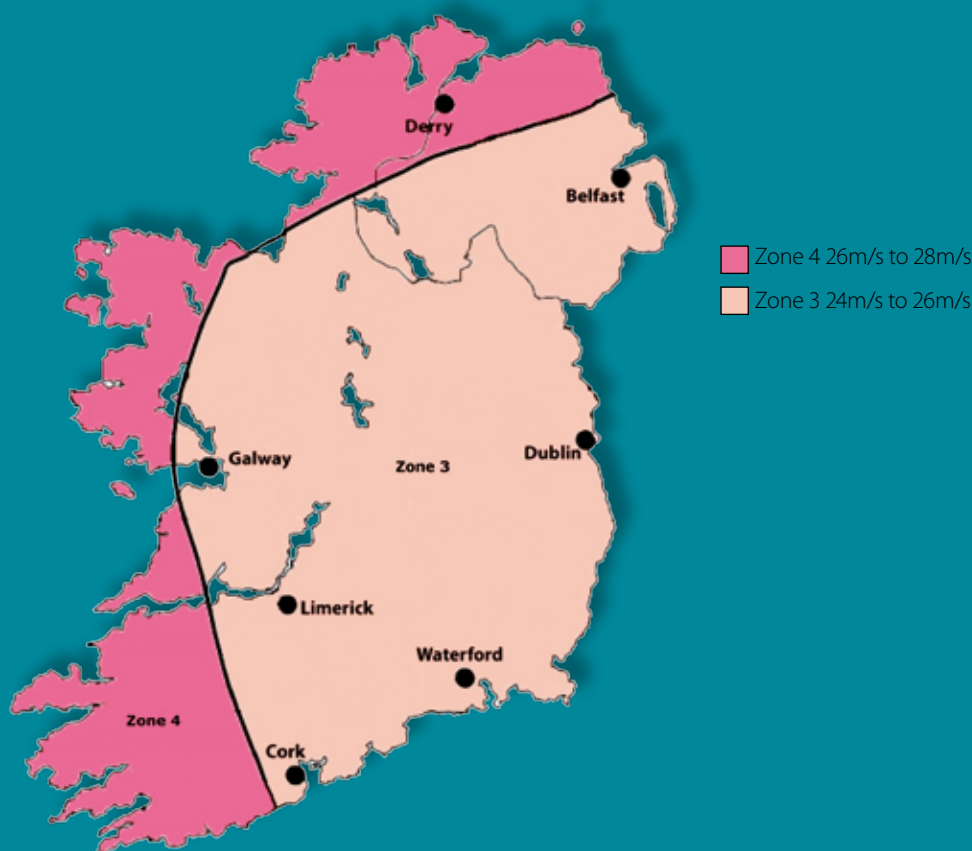




**ROOFING
UNDERLAYS
AND MEMBRANES**

MAP OF IRELAND WIND SPEED ZONES



Summary of test results for wind uplift resistance of FAKRO underlays to BS5534 Annex A

Underlay name	345mm batten guage Battened lap	250mm batten guage Battened lap	345mm batten guage Taped lap
Eurotop N15	Zone 1 to 3	Zone 1 to 5	Zone 1 to 5
Eurotop N35	Zone 1 to 4	Zone 1 to 5	Zone 1 to 5*
Eurotop S4	Zone 1 to 3	Zone 1 to	Zone 1 to 5*
Eurotop S65	Zone 1 to 5	Zone 1 to 5*	Zone 1 to 5*

* Result inferred from test results on other underlays

The FAKRO Company offers a wide range of membranes and underlays designed to function as primary roofing and protection of insulation against moisture and dust.

In order to retain premium quality of offered products, the FAKRO Company is continuously verifying the key parameters of underlays and membranes such as: **tear resistance, nail shank tear resistance, watertightness, roll length and width, basis weight.**

This guarantees that the product distributed under FAKRO brand always retains its declared technical parameters.

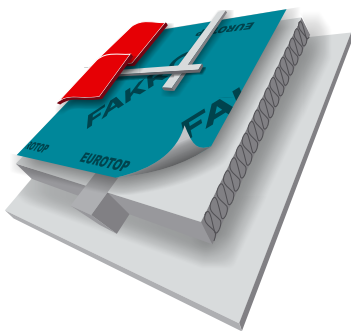
Quality control system



Testing resistance to UV radiation



Testing resistance to tearing



working with
nature

ROOFING MEMBRANES

A roofing membrane acts as an initial roofing layer. It improves tightness of the roof, protects insulation against moisture and constitutes an important element of insulation systems used in pitched roofs. Application of the EUROTOP roofing membrane in the roof structure brings many advantages.

ENERGY EFFICIENCY

Roofing membranes do not require any air gaps between themselves and insulation. Insulation shifted towards membrane allows for thicker insulating layer of the roof along the whole rafter height which improves roof lagging and ensures energy savings. High vapour-permeability and watertightness of the EUROTOP membranes guarantee that the insulating material remains dry and only as such it can ensure high insulating properties. Windproofness and no ventilation gap between insulation and membrane prevents extraction of heat from the insulating material and penetration of moisture contained in the air.

EASE OF INSTALLATION

No need for any ventilation gap above insulation considerably facilitates installation work. Easier membrane installation translates into time savings, lower costs and reduced risk of workmanship error.

INCREASED ROOF LONGEVITY

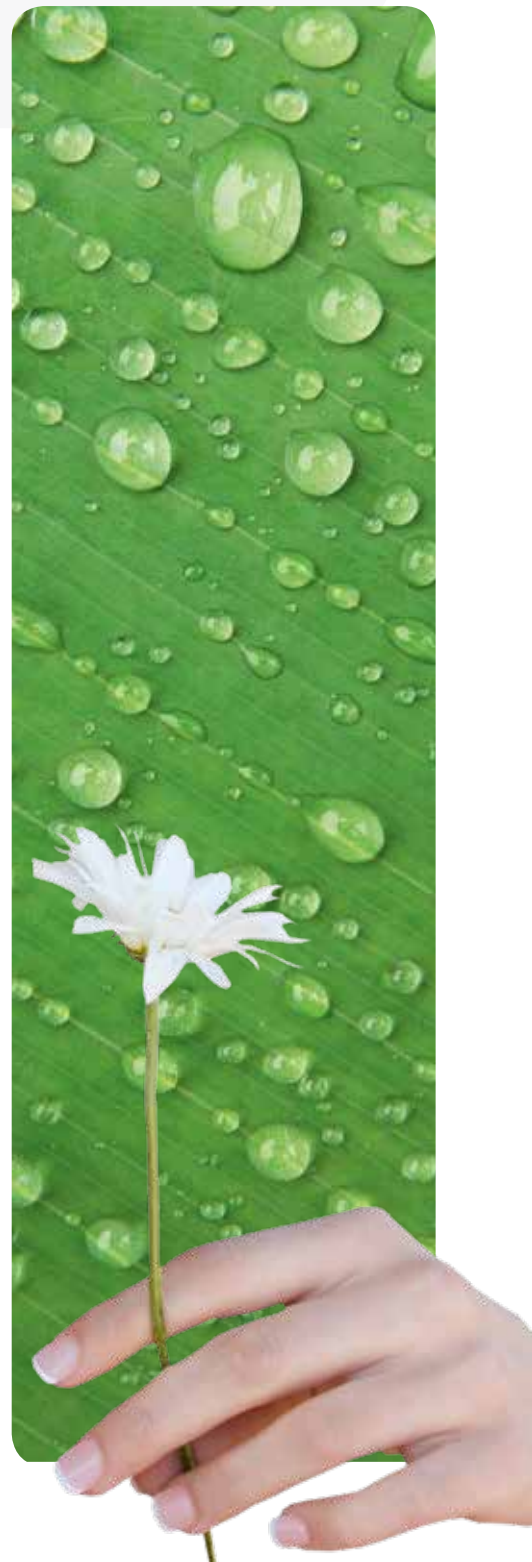
Thanks to high vapour permeability of membranes, excessive moisture is evaporated from insulation.

HEALTHY MICROCLIMATE IN THE LOFT

Membranes form a secondary line of protection against rain, snow, moisture and dust which penetrate through the primary roofing. This gives a guarantee that potential leaks, water from melting snow or condensation are conveyed outside the roof and do not permeate the insulation layer.

WIDE APPLICATION RANGE

Roofing membranes offered by FAKRO are highly resistant to temperature, thus they can be installed in a number of roof structures, even those covered with metal sheeting.



ON THE ROOF AND WALLS



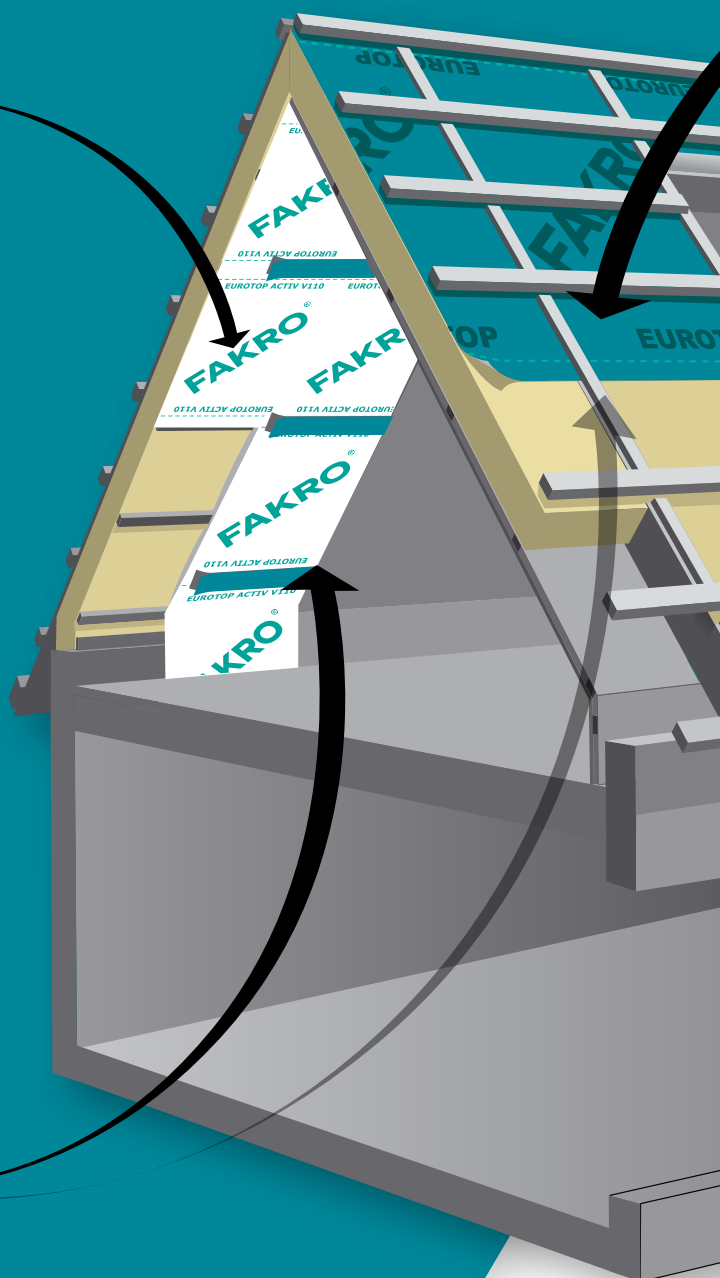
NON-PERMEABLE UNDERLAY

The non-permeable roofing underlay is a material shielding insulation and roof structure from water vapour penetration from habitable spaces. It is laid between insulation and finishing elements – most often gypsum cardboards. It constitutes a barrier for water vapour forming inside the building, protecting, at the same time, wooden elements of the roof structure and insulation against moisture. The non-permeable underlay fulfils the function of an additional windproofing – prevents heat losses as a result of free air circulation and roof draughts.



BANDS FOR ROOFING UNDERLAYS AND MEMBRANES

The correct installation of non-permeable roofing underlays requires application of proper joining bands. It ensures correct functioning of the initial roofing layer and non-permeable layer. Any sealing work and damage repair in membranes or underlays should be performed with the use of purpose-built bands.





HIGH VAPOUR PERMEABLE MEMBRANES

The **EUROTOP** membrane is a primary roofing layer which improves roofing tightness. It solves the problems related to condensation water accumulating in insulation and roof structure. The EUROTOP membranes can be used as initial roofing of sloping roofs – in case of both habitable and non-habitable loft spaces, and in external walls as windproofing.

Pictogram description

Application
- internal



Application
- external
(roof, walls)



Application
- external and internal
(walls, roof)



Vapour permeability

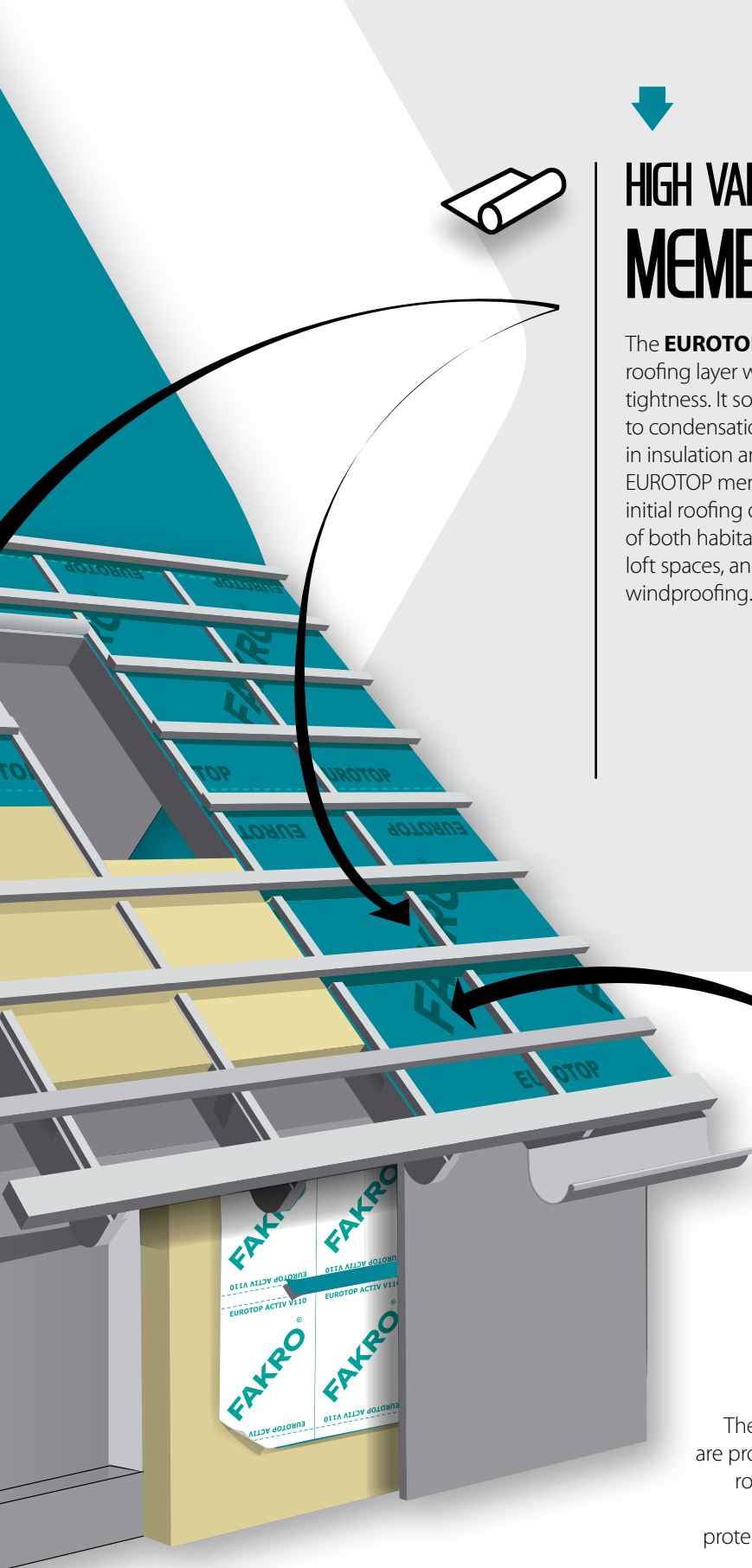


Watertightness



LOW VAPOUR PERMEABILITY MEMBRANES

The low vapour permeability membranes are products used as initial roofing in sloping roofs. Their basic task as an initial roofing layer is to seal the primary roofing and protect insulation fitted in the roof structure from moisture. Application of the low vapour permeable membrane as an initial roofing in case of buildings with habitable loft spaces necessitates the use of lower ventilation gaps between the membrane and insulating material in the roof structure.



N15
N35
S65
S4

MEMBRANES WITH HIGH VAPOUR PERMABILITY

The **EUROTOP** membranes are characterised by unique combination of such parameters as watertightness and water vapour diffusivity. High watertightness protects the roof structure from:

- ▶ seepage and water condensing under roofing
- ▶ wind driven precipitation

High water vapour permeability offered by the EUROTOP membrane allows moving insulation towards the membrane surface without the need for any ventilation gaps in the roof or wall structures. This makes it possible to apply thicker layer of insulation which translates into energy savings. The EUROTOP membrane is laid directly onto rafters, insulation or sarking with turquoise printed side facing outwards



technical parameters	EUROTOP N15	EUROTOP N35	EUROTOP S65	EUROTOP S4
basis weight [g/m²]	115	135	165	155
number of layers	3	3	3	4
vapour permeability [g/m²/24h]	2800 g/m²/24h 38°C/85%RH Lyssy	2900 g/m²/24h 38°C/85%RH Lyssy	2300 g/m²/24h 38°C/85%RH Lyssy	3100 g/m²/24h 38°C/85%RH Lyssy
vapour permeability coefficient Sd [m]	0,015	0,015	0,015	0,015
water penetration resistance class before and after artificial ageing	CLASS W1	CLASS W1	CLASS W1	CLASS W1
resistance to tearing lengthwise [N/5cm] crosswise [N/5cm]	230 150	280 190	350 240	360 280
application temperature range [°C]	from -40 to +120	from -40 to +120	from -40 to +120	from -40 to +120
UV radiation resistance [month]	3	3	4	3
material	polypropylene			
flammability class	E-D2	E	E	E-D2
packing [roll/pallet]	36		25	
roll dimensions [m]	1,5 x 50			
possibility of use on full boarding	yes			
	CE	CE	CE	CE



➡ ACTIVE NON-PERMEABLE ROOFING UNDERLAYS

The active non-permeable underlay used in conjunction with EUROTOP high vapour permeability membranes makes it possible to retain proper climatic conditions within the habitable loft spaces. In offer there is non-permeable underlays: **Eurotop Activ V110**.

Eurotop Activ V110 is an active non-permeable underlay allowing vapour to flow inside and outside the room in controlled volumes, resulting in better drying of the roof.

Eurotop Activ V110 can be also used as a wind insulation in ventilated walls when installed on the outer side of the wall.

EUROTOP
ACTIV
V 110



V 110

technical parameters	EUROTOP ACTIV V 110
basis weight [g/m ²]	110
resistance to tearing lengthwise N/5cm crosswise N/5cm	200 140
resistance to weather conditions (months)	3
application temperature range [°C]	from -40°C to +120°C
vapour permeability coefficient Sd [m]	2
flammability class	F
packing [roll/pallet]	36
roll dimensions [m]	1,5 x 50
	CE

EUROTOP ACTIV
V 110



➔ FOUNDATION INSULATION AND PROTECTION SYSTEM

EUROFLEX systems are used for anti-moisture insulation of foundations, terraces, ceilings, roofs and floors. With special embossed areas, they form a gap to allow additional ventilation of insulated surfaces.

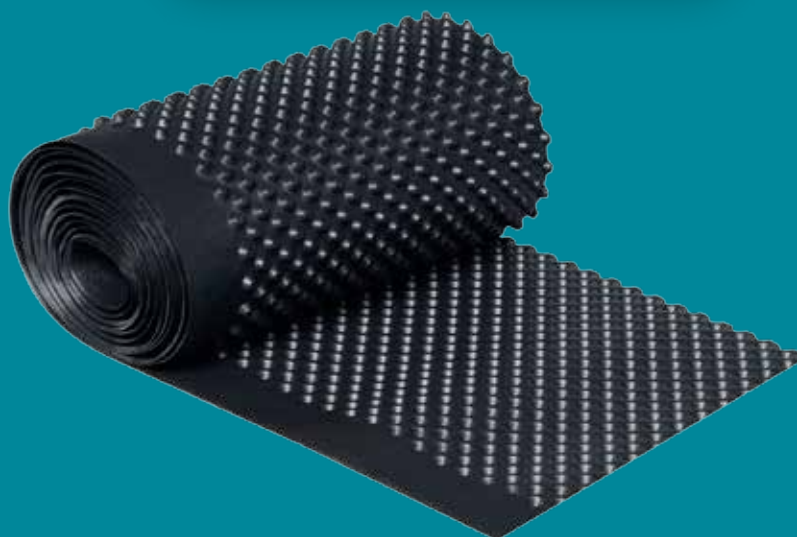
The system consists of:

- ➔ EUROFLEX 400 foundation dimpled membrane
- ➔ EUROSLAT 70 x 2000mm finishing slats
- ➔ EUROFIX 3.5 x 40mm mounting connectors

EUROSLAT



EUROFIX

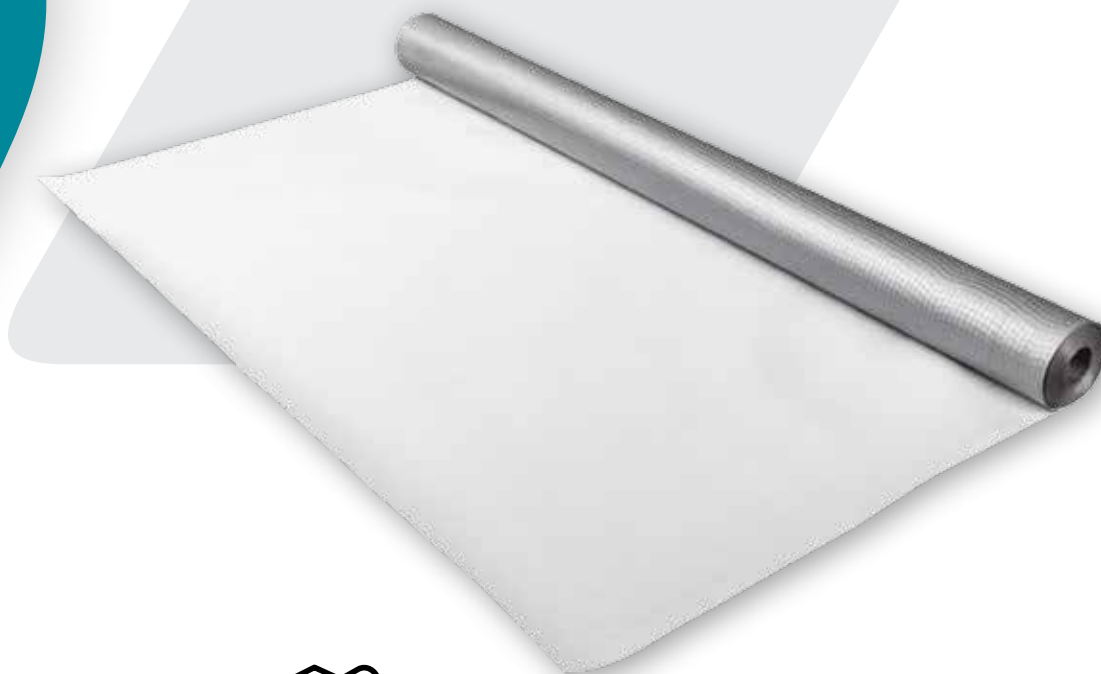


technical parameters	EUROFLEX 400
material	HDPE
mass (thickness)	400 g/m ²
tensile strength	MD 250 N/5cm CD 200 N/5cm
fire resistance	CLASS F
roll width/length	1.0, 1.5, 2.0x20m
	CE

The **Eurotop G&M** membrane is used to create anti-radon insulation and waterproofing (foundations, screeds, floors, etc.) both inside and outside the building. The **Eurotop G&M** protects against penetration of methane, carbon dioxide and radon that are harmful to health and forms completely watertight barrier.

Advantages:

- Protection against penetration of radon, methane and carbon dioxide that are detrimental to health of the residents
- Anti-moisture and watertight barrier
- Resistant to most chemical substances (oils, solvents, gasoline and other)
- High mechanical resistance thanks to the use of reinforcing mesh
- Easy and quick installation



technical parameters	Eurotop 350 G&M
weight [g/m ²]	300±10%
Tensile strength: lengthwise [N/50 mm] crosswise [N/50 mm]	560 560
Nail tear resistance: lengthwise [N] crosswise [N]	570 500
Radon transmittance [m/s]*	$1,4 \cdot 10^{(-9)}$
Radon permeability [m ² /s]*	$3,5 \cdot 10^{(-13)}$
Watertightness [kPa]	2
Roll dimensions [m]	2 x 25; 3 x 25

* The measurements were carried out using the measuring Rn-BOX, (wg. Methods used in SP Swedish National Testing and Research Institute, Building Diagnostics).

EUROBAND W

EUROBAND S

BUTYLBAND

EUROBAND

EUROBAND WP

➔ BANDS FOR ROOFING MEMBRANES AND UNDERLAYS

The bands offered by FAKRO are used for permanent joining, sealing and mending roofing membranes and non-permeable underlays. They are also recommended for attaching membranes and underlays to structural elements, e.g. wood, wall or metal.



EUROBAND W – one-sided adhesive band based on polypropylene cloth, 50mm wide.

Intended use:

- ➔ joining together successive layers of EUROTOP membranes,
- ➔ repairing EUROTOP membranes
- ➔ attaching EUROTOP membranes to wood, plastic or metals

EUROBAND S – one-sided adhesive tape on a polyethylene base reinforced by means of PET mesh with very strong adhesive.

It is intended to glue a vapour barrier layer to durable structural elements such as:

- ➔ rafters
- ➔ brick
- ➔ plaster
- ➔ concrete

BUTYLBAND – butyl band with adhesive on both sides, 10mm wide.

Intended use:

- ➔ attaching EUROTOP membranes and Termofol 90 underlay to walls, around chimneys and flanges over gutters,
- ➔ joining overlaps of EUROTOP membranes, low vapour permeability or non-permeable underlays,
- ➔ joining materials where permanent connection flexibility and resistance to moisture and ageing is required.

EUROBAND – one-sided butyl band, coated with aluminium film, 50mm thick

Intended use:

- ➔ mending roofing membranes and underlays,
- ➔ sealing skylights and windows,
- ➔ sealing around chimneys.

EUROBAND WP – 100mm wide windproof tape on the basis of a special intelligent membrane featuring variable value of vapour permeability coefficient "Sd", with two adhesive strips on opposite sides.

Application:

- ➔ "warm" system installation of vertical windows
- ➔ reduction of drafts and energy loss
- ➔ ensuring watertightness in connection of the window with the building wall
- ➔ universal, can be used on the internal and external side of the building

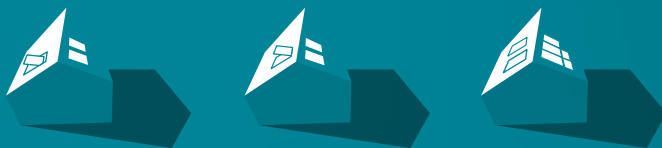
	EUROT N15	EUROT N35	EUROT S65	EUROT S4	EUROT ACTIV
EUROBAND S	-	-	-	-	+
EUROBAND W	+	+	+	+	+
EURBAND	+	+	+	+	+
BUTBAND	+	+	+	+	+



technical parameters	EUROBAND W	EUROBAND S
band type	one-sided adhesive	one-sided adhesive
carrier type	polypropylene fibres	polypropylene fibres, PET
adhesive	acrylic	acrylic
temperature resistance	from -40 to +120 °C	from -30 to +100 °C
installation temperature	from +18 to +35 °C	from +18 to +35 °C
colour	turquoise	green
roll dimensions	60 mm x 25 m	60 mm x 25 m
packing [roll/cardboard]	24 rolls	20 rolls



technical parameters	BUTYLBAND	EUROBAND	EUROBAND WP
band type	two-sided adhesive	one-sided adhesive	watertight with two adhesive strips
carrier type	butyl	butyl coated with aluminium film	polypropylene fibre
adhesive	butyl	butyl	modified acrylic
temperature resistance	from -30 to +80 °C	from -30 to +80 °C	from -30 to +80 °C
application temperature	from +5 to +40 °C	from +5 to +40 °C	from +5 to +40 °C
colour	grey	silver, grey	white with Fakro logo
roll dimensions	10 mm x 20 m	50 mm x 10 m	100 mm x 25 m
packing [roll/cardboard]	22 rolls	16 rolls	20 rolls



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