

The Vario System

- keeps heat in
- keeps draughts out
- beats present and future regulations
- saves energy

A+



ISOVER
Vario KM Duplex UV

May 2011

VARIO - Airtight Intelligence

The multitasking membrane

ISOVER
SAINT-GOBAIN

Sustainable Insulation Solutions

A truly exceptional product that exceeds all industry standards. At ISOVER, we've developed Vario as the most advanced airtightness & moisture management system on the market.

Introducing Vario from ISOVER

Vario is an intelligent membrane, designed to adapt to the climate and protect your building, inside and out. It's also designed with an uncompromising commitment to superior airtightness. Vario will improve your BER (building energy rating), save money, increase comfort and help to combat climate change.

Vario meets and exceeds industry standards, while making a substantial contribution to your BER and environmental footprint. Developed in Germany and available exclusively from ISOVER, Vario membrane is as

sophisticated as human skin – altering its structure according to relative humidity.

Vario vapour control membrane offers superior performance, facilitating the drying of the building structure whilst delivering superior levels of airtightness within the building envelope. Just how good is it? Vario's performance is truly outstanding, it has an excellent variable s_d -value: it diffuses 25 times more moisture in summer than the structure absorbs during winter.



Part L Regulations

The new Part L Regulations that are now effective (July 2008) focus on the conservation of fuel and power within new dwellings. New structures now require an Airtightness level of 10m³ at 50 Pa. They will be tested by the Blower door method to ensure they meet the required airtightness level. Considering that testing is now mandatory, Vario represents a wise investment. Now, more than ever, airtightness in new buildings should be considered a key issue at the design stage: the old culture of 'filling gaps' after construction will not deliver the standards and performance expected.

Vario is purpose-designed to deliver airtightness. In the industry, you know that you have to meet Part L regulations. At ISOVER, we hold high standards of our own and are devoted to continually developing truly superior, cutting edge building materials. With Vario, we significantly outperform the regulators specifications: in fact with the Vario system you can achieve the air change targets needed to achieve the

Passivhaus standard, thus future proofing buildings against future standards. This is crucial, as Ireland is rapidly moving towards the Passivhaus standard in order to meet its CO₂ targets according to the Kyoto Protocol.

Vario not only achieves superior standards, but future proofs your building against increasingly strict standards and regulations which will soon render others obsolete.



In this brochure, we introduce you to this exceptional system, and demonstrate its installation and performance in a wide range of building applications. Vario is truly a multitasking membrane, delivering draught, moisture, toxicity protection and insulation, but above and beyond all these – airtightness.

**Vario from ISOVER
- a system you
can rely on.**

Vario membrane and Glasswool insulation

When it comes to specifying an insulation and airtight solution for your building, you need a superior system you can rely on: high performance products that are efficient, economical and energy saving. If you want an optimum solution, there are several qualities you need to look for: airtightness, thermal efficiency, acoustic comfort, fire protection, moisture control and - not least - cost-effectiveness and ease of use. Our newest innovation - Vario KM Duplex UV - together with ISOVER Glasswool solutions delivers on every requirement, with airtightness and overall performance that is second to none.



Airtight Solution - if you want to achieve a good energy rating in any building, it must have airtightness. With Vario ISOVER lead the way in innovative solutions for superior airtightness performance.



Fire Protection - Glass Mineral wool is totally non-combustible, even in direct, prolonged contact with flames. It emits no fumes or smoke and carries European Euroclass A1 Fire Ratings.



Thermal Efficiency - ISOVER products help you meet and exceed building regulations with superior thermal efficiency: installing our insulation can reduce overall heating costs by up to 60%.



Moisture Control - Vario is a moisture control membrane and Glasswool has an open structure, so both allow buildings breathe naturally, and new constructions dry out easily.



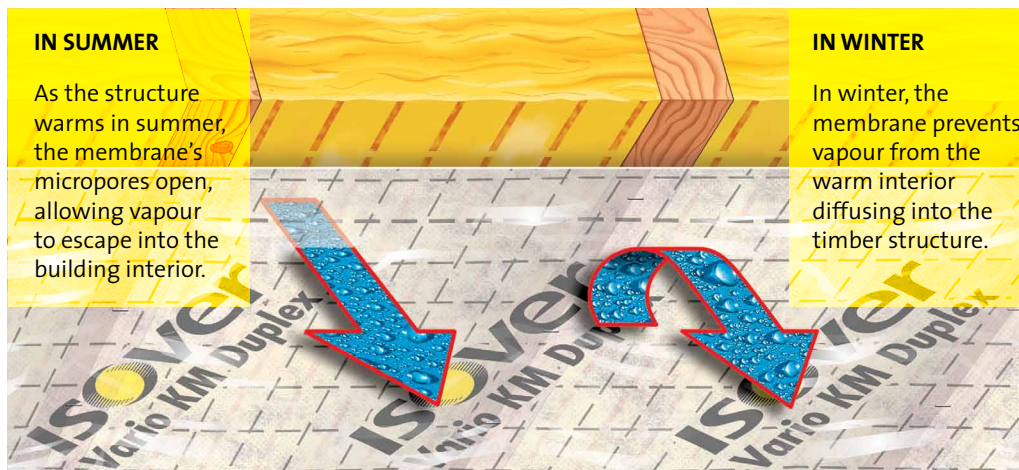
Acoustic Comfort - Our Glasswool offers outstanding acoustic performance, adding real comfort and quality of life through superior noise reduction.



Sustainable Product - Glasswool is a highly sustainable product: it is based on silica sand, the world's most abundant natural material, and features over 80% recycled glass.

How does the Vario membrane work?

Vario's most unique quality is its ability to change its water vapour performance. The Vario membrane adapts and reacts naturally, changing its permeability according to humidity conditions, allowing closed building systems to increase their drying potential. This means Vario is truly multifunctional: acting as a barrier in winter and a breathable membrane in summer.



The Vario System – a family of integrated products

As all specifiers know, choosing the highest performing product is only half the equation. Performance advantages can be lost if on-site installation is compromised. That's why we've developed Vario as an integrated system of membrane, tapes and sealant designed to work together. Whatever the building application, by specifying Vario, your building envelope will be airtight, capable of supporting controlled airflow, working against moisture and toxicity, and delivering a host of energy and environmental benefits. The ISOVER Vario system leaves no gap unfilled, draught-proofing and damp-proofing your building down to the very last corner, guaranteeing the performance and protection of the building structure for its entire lifetime.



Additional Features and Benefits

By specifying Vario, not only do you get airtightness and moisture control, you get all of the following:

FEATURES:

- Vario features exceptional tear strength, tensile strength three times stronger than polythene, and less likely to be damaged during installation.
- Vario is supplied in roll dimensions compatible with modern construction methods, easy and accurate cutting and installation is possible due to markings printed on the membrane.
- Vario features UV protection for longer shelf life - and for protection during construction where structures are exposed to the sun.
- Vario is storm tested up to 150km.
- The Vario system is patented worldwide.

BENEFITS:

- Vario prevents mould and mildew growth by reducing the potential for moisture accumulation.
- For renovation projects, especially loft spaces and roofs, Vario together with Glasswool insulation dramatically improves the thermal performance of an older building.
- Vario allows timber dampened by rainfall during construction to dry out faster.
- Vario automatically adapts to long heating and short drying periods, unlike conventional membranes that behave the same way in all conditions.
- Vario protects the inside of the building against toxic gases - particularly important when converting the attics of older buildings into living space.

Where should you use Vario?

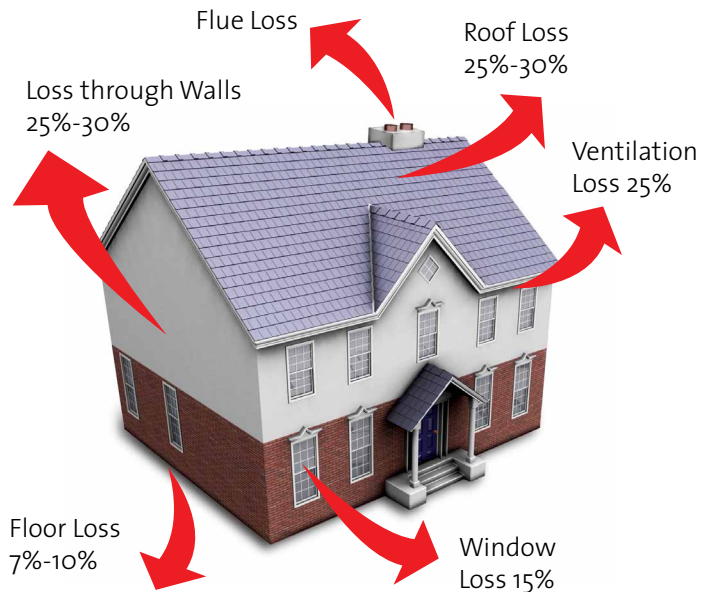
In these times of high fuel bills and concern about energy efficiency, a quality insulation and airtightness system is more important than ever. Superior insulation is the ideal solution – because it's a sustainable, effective, economical investment for everybody's wellbeing. It will help you save on bills and protect the planet too.

In reality, heat lost through the fabric of a building can be substantial, resulting in higher fuel consumption in order to maintain comfortable room temperatures, and substantial energy wastage. Vario together with Glasswool insulation, let you choose whether to make your building an energy liability or an inspiration. Choosing Vario allows you avoid energy loss and create a sustainable, comfortable home. So whether you are planning to go with a timber frame, masonry or steel frame construction for a new building or dwelling, select Vario: the leading, contemporary high performance membrane.

Vario intelligent membrane can be used in a diverse range of constructions:

Areas of Heat Loss in Homes

Source: SEI



Timber Frame Buildings

On roofs, walls, windows and doors, sealing up any openings or penetrations in the building envelope where heat might be lost.

Masonry Buildings

On roofs, windows, doors and also to seal up any opening or penetrations in the building (such as vents for tumble dryers) where heat can be lost.

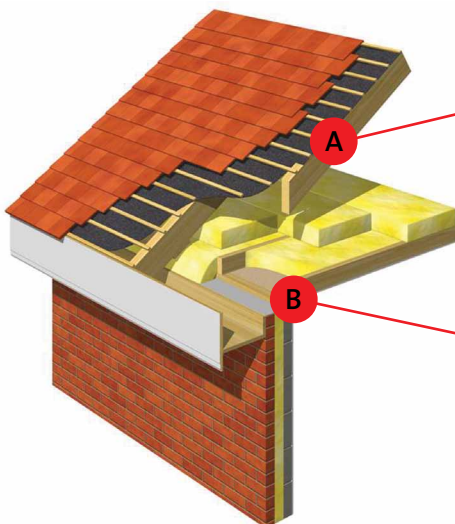
Steel Frame Buildings

In steel frame structures such as commercial and retail buildings, Vario can be used in the same applications as on timber frame structures, except tapes are used instead of staples.

ROOFS - Timber Frame, Masonry and Steel Buildings

No matter what type of structure or material forms the frame of your building, your roof can be fitted with Vario.

Vario is also an essential tool in fixing any penetration or opening in the roof of your building structure. The flexibility of the Vario system allows you to achieve airtightness and heat protection by sealing all penetrations and thus the building envelope.



A: Inhabited roof structures – Vario is stapled to the rafters of the sloping roof on the inside.



B: Uninhabited roof structures – Vario is stapled to the underside of the joists and sealed to the wall on the inside.

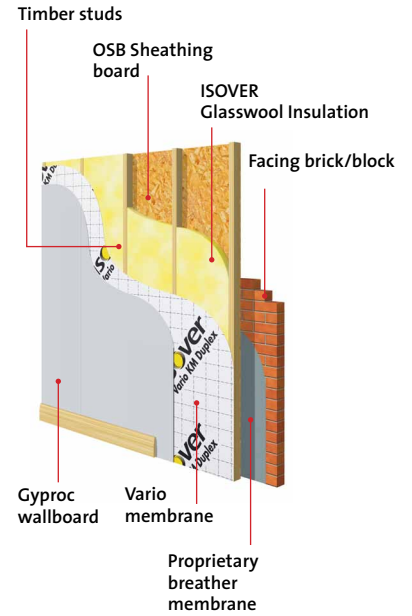
WALLS - Timber Frame Buildings

Vario offers specifiers of timber frame housing a complete solution. Vario is the world's most advanced solution for the management of interstitial moisture in timber framed construction. Vario technology is proven, having been extensively tested and specified in high volume timber frame construction in the exacting standards and climates of Northern Europe and Scandinavia.

Specifiers dealing with timber framed buildings start with an advantage in that the Vario membrane is also an effective air barrier - providing exceptional airtightness for the building envelope.

Another unique quality of Vario is its ability to protect the inside of the building and its occupants against toxic gases, which may emanate from chemical preservatives contained within the timber structure. This is particularly important when converting the attics of older buildings into living space, as the type and toxicity of any preservatives can be unknown and therefore potentially hazardous.

The Vario system of membranes and tapes is used to wrap and seal the outer walls (by stapling to the studs), windows, doors and all penetrations of the building envelope.



WALLS - Masonry Buildings

The Vario system is also the optimum solution for masonry construction. Selecting Vario as your membrane of choice provides exceptional airtightness of the building envelope when applied to the sealing of windows and doors, timber roof structures, and the sealing of separating timber floors to block walls and of all penetrations throughout the masonry building envelope.

Vario membrane is stapled to the underside of joists below the attic and then sealed to walls. Where separating timber floors join outer block walls Vario tapes are used to seal potential leaks.

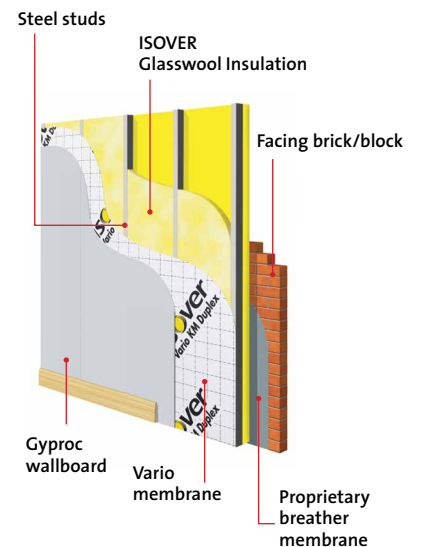


Vario membrane is sealed to masonry walls at ceiling level, also Vario tapes are used to seal the point where timber separating floors penetrate the outer blockwork and where windows meet blockwork

WALLS - Steel Frame Buildings

In structures such as commercial and retail buildings, Vario can be used in much the same way as on timber frame structures: sealing the outer walls on the warm side, windows, doors and all penetrations of the building envelope.

The flexibility of the Vario system allows you to achieve the highest standards of airtightness and heat retention in any size commercial and retail building.



Penetrations and Openings

One of the most common ways to compromise your building's overall airtightness and heat retention is to fail to address penetrations. This can be easily remedied with the Vario System.



Vario System: the complete ISOVER system for airtightness, thermal, sound and moisture protection

A quick guide to what, where and how to use



Vario KM Duplex UV Membrane
The heart of the Vario System: our patented polyamide membrane acts like a sensitive skin.



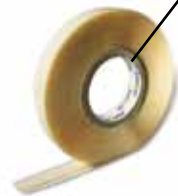
Metac
The Metac innovative multi-application high performance thermal roll – our finest thermal insulation product.



Integra ZUB *NEW
Integra is a new “next generation” breathable roofing underlay membrane. It is water resistant, very strong and is a vital component for creating an airtight, vapour control system.



Vario KB1
Our high adhesion, single sided tape provides wind and airtight adhesion of Vario membrane for horizontal and vertical overlapping.
NEW: Now features water resistant glue and measurements on the tape to make installation easier.



Vario Protape
A high adhesion double sided tape, frost and water resistant, used for sealing membrane to all types of building components.



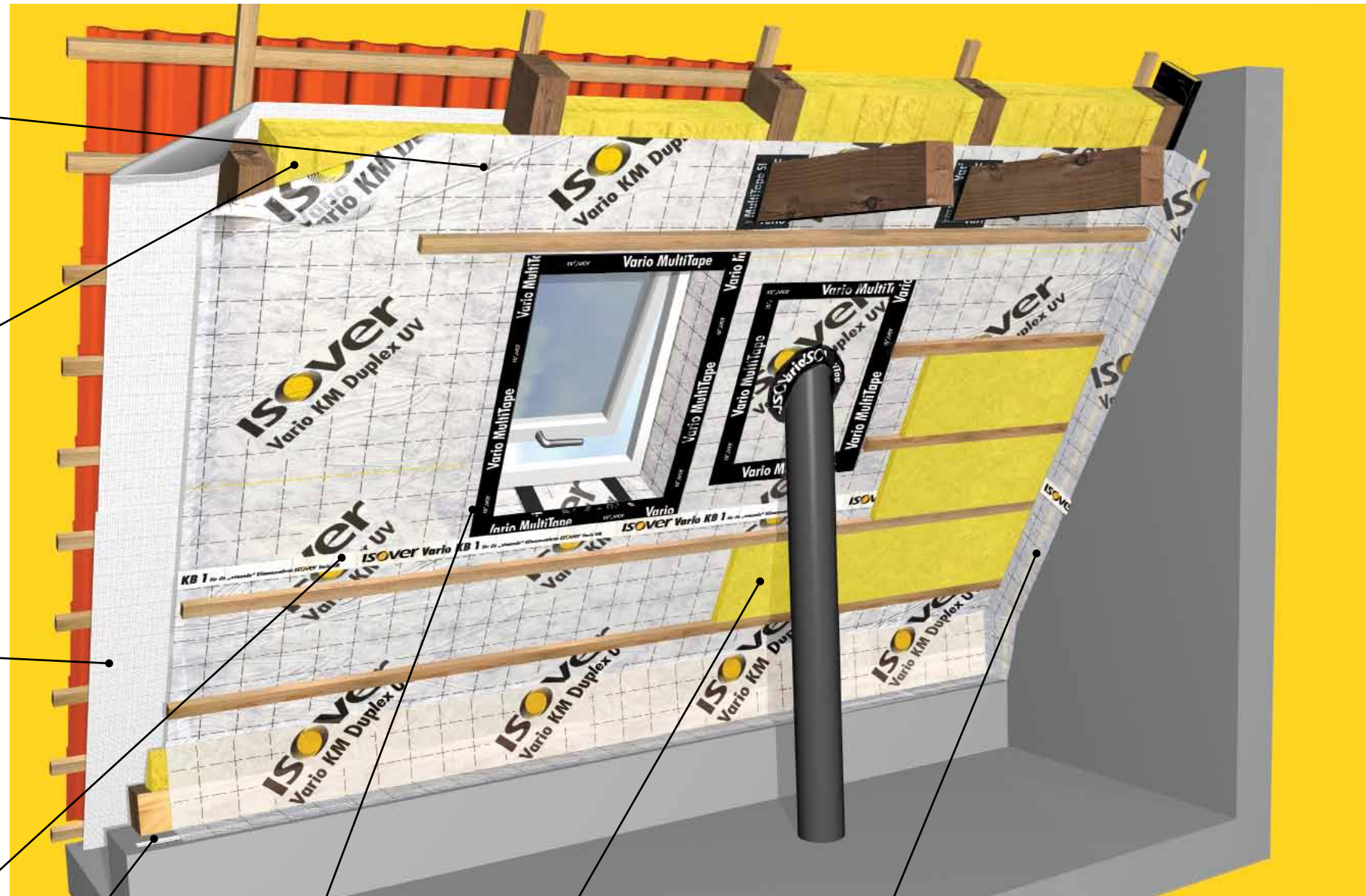
Vario Multitape SL
Multitape SL, a non-ageing tape, features extremely high adhesion for sealing overlapped membrane joints and – crucially – sealing effectively around any installation gaps.
NEW: Now features water resistant glue



Isoflex Glasswool batts are available in a range of thicknesses, and are recommended for an increase in the thermal and acoustic performance of the building.



Vario DS Sealant
A flexible mastic that bonds membrane edges to any building structure material e.g. blocks, concrete and plasterwork.



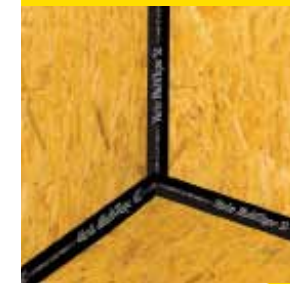
Vario Membrane - stapled to the rafter approx 200mm apart.



Vario and KB1 - with KB1 tape then applied to where the Vario membrane overlaps (at 10-15cm).



Vario DS Sealant - membrane edges are bonded with DS Sealant.



Vario Multitape SL - effectively tapes and seals all penetrations and junctures.



Vario Multitape SL - effectively seals windows.



Vario Protape - sealing membrane to plasterwork using Protape.

Vario System – product specification

Stock Code

Vario KM Duplex UV

5200300299

Size 1.5mt x 40mt = 60m²

Reinforced, laminated water vapour retardant climate membrane with polyamid base; moisture-variable sd of 0.3 m to 5 m. Minimum UV-stability of 18 months; thickness 0.2mm. EN13984



Vario KB1 – Single sided tape

5200300297

Size 60mm wide x 40metre long

Withstands temperatures between -30°C and 100°C. **NEW:** Now features water resistant glue and measurements on the tape to make installation easier.



Vario DS Mastic

5200300295

Size 310ml cartridge

Permanent, solvent free, elastic sealant; applied in 6 to 8mm thick lines; can be used at temperatures from -5°C to 50°C.



Vario Multitape SL

5200300298

Size 60mm wide x 25metre length

A flexible strong adhesion tape with pre-cuts for folding; non-ageing; withstands temperatures between -40°C and 100°C. **NEW:** Now features water resistant glue



Vario Protape

5200300296

Size 25mm wide x 10metre length

A highly adhesive double sided tape; frost, water and moisture resistant; storm tested to 150km/h.



Integra ZUB

5200300275

Size 1.5mt x 50mt = 75m²

100% polyolefin membrane; S_d-value 0.03m; minimum UV stability guarantee of 6 months; withstands temperatures between -40°C and 100°C; thickness 0.045mm. EN 13859-1/2.



Metac Glasswool roll

Size Thicknesses available 80mm to 220mm x 1200 wide

Euroclass A1 Fire rating; thermal conductivity 0.034w/mk. Separate data sheet available.



Isover Glasswool batts

Size thicknesses available 50mm to 150mm

Euroclass A1 Fire rating; Separate data sheet available.



At ISOVER, we believe the Vario System is the best airtight solution available on the current market.

As airtightness is a new regulation, the level of practical experience within the industry is very low. Meeting this new regulation doesn't have to be "mission impossible". It's a simple process once you use the right system. But you don't have to take our word for it. Seeing is believing and with this in mind Isover have developed a short demonstration film and our technical sales team is available to give on-site assistance. So please do not hesitate to call us.

We can assist you with not only the Vario airtightness system but also fire safe thermal and acoustic insulation solutions. All the ingredients you need for a comfortable energy efficient building.

Contact your local representative for details of the nearest stockist of the Vario system.



**We are here to advise and assist you.
Call 01 257 5400**



About ISOVER:

ISOVER have always been committed to comfortable living and climate protection. We believe in developing products to create a better, more comfortable world. Already, ISOVER insulation warms and protects 1 in 3 homes in Europe and 1 in 5 in America. Our products save you energy and money; but they also come with a proven environmental pedigree. As Europe's leading producers of high-performance insulation materials, every day we strive to develop increasingly efficient and resource-saving products. We know our responsibility to the earth and continually innovate to deliver the best products to our customers.

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