

Roofing membranes EUROTOP

TYPE: L2, L3, N15, N35, L2, L3, S4, S65, T150, T180

1. CHARACTERISTICS

Roofing membranes laid on battens and counter-battens (fig.1) act as primary underlay improving tightness of basic roofing and protecting the structure of sloping roofs and their insulation.

2. ADVANTAGES

The application of EUROTOP roofing membranes to the roof structure brings many advantages. The key features of this material, deciding also about its attractiveness are as follows:

- **FOR HOMEOWNER:**
 - high, uniform permeability,
 - watertightness, protection of the roof,
 - EUROTOP T150 and T180 membrane – improvement of watertightness and primary roofing layer, especially recommended for the roofs with the angle $\leq 20^\circ$
 - improvement of roofing windproofness,
 - UV resistance.

- **FOR CONTRACTOR:**
 - high flexibility and lightweight facilitating laying process,
 - high mechanical strength.

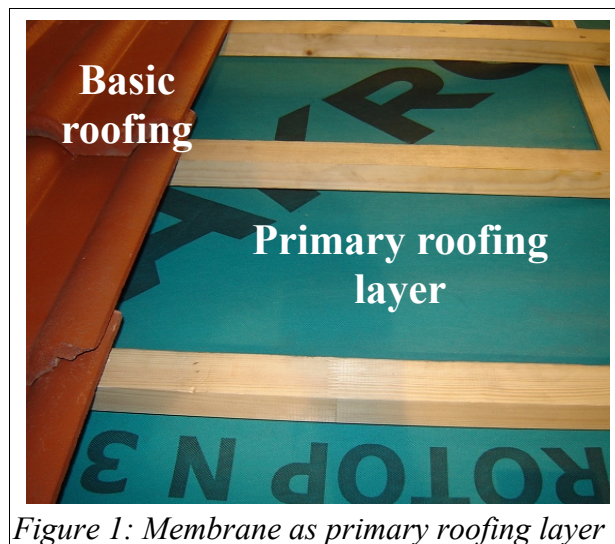


Figure 1: Membrane as primary roofing layer



Figure 2: Use of EUROTOP N35 roofing membrane

3. EUROTOP MEMBRANE FUNCTIONS

CONDENSATION CONTROL

Roofing membranes solve the problem of water vapour condensation accumulating in insulation and roof structure (fig.3).

ADDITIONAL WATER-DRAINING LAYER

Protects the roof structure and insulation from:

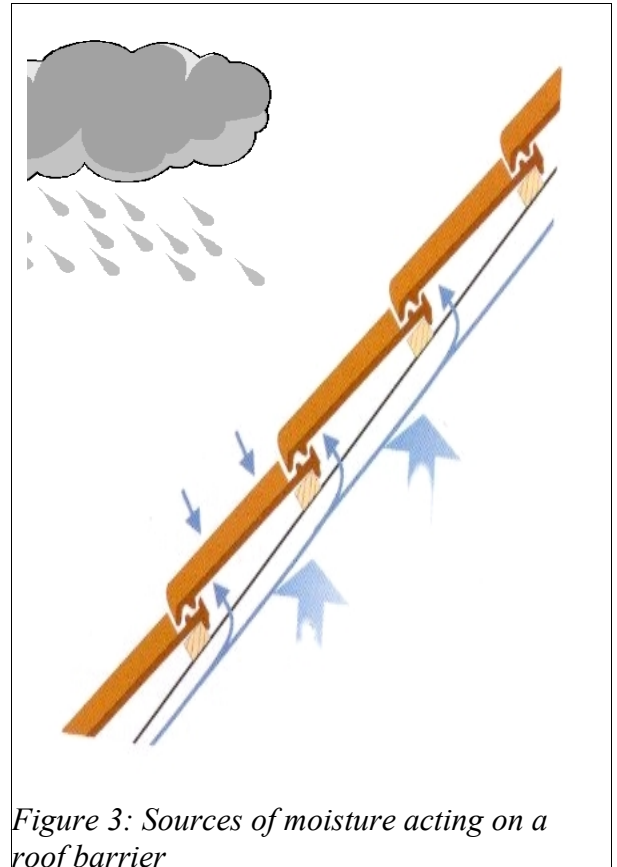
- wind-blown rain getting under basic roofing,
- leaking or water condensing under roofing.

WATERTIGHTNESS

In case of any potential damage of roofing and during roofing work, membranes act as waterproofing.

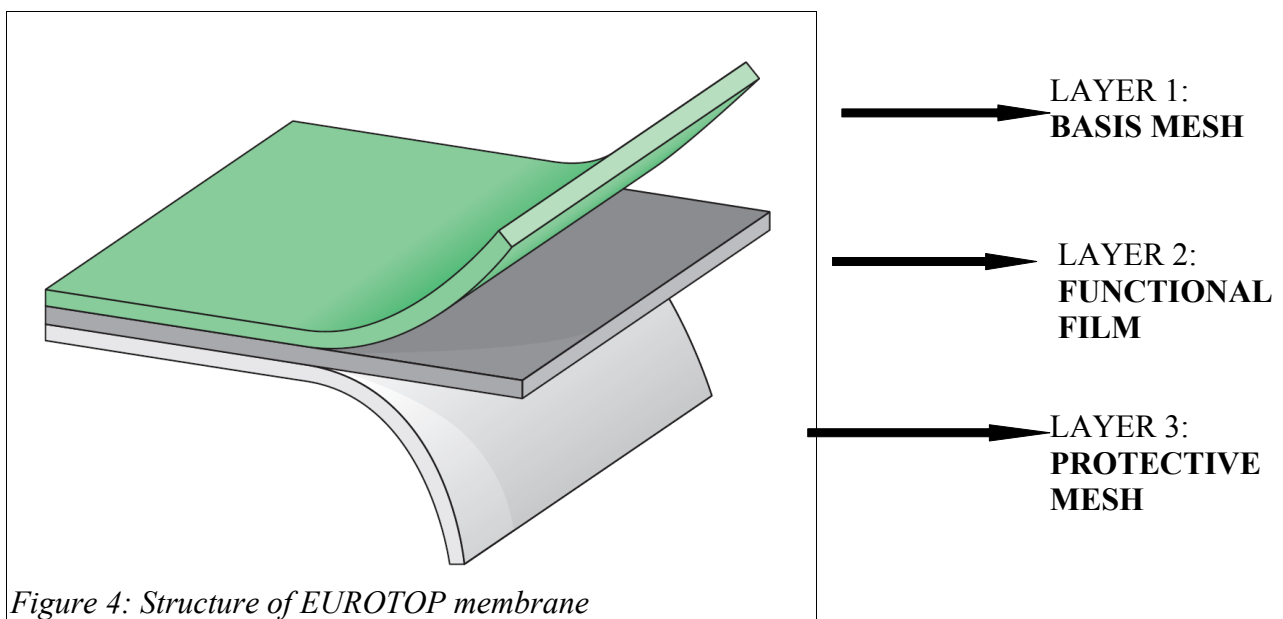
WINDPROOFNESS

Prevents wind penetration through the roof structure, hence limiting heat losses.



4. STRUCTURE

The EUROTOP membrane consist of three layers joined together by means of an electrostatic field (fig.4).



LAYER 1:

turquoise-coloured polypropylene base mesh, strength base of the material responsible for mechanical parameters, difficult water penetration;

LAYER 2:

polypropylene functional film, responsible for: permeability and water tightness;

LAYER 3:

white polypropylene protective mesh protecting the membrane from mechanical damage, adding to material general strength as a whole;

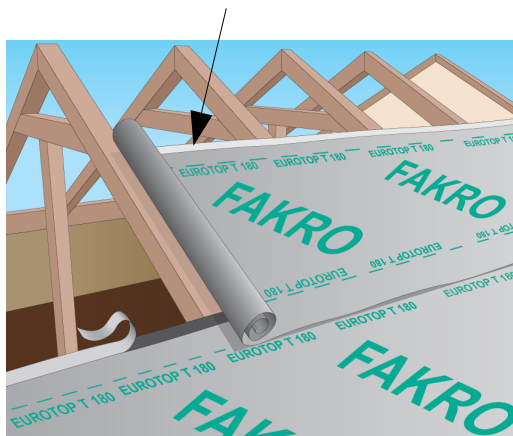
The only exception is EUROTOP S4 membrane which consists of 4 layers. The fourth layer is made up of netting which adds to membrane overall strength. It is situated between the functional film and protective mesh.

4.1. EUROTOP T150, T180 membrane

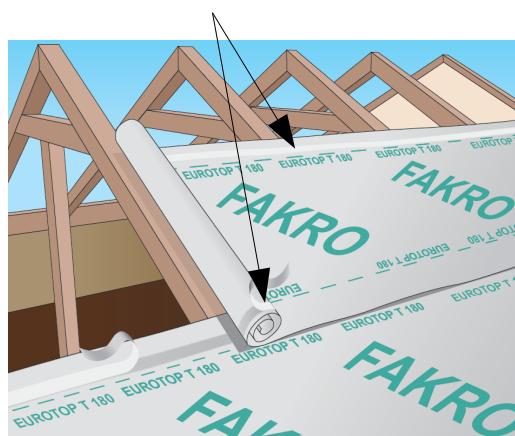
Name	T 150 1-band	T 180 1-band	T 150 2-bands	T 150 1-band
Code	62048	62049	62054	62055
Membrane colour	grey	grey	grey	grey
Overprint colour	green	green	green	green

Characteristic features of EURTOP T150 AND T180 membranes:

1 INTEGRATED ADHESIVE BAND



2 INTEGRATED ADHESIVE BANDS



5. TECHNICAL PARAMETERS

- **BASIS WEIGHT** (weight m²)

The weight of a roofing membrane has an influence on its durability. The higher the weight the thicker and more durable it is.

- **PERMEABILITY**

It is the amount of water vapour which can pass through m² of membrane during 24 hours [g/m²/24h]. This parameter may differ greatly depending on the conditions in which the tests are performed. Therefore, apart from numerical value denoting permeability obtained in the course of tests at Lyssy laboratories, there are also provided test conditions (temperature, humidity).

- **Sd COEFFICIENT**

It compares membrane's ability to pass through water vapour with permeability (diffusivity) of air with a specific thickness. If Sd of a given membrane is 0.02m it means that the membrane offers the same resistance to water vapour as 0.02m thick layer of air that is 2cm. The lower the value of Sd coefficient the higher the permeability.

- **HEAD OF WATER / PERCOLATION RESISTANCE**

Water head resistance is expressed in cm or mm. It defines water-resistance of the material when loaded with water head of the indicated height. The standard foresees determining water resistance by means of water resistance classes W1, W2, W3 – W1 being the highest class.

- **STRENGTH**

This measurement is described by means of force [N], which has to be applied during test in order to tear a 5cm wide strip of membrane. The stronger the membrane the easier it is to install it on the roof. Hence, this is the parameter to which roofers pay extra attention.

- **MAXIMUM TIME OF SUN EXPOSURE**

Roofing membrane manufactures strengthen their products in production process with stabilizers offering protection against UV radiation. The additions providing such membrane resistance to UV radiations are added so that it is protected against the sun reaching through holes and gaps in basic roofing. Leaving the membranes uncovered on the roof for periods longer than recommended by a manufacture may and will lead to its damage.

- **FIRE RATING**

All EUROTOP membranes come in E flammability class. Which means that they are flammable.

The table below contains a list of parameters of membranes from EUROTOP generic group:

Technical parameters	EUROTOP L2	EUROTOP L3	EUROTOP N15	EUROTOP N35	EUROTOP S4	EUROTOP S65
Weight [g/m ²]	90	95	115	135	155	165
Number of layers	3	3	3	3	4	3
Permeability	3100 g/m ² /24h 38°C/85% RH Lyssy	1500 g/m ² /24h 23°C/85% RH Lyssy	2800 g/m ² /24h 38°C/85% RH Lyssy	2900 g/m ² /24h 38°C/85%RH Lyssy	3100 g/m ² /24h 38°C/85%RH Lyssy	2300 g/m ² /24h 38°C/85%RH Lyssy
Sd coefficient [m]	0.008	0.020	0.004	0.007	0.004	0.02
Head of water [m]	Min 1.5	Min 1.5	Min 1.5	Approx., 5.5	Min 2.0	Min 2.5
Porcolation resistance before and after artificial aging:	CLASS W1	CLASS W1	CLASS W1	CLASS W1	CLASS W1	CLASS W1

Tear resistance before artificial aging						
lengthwise [N/5cm]	190	220	230	250	360	330
crosswise [N/5cm]	110	145	135	170	280	190
Application temperature range[°C]	-40 to +120	-40 to +95	-40 to +120	-40 to +120	-40 to +120	-40 to +120
Maximum time of sun exposure [months]	3	4	3	3	3	4
Material	polypropylene	polypropylene	polipropylen	polipropylen	polipropylen	polipropylen
Fire rating	E	E	E	E	E	E
Application	-		Can be applied on boarded roofs			

Table 1: List of EUROTOP membranes parameters

Technical parameters	EUROTOP T150	EUROTOP T180
Weight [g/m ²]	150	180
Number of layers	3	3
Permeability	3200 g/m ² /24h 38°C/85% RH Lyssy	2900 g/m ² /24h 23°C/85% RH Lyssy
Sd coefficient [m]	0,019	0,02
Head of water [m]	min 1,5	min 1,5
Porcolation resistance before and after artificial aging:	KLASA W1	KLASA W1
Tear resistance before artificial aging		
lengthwise [N/5cm]	340	420
Crosswise [N/5cm]	210	250
Application temperature range[°C]	-40 do +80	-40 do +80
Maximum time of sun exposure [months]	3	3
Material	polipropylen	polipropylen
Fire rating	E	E

Table 2: List of EUROTOP T150, T180 membranes parameters

6. POSSIBLE APPLICATIONS

- ◆ EUROTOP membranes are intended for use as initial underlay of pitched roofs $\geq 20^\circ$ under every type of roofing laid on battens with air circulation along counter-battens (fig.5);

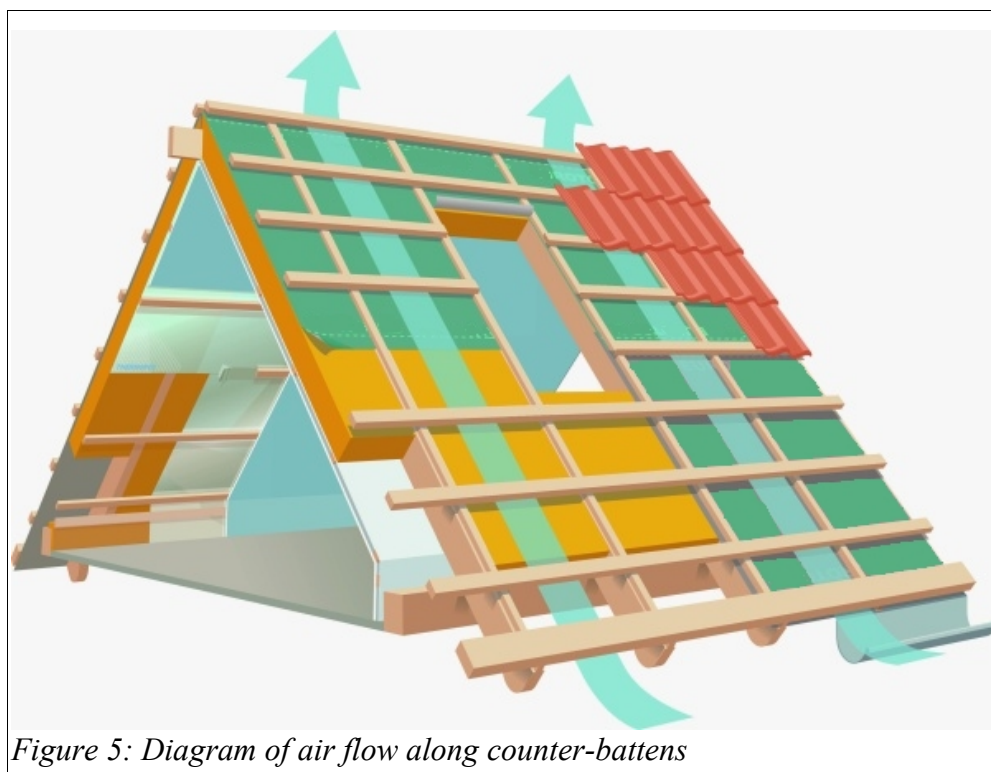


Figure 5: Diagram of air flow along counter-battens

- ◆ EUROTOP can protect roof structures with both habitable and non-habitable loft spaces;
- ◆ In the roofs with lower pitches $12^\circ - 19^\circ$, EUROTOP membranes can be laid only when fulfilling special conditions which have to be taken into consideration in the roof design.

These conditions are covered by separate instructions to be found on the intranet at:
<http://intranet.fakro.pl/pl/products/membranes/air-permeable/eurotop/instructions/fitting-instructions/instrukcja-ukladania-folii-eurotop-n35-i-s4-niskie-katy>

7. INSTALLATION

Every roll of EUROTOP membrane comes with fitting instructions which contain the most important information and comments concerning product installation.

Basic installation rules:

- The EUROTOP membranes are laid directly onto rafters, insulation or sarking with the coloured or printed side uppermost (fig.6), without the need for leaving any ventilation gaps between insulation and membrane.

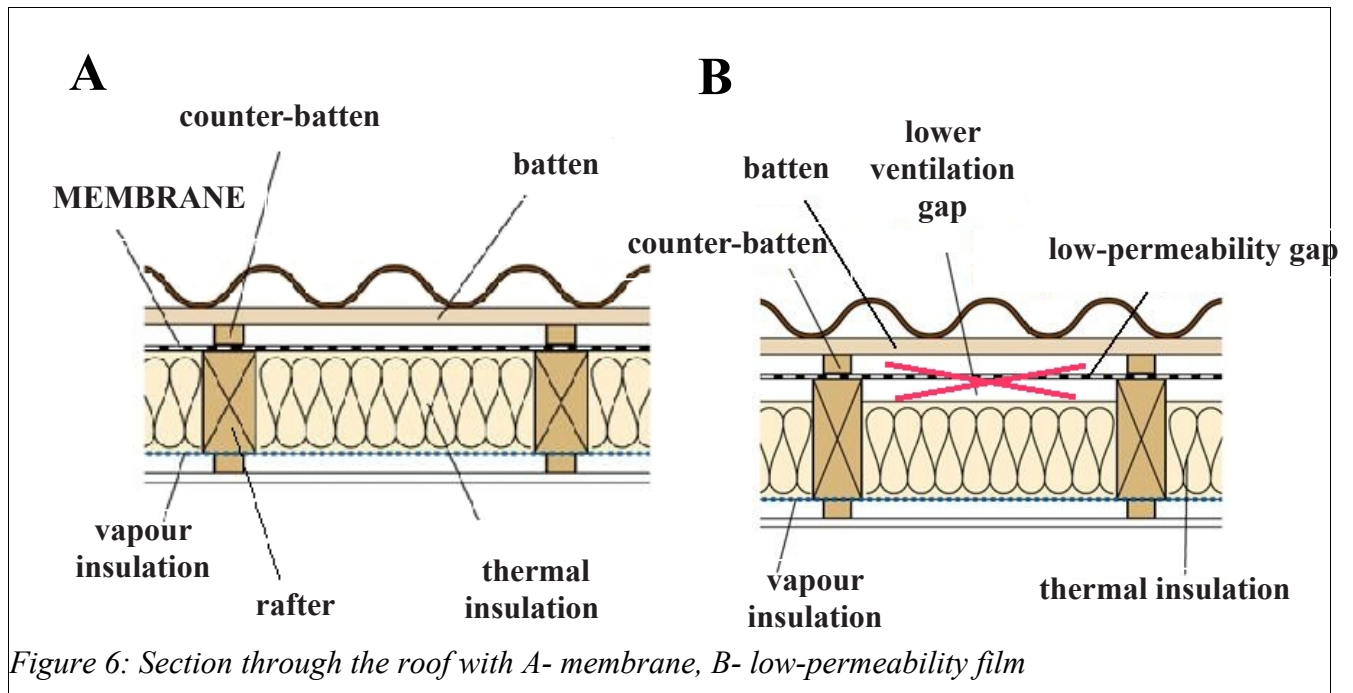


Figure 6: Section through the roof with A- membrane, B- low-permeability film

- EUROTOP is initially stapled directly to rafters and then pressed with counter – battens (fig.7).

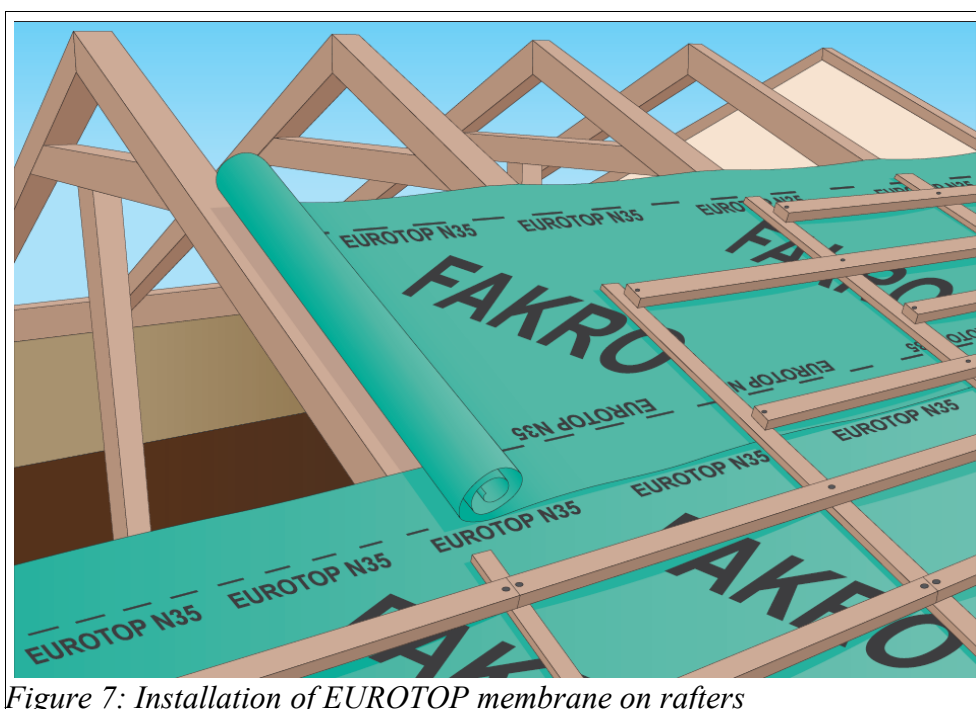
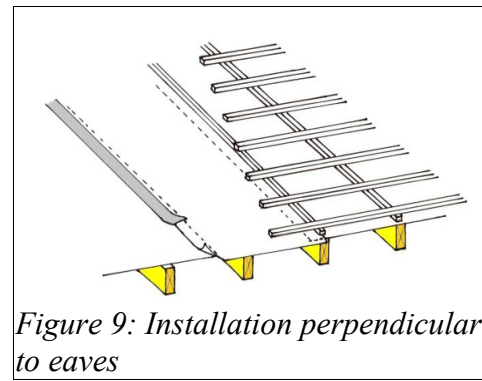
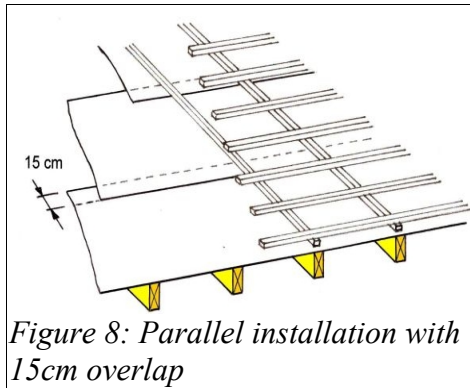


Figure 7: Installation of EUROTOP membrane on rafters

- Usually, roofing membranes are installed parallel to the eaves (fig.8), but the direction of laying may be different – also perpendicular to the eaves (fig.9). In such a system, used most frequently when renovating the roof structure, the correct bonding of membrane bands is crucial.
- The subsequent bands are laid with overlaps which are marked with a broken line on a top surface of EUROTOP membrane. This line indicates the most often used overlap size, however its width depends on the roof pitch, as per table 2.



Roof pitch:	Overlap:
20 ⁰ - 24 ⁰	20cm
25 ⁰ - 35 ⁰	15cm
36 ⁰ - 90 ⁰	10cm

Overlaps can be sealed using specialist tapes Euroband and Butylband

Table 2: Recommended overlap widths between subsequent bands of EUROTOP membrane

Detailed information concerning EUROTOP membrane can be found in the installation manual available on the intranet at: <http://intranet.fakro.pl/pl/products/membranes/air-permeable/eurotop/instructions/fitting-instructions>

8. CERTIFICATION

All EUROTOP membranes are CE marked pursuant to the European harmonized standards 13859-1 : 2006 and EN 13859-2 :2006 Flexible sheets for waterproofing – Definitions and characteristics of underlays,
 Part 1 Underlays of discontinuous roofing,
 Part 2 Underlays of walls.

Declarations of Conformity CE are available on the intranet at: <http://intranet.fakro.pl/pl/products/membranes/air-permeable/eurotop/approvals-and-declarations>

9. LOGISTIC DETAILS

The EUROTOP membrane is offered in 1.5m wide and 50m (75m²) long rolls.

Packaging of a single roll consists of:

- cardboard tube (core) onto which membrane is wound,
- wrap for wrapping membrane and protecting it from damage and unwinding.



Figure 10: Roll of EUROTOP S65 membrane



Figure 11: Roll of EUROTOP T180 membrane

On the label (fig.12) i.e. wrap print there are included the following information:

- product name,
- basic data concerning installation,
- bar code,
- CE sign.

EUROTOP membranes are packed on Euro pallets:

- 36 rolls (EUROTOP L2, EUROTOP L3, EUROTOP N15, EUROTOP N35),
- 25 rolls (EUROTOP S4 i EUROTOP S65),
- 27 rolls (EUROTOP T150, T180),

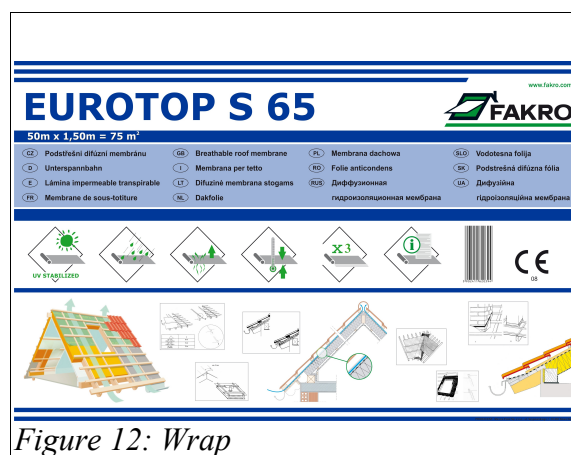


Figure 12: Wrap

Logistic cards are available on the intranet at: <http://intranet.fakro.pl/pl/products/membranes/air-permeable/eurotop/logistics-cards>

10. ACCESSORIES

For bonding EUROTOP membranes during installation, there should be used self-adhesive tapes developed specifically for permanent joining or mending membranes:

- **BUTYLBAND** – double-sided butyl tape for joining membranes by means of overlaps, fixing membranes around chimneys and above guttering (fig.12),



Figure 12: BUTYLBAND tape

- **EUROBAND** – single-sided butyl tape coated with aluminum film for mending membranes and sealing around chimneys (fig.13),



Figure 13: EUROBAND tape

- **EUROBAND W** – single-sided adhesive tape made of polypropylene mesh for mending membranes and gluing overlaps (fig.14),

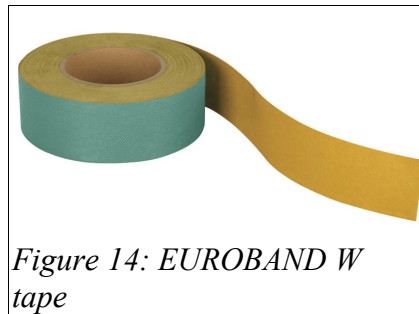


Figure 14: EUROBAND W tape

- **EUROBAND P** – tape made of water repellent polyethylene foam for sealing fixing points for counter-battens (fig.15).



Figure 15: EUROBAND P tape

More information concerning the bands is to be found in the “Bands – accessories for roofing membranes and underlays” product overview available on the intranet at: <http://intranet.fakro.pl/pl/products/membranes/tape/detailed-knowledge/product-outline-and-detailed-information>

11. FAKRO MEMBRANES AND THE COMPETITION

11.1. Competition products for EUROTOP L2, L3

FAKRO		MARMA	TYVEK	COROTOP		MDM
EUROTOP L2	EUROTOP L3	MEMBRAN A 90	TYVEK SOFT	COROTOP	COROTOP LIGHT	AquaTec 95
90g	95g	90g	60g	110g	100g	95g

11.2. Competition products for EUROTOP N15, N35

FAKRO		MARMA		TYVEK	COROTOP		MDM	DORKEN	
EUROTOP N15	EUROTOP N35	DACHOWA	DACHOWA 3	TYVEK PRO	COROTOP EXTRA	COROTOP STRONG	AquaTec 115	DELTA-VENT N	DELTA-VENT S
115g	135g	115g	135g	128g	115g	140	115g	120g	140g

11.3. Competition products for EUROTOP S65, S4

FAKRO		MARMA		TYVEK	MDM		DORKEN	
EUROTO P S65	EUROT OP S4	EKRAN DACHOWY 165	DACHOWA WZMOCNION A	TYVEK SUPRO	AquaTe c 150	AquaTe c 180	DELT A- VITA X	DELT A MAX X
165g	155g	165g	155g	148g	150g	180g	160g	190g

11.4. Competition products for EUROTOP T150, T180

FAKRO		TYVEK	MDM		DORKEN	
EUROT TOP T150	EUROT TOP T180	TYVEK SUPRO	AQ TT 150	AQ TT 180	DELTA- Vent S Plus	DELTA Vent S Plus
150g	180g	148g	150g	180g	140g	160g

12. FAQs

1. Is it possible to use wood preservatives – is there any danger of damage to the underlay?

Application of wood preservatives in order to protect the wood structure is necessary as otherwise it would be prone to damage caused by such factors as weather conditions fungi or pests. Nevertheless, it is vital to take certain precautions – roof timber (rafters, battens and counter-battens) should be impregnated not later than 48 hours before installation of the underlay - which means the timber with preservative which is still wet should not be used. For roof timber, there should be used specific agents intended for this particular application. Petroleum or petrol should not be used. After installing the underlay no preservatives should be used – they may react with the underlay.

2. When fitting the underlay, roofers splattered the membrane with chainsaw oil – can it cause any damage?

Roofing membranes distributed by FAKRO have been tested for their resistance to engine oils and showed no damage under influence of such substances, however, tests performed on other products available on the market proved that not all roofing membranes are resistant to oils – caution is highly advisable.

3. During installation on the roof, the membrane has been damaged – if and how should it be mended?

It is absolutely necessary to fix damaged membranes. For this purpose there are used special bands specifically developed for this application. The bands with butyl mass offering high stickiness are ideal for this very application. They are durable, flexible and adhere very well to roofing membranes and underlays. However, the surfaces should be degreased and free from dust or dirt.

4. Are roofing membranes and underlays resistant to UV radiation?

Roofing membranes and underlays are UV stabilised for the period of time provided in the materials attached to every products. However, final roofing should be laid before this time – too long exposure to UV radiation lowers its resistance to ageing. It also necessary to remember about residual radiation which reaches from the inside when the membrane is not covered with eaves and insulation. In the loft, the light from roof windows may fall directly on the membrane – then the membrane should be protected against UV radiation. As for the eaves, a particularly dangerous situation may arise when the building is plastered with a light-reflecting colour leading to residual light reaching the membrane. Such process may take several years and removing its harmful effects can be costly and troublesome. Hence, it is advisable to protect the eaves within 6 months from covering the roof.

5. What are the advantages of using membranes with adhesive bands?

Using membrane with adhesive band improves watertightness and windproofness of primary roofing layer. It is especially important in roofing with small angle – below 20°. Application of adhesive band also improves convenience and installation time.

6. Why EUROTOP T150 and T180 membranes are available with one and two adhesive bands?

Apart from basic advantages of membranes with adhesive bands, using double adhesive band (on top and bottom of the membrane) strengthens bonding of the membrane overlaps onto roofing. Adhesive band from one layer is applied to the adhesive band of the second layer of membrane. It may be particularly important in weather conditions with strong wind or where it is required by installation and market culture.

7. With the installation angles below 20° gluing overlaps of the membrane with the use of tape is recommended in the majority of cases. Can instead of bonding overlaps on standard membranes be used convenient and fast in installation membranes with adhesive bands?

Yes, because membranes with adhesive bands perform the same functions as gluing overlaps with the use of tape, but the adhesive bands are more convenient and faster in installation.

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