore, this product does not have a requirement for a Safety Data Sheet.



Can be found via the website