

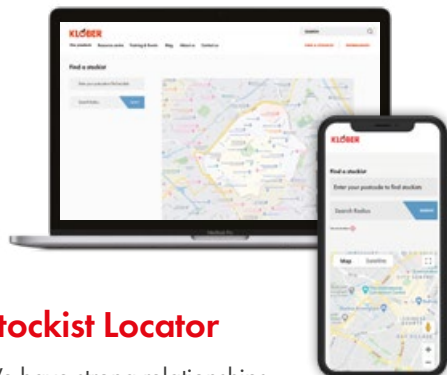
YOUR GUIDE TO

Roofing Membranes



KLOBER

Why Choose Klober?



Stockist Locator

We have strong relationships with independent and national roofing and builders merchants across the UK, including online stores. This means you'll find our products stocked nationwide, so you can order Klober materials when you need them for either collection or delivery to site. Not in stock? Don't settle for anything less! Contact us today and we'll help you locate a stockist. Find your stockist at klober.co.uk

- ✔ Klober has been proudly supplying roofing materials for over 60 years, which means our products have been tried and tested by installers.
- ✔ Klober is stocked nationwide at independent and national builders and roofing merchants as well as online businesses, so you can order our products on the go.
- ✔ Klober offers a wide product choice, which means you'll find all of your roofing ventilation and accessory solutions required for the job in one place.



Online Resources

Looking for datasheets, literature or just more information? The Klober website is packed full of resources including installation videos. Find out more at klober.co.uk



Technical Support

Need support on the go? We have a Technical Support Line who are here to help with any product or installation queries.

Telephone: 03306 780 088

Opening Hours: 8:00am - 5:00pm Monday to Friday



Membranes

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Over 60 years of completing quality roofs that create a safe, comfortable and sustainable environment.

KLOBER

QUALITY & INNOVATION

SINCE 1960



About Membranes

What is a Roofing Membrane?

A pitched roofing membrane, sometimes referred to as underlay, is designed to help reduce the effect of wind loading whilst providing a secondary layer of protection against water penetration beneath the primary roof finish, such as slate or tile.

Membranes should also provide a clear path to the roof drainage system from the batten space for any water that may collect on their surface.

Types of Membranes

There are two main types of membrane recognised by BS 5250 which is the British Standard for the Control of Condensation in Buildings:

High Resistance (HR)

HR membranes are impermeable underlays and will resist the passage of water vapour through the body of the membrane. HR membranes will always require additional roofspace ventilation.

Low Resistance (LR)

An LR membrane will always have a lower vapour resistance figure and as such will allow an amount of water vapour to pass through the membrane by diffusion, lessening the risk of the build up of harmful condensation. LR membranes are also known as vapour permeable membranes.

The use of an LR membrane will therefore typically require less additional roofspace ventilation than that of a HR membrane, although in accordance with BS 5250 the amount required will depend on the type of construction and whether a well sealed ceiling is present.

It is important to note that the NHBC guidelines require additional roofspace ventilation when using an LR membrane in a cold roof situation, regardless of the type of construction.

This would normally be a continuous 5mm at high level as a minimum requirement if there is no eaves ventilation present.

There are some membranes however with exceptionally low figures that also allow air movement through the membrane as well - these are known as air open membranes and are normally validated by third party certification. Klobber's BBA approved Permo Air for example is accepted by the NHBC as needing no additional ventilation. This type of membrane is particularly effective during the drying out period of a building, a time where the risk of condensation is at its highest.

Membranes also act as temporary protection whilst the roof is being installed however it is recognised by British Standards that if an underlay has to be left without a roof covering for a period of time or when adverse rainfall and weather is expected, a tarpaulin or similar protective sheeting may be used to protect the underlay until such time that the roof covering can be completed.

What is a Vapour Control Layer?

A Vapour Control Layer is designed to be installed on the warm side of the insulation to limit the transfer of moisture to the building fabric and to aid air tightness in roofs and walls. In the Klobber range there are two vapour barriers; Wallint 50 and Sepa Solar, which has a reflective surface to increase a construction's thermal performance. To find out more about Klobber's Air and Vapour Control Layers visit klobber.co.uk



- ✓ An unsupported membrane should provide a drape between rafters or supports sufficient to ensure that any water will run away from the batten fixing penetrations and drain to the eaves gutter.
- ✓ Klober membranes should be laid with a maximum drape of 15mm.
- ✓ If the membrane is to be installed in a fully supported application counter battens should be introduced to provide a drainage channel beneath the tiling battens.
- ✓ If a dry ridge system is to be installed for ventilation, the membrane should be stopped short of the apex leaving a 30mm gap.
- ✓ Klober membranes should be installed with the printed side facing upwards.
- ✓ We recommend using an underlay support tray at eaves level to support the membrane and to provide a drip into the eaves guttering. The membrane should stop level with the top of the fascia board and may be taped to the support tray for extra protection.

BS 5534 'Code of Practice for slating and tiling' carries considerable implications for manufacturers as well as contractors, particularly in relation to membranes.

Following an increasing number of problems with lightweight membranes 'ballooning', a new wind speed map of the UK was introduced in 2015 (see page 8), requiring manufacturers to provide information on packaging to show the zonal limit for each product.

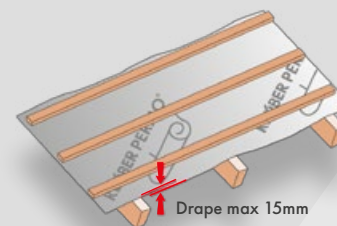
Membrane laps must be secured by a batten or by proprietary means such as a tape. If the latter, evidence will be needed from the manufacturer that this has been tested for wind uplift.

BRE tests among air open membranes confirms that Klober's Permo Air exceeds the minimum wind uplift resistance of 1600 Pa and can be used at a 345mm batten gauge in all zones (Permo Air with integral tape or laps sealed with Permo Tape would be required for zones 4-5)

Typical Installations

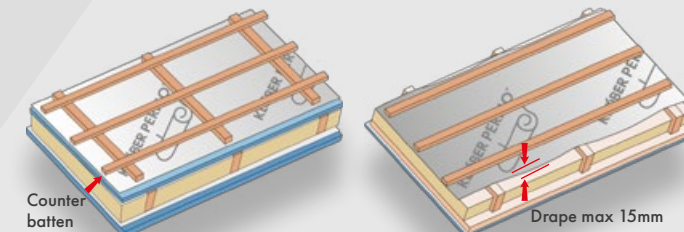
Cold Roof

A cold roof is where the insulation follows the line of the ceiling.



Warm Roof

A warm roof is where the insulation follows the line of the rafter.



UK Wind Zones Map For Membranes

The UK wind zone map forms part of BS 5534, the code of practice for installing slates and tiles to new-build pitched roofs.

All Klober membranes, where appropriate, state which wind zone they are suitable for under the section heading 'Area of application', assuming a 345mm batten gauge is used. Additional information regarding different batten gauges is also available.

Zone suitability applies only for membrane underlays in applications where a well-sealed ceiling is present and:

- Ridge height is not greater than 15m
- Roof pitch is between 12.5° and 70°
- Site altitude is not greater than 100m, and no significant site topography is present

Other applications might require underlays with greater wind uplift resistance and it is advisable to seek professional advice.



Choose the best membrane for you

From the most breathable roofing membrane, to one of the strongest, the **PERMO RANGE** provides a convenient, trusted solution for every roof.

	The Everyday Range		The Specialist Range			
						
Best For...	 Entry-level solution	 All-round performance	 Extra strength	 Most breathable	 Low pitched roofs	 Metal roofs
Product	ECOVENT Cost effective breathable membrane.	LIGHT High quality breathable membrane.	FORTE Breathable membrane with built-in grid.	AIR Greatly reduces the risk of condensation.	EXTREME Engineered for roofs as low as 12.5 degrees.	SEC METAL Waterproofing system for commercial roofs.
Weight (g)	110g	145g	145g	160g	240g	390g
Page	12	14	16	18	20	22



	Traditional Ventilation
Product	SEPA LIGHT Non-breathable alternative to 1F felt.
Weight (g)	120g
Page	24

PERMO

ECOVENT



110g

EVERYDAY RANGE



Permo Ecovent is Klober's entry-level membrane solution

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.03m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.200N/50mm b.135N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.135N b.160N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +80°C

Area of application

- Suitable for cold and warm roofs.
- Wind zones 1-2 with battened headlap.
- All wind zones with taped headlap.

Related products

- Underlay Support Tray KP973910
- Permo Tape KU0121-1
- Tacto Tape KU0111
- Over Fascia Vent KP965200/KP964300
- Roll Out Rafter Tray all sizes.

Product code	Width m	Length m	m ²	Pallet quantity
KU0039-2	1.1	50	55	35
KU0039-2-15	1.5		75	30
KU0039-2-11-15 with tape	1.5		75	30

Cost effective breathable membrane

- A strong three-layer membrane, which is breathable and lightweight.
- Available with or without self-adhesive tape, which creates a strong and durable water and air tight seal, to reduce energy loss and provide strong protection against winds.
- BBA approved low resistance membrane.

CE



PERMO

LIGHT



145g

High quality, breathable membrane

- High performing membrane suitable for most roofing projects.
- Durable three-layer breathable membrane.
- BBA approved low resistance membrane.



EVERYDAY RANGE



Permo Light is Klober's superior everyday membrane

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.03m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.275N/50mm b.230N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.180N b.180N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +80°C

Product code	Width m	Length m	m ²	Pallet quantity
KU0043-04-1	1.5	50	75	20
KU0043-04-05-1	1.1		55	

Area of application

- Suitable for cold and warm roofs.
- Wind zones 1-3 with battened headlap.
- All wind zones with taped headlap.

Related products

- Underlay Support Tray KP973910
- Permo Tape KU0121-1
- Tacto Tape KU0111
- Over Fascia Vent KP965200/KP964300
- Roll Out Rafter Tray all sizes.



PERMO

FORTE



145g

Breathable membrane with built-in grid

- Strong four-layer membrane, which includes a reinforced grid that offers additional strength and safety benefits.
- Available with or without self-adhesive tape, which creates a strong and durable water and air tight seal, to reduce energy loss and provide strong protection against winds.
- BBA approved low resistance membrane.



SPECIALIST RANGE



Permo Forte is Klober's strongest membrane

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.03m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.430N/50mm b.370N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.320N b.340N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +80°C

Area of application

- Suitable for cold and warm roofs.
- Wind zones 1-4 with battened headlap.
- All wind zones with taped headlap.

Related products

- Underlay Support Tray KP973910
- Permo Tape KU0121-1
- Tacto Tape KU0111
- Over Fascia Vent KP965200/KP964300
- Roll Out Rafter Tray all sizes.

Product code	Width m	Length m	m ²	Pallet quantity
KU0044-07-1	1.5	50	75	20
KU0044-07-05-1	1.1		55	
KU0044-07-11-1 With tape	1.5		75	



PERMO

AIR



160g

SPECIALIST RANGE



Permo Air is Klober's best-selling membrane

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.009m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.280N/50mm b.200N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.140N b.130N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +80°C

Area of application

- Suitable for cold and warm roofs.
- Wind zones 1-3 with battened headlap.
- All wind zones with taped headlap.

Related products

- Underlay Support Tray KP973910
- Permo Tape KU0121-1
- Tacto Tape KU0111

Product code	Width m	Length m	m ²	Pallet quantity
KU0045-1	1	50	50	20
KU0045-15	1.5		75	
KU0045-11-1 with tape	1		50	
KU0045-11-15 with tape	1.5		75	

Greatly reduces the risk of condensation forming

- Klober's most breathable air-open, vapour permeable roof membrane, available with or without adhesive tape.
- Assists during the drying out period of a building, such as new builds.
- BBA & NHBC approved as needing no additional high level ventilation, making it a time and cost effective solution.

CE



PERMO

EXTREME



240g

Engineered for roofs as low as 12.5 degrees

- Offers design flexibility by enabling you to use tiles below their recommended minimum pitch, such as extensions or lean-to's.
- The fleece layer greatly reduces the risk of condensation forming.
- Independently tested to 1 in 50 year storm conditions, whilst the self-adhesive tape creates added strength and durability for a water and air tight seal.



SPECIALIST RANGE



Permo Extreme is the UK's leading low pitched roof membrane

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.08m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.310N/50mm b.360N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.215N b.200N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +100°C

Area of application

- Minimum roof pitch of 12.5° for interlocking tiles, 15° for slates and 22.5° for plain tiles.
- Wind zones 1-5.
- High resistance membrane so requires ventilation.

Related products

- Butylon Tape KU0104
- Pasto Sealant KU0128
- Underlay Support Tray KP973910
- Over Fascia Vent KP964300 / KP965200
- Roll Out Rafter Tray, all sizes.

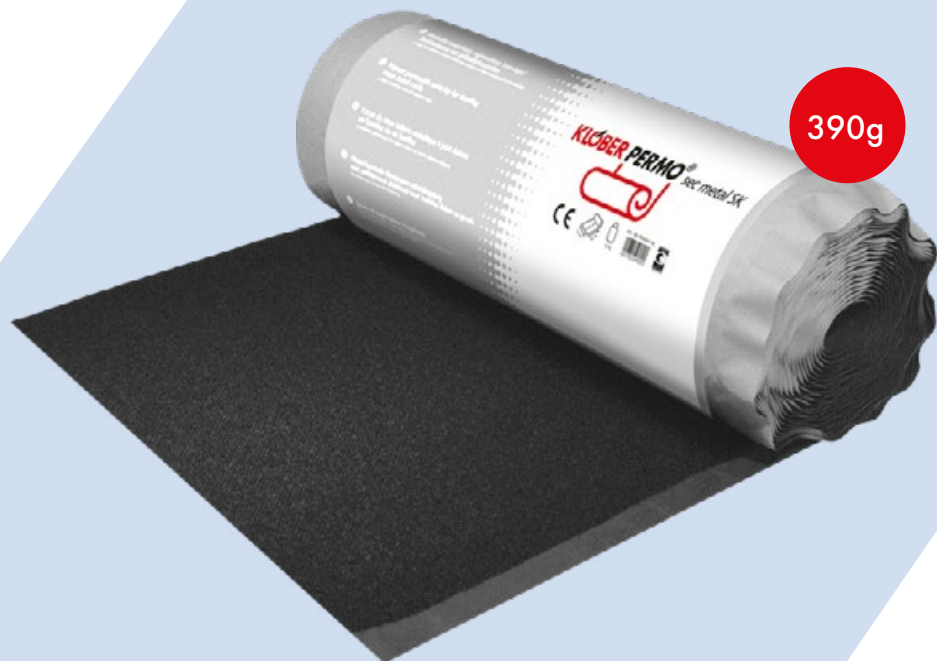
Product code	Width m	Length m	m ²	Pallet quantity
KU0171-11	1.5	50	75	12
KU0171-11-25		25	37.5	30

WATCH OUR **PERMO EXTREME INSTALLATION VIDEO** ONLINE AT KLOBER.CO.UK



PERMO

SEC METAL



390g

Waterproofing system for metal commercial roofs

- Breathable and waterproof, acting as a secondary barrier to moisture penetration.
- Prevents condensation that occurs on the underside of the metal roof covering from re-entering the roof structure.
- Acoustic value of 8db to help reduce the transmission of external sounds, such as heavy rain.



SPECIALIST RANGE



Permo Sec is Klobert's membrane solution for metal roofs

Technical data

Water vapour transmission, EN 12572 (Sd value)	0.03m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.275N/50mm b.230N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.170N b.185N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-30°C to +80°C

Area of application

- Suitable for metal roofs with a minimum pitch of 3°
- Can be laid over rigid insulation or timber boarding.

Related products

- Permo Tape KU0121-1
- Tacto Tape KU0111

Product code	Width m	Length m	m ²	Pallet quantity
KU0020-04	1.5	25	37.5	4



SEPA LIGHT



Non-breathable alternative to 1F felt.

- The high-resistance membrane is a strong lightweight alternative for ventilated pitched roofs.
- Absorbent inner layer as recommended in BS 5250.
- High tensile and nail tear strength.



TRADITIONAL VENTILATION



SEPA Light is Klobber's non-breathable membrane for traditional ventilation

Technical data

Water vapour transmission, EN 12572 (Sd value)	>25m
Resistance to water penetration, EN 1928	W1
Tensile strength longitudinal/transverse EN 12311-1	a.240N/50mm b.220N/50mm
Resistance to tearing (nail shank) longitudinal, EN 12310-1	a.120N b.120N
Reaction to fire, EN 13501-1, EN 11925-2	E
Resistance to temperature	-40°C to +80°C

Product code	Width m	Length m	m ²	Pallet quantity
KU979145-1	1	45	45	42

Area of application

- Suitable for cold and warm roofs.
- Wind zones 1-2 with battened headlap.
- All wind zones with taped headlap.

Related products

- Underlay Support Tray KP973910
- Permo Tape KU0121-1
- Tacto tape KU0111
- Over Fascia Vent KP965200/KP964300
- Roll Out Rafter tray all sizes.



Underlay Sealing Collar

Creates an airtight seal around cables, which pass through the roof.



Key features

- Creates an airtight seal around cables passing through the roof.
- Easy to install with self adhesive collar.
- Ideal for solar cables.

Area of application

- For pipe diameters 42-55mm and 50-70mm.

Product code	Description	Width mm	Length mm	Height mm	Box quantity
KE8090	Fits collar sizes 42-55mm	228	228	60	2
KE8091	Fits collar sizes 50-70mm				

Permo Tape

Permo Tape is a multifunctional tape to create airtight seals between laps in membranes or vapour control barriers.



Key features

- Single sided tape with reinforced mesh providing extra strength.
- Its primary use is for joining, repairing and creating airtight seals.
- An essential product for preventing loss of energy from the roof.

Area of application

Suitable for all pitched roofs, including ceilings and walls of rooms-in-the roof, and on the ceilings below.

Related products

- Klover Membranes range.

Product code	Width mm	Length m	Box quantity
KU0121-1	60	25	10

Butylon Tape

Butylon Tape is watertight, double sided and ideal for making airtight seals.



Key features

- Sealing nail penetrations as well as membranes, air barriers or vapour control layers to both smooth and rough surfaces.
- Ideal for creating airtight seals.
- Strong and watertight.

Area of application

- For internal and external use around roof penetrations such as TV antenna, cables and pipes.
- A necessity when using Permo Extreme.

Related products

- Klover Membranes range.

Product code	Width mm	Length m	Box quantity
KU0103	20	25	4
KU0104	50	25	2

Tacto Tape



Tacto Tape is a double sided, fibre reinforced tape, ensuring airtight seals.

Key features

- It provides a strong adhesion for both membranes and vapour control layers.
- Creates air and wind-tight seals helping to reduce energy loss.
- Highly resistant to changes in temperature and weather.

Area of application

Seals laps between membranes or vapour control layers and air barriers.

Related products

- Klover Membranes range.

Product code	Width mm	Length m	Box quantity
KU0111	20	50	10

Pasto Sealant



Pasto is a gun applied sealant for multiple surfaces.

Key features

- Ideal for creating air and wind-tight seals between membranes, vapour control layers/air barriers and rough surfaces.
- Acts as a sealant on absorbent materials including brick, sandstone, concrete and gypsum fibreboard.

Area of application

Sealing holes in plasterboard ceilings where services pass through vapour control layers and air barriers.

Related products

- Klover Membranes range.

Product code	Size ml	Box quantity
KU0128	310	12

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Sales Team: 01332 813 050
Technical Team: 03306 780 088



info@klober.co.uk



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Klober, Unit 6F, East Midlands Distribution Centre, Short Lane,
Castle Donington, Derbyshire, DE74 2HA. UK