

## KÖSTER TPO Pro Membranes

Polyolefin based waterproofing membrane with centrally embedded glass fiber mesh

- DIN EN 13956 Certificate and DIN EN 13967 Certificate
- FLL Certificate
- Drinking water suitability and hygiene certificate

### Product Description:

KÖSTER TPO Pro Membranes are made of flexible polyolefin. A glass fiber mesh is embedded in the middle of the membrane to provide an especially high dimensional stability and resistance against perforation. It offers a high reliability and is characterized by a fast and economical installation. KÖSTER TPO Membranes are UV-stable, resistant to aging, microorganisms, and can be applied directly onto old bitumen membranes

### Features:

- Environmentally friendly
- Free of softeners and chlorine
- UV-stable
- Safe for health, water, soil, and plants
- Resistant to microorganisms
- Highly tear resistant
- Compatible with bitumen
- Root resistant
- Temperature and weather resistant
- Recyclable
- Aging and rot resistant

### Dimensions and Packaging:

20mt size x 1,50 mt width

Thickness : 1,5mm – 1,8mm

Color: Light grey



### Field of Application:

For flat and sloped roofing structures where heat reflectance or architecture requirements dictate a light-colored surface. Application by loose laying with ballast, mechanical fastening, or strip adhesion with KÖSTER PUR Membrane Adhesive (fleece coated membranes only). The membrane is the final layer of the roof construction.

### Application:

#### Mechanical Fastening:

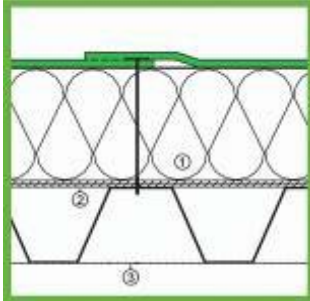
The most common method of installing TPO membranes is through mechanical fastening. The membrane is mechanically fastened to the roof structure, which can consist of either wooden sheathing, trapezoidal metal sheets, or a concrete slab. The membrane is generally fastened through the thermal insulation, which requires special fasteners. These fasteners have a large contact area

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## Waterproofing Systems

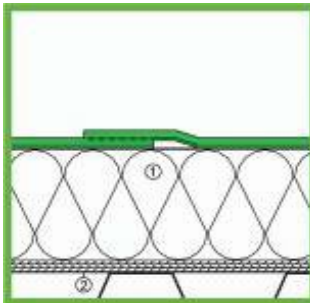
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which durably connect the membrane to the substrate. Overlapping the membranes over the fasteners prevent the penetration of water into the installation.



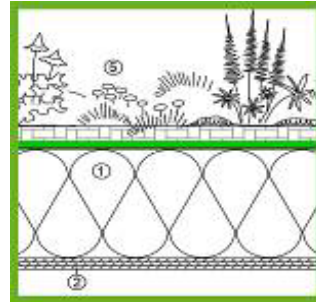
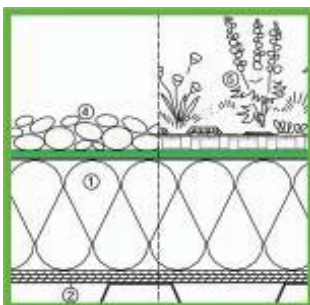
### Loose Laying With Ballast:

A quick and secure way to install KÖSTER TPO Membranes is through loose laying with ballast. Ballast can consist of either gravel, paving slabs, or even green roofs. Ballast helps protect the roofing membrane against wind loads and can accommodate a wide range of architectural styles.



### Strip Adhesion of KÖSTER TPO Membrane F:

Strip adhesion to the substrate offers a time-saving installation. The KÖSTER TPO Membrane features a special fleece coating which increases the bonding of the KÖSTER PUR Membrane adhesive. This results in a high adhesive strength and creates a perfect bond to the substrate.



### Welding of Joint:

The connection of the sheets is performed by hot air welding using automatic welding machines and manual welding tools. The membranes are plasticized in the overlapping area by the hot air flow and homogeneously connected by compressing with a roller. During this procedure a small weld seam is formed and material should flow slightly from the overlap. This should be kept as small as possible, but must be visible. The welding seam is an indicator of a secured and waterproof connection.

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 0761 15	KÖSTER BAUCHEMIE AG Dieselstrasse 1-10, 26607 Aurich  KÖSTER TPO Pro 1.5 EN 13956 0761-CPR-0422 EN 13967 0761-CPR-0423  Çatı ve İzolasyon örtüsü esnek poliolefin FPO (PE) merkezi cam tülü donatılı	
	Boy (DIN EN 1848-2)	20 m
En (DIN EN 1848-2)	1,50 m	
Efektif kalınlık (DIN EN 1849-2)	1,5 mm	
	<b>DIN EN 13956:2012</b> <b>Açıkta bırakılan veya üzeri örtülen</b> <b>yatay çatılar: serbest serilmiş ve</b> <b>mekanik olarak tespit edilmiş veya</b> <b>balast ile</b>	<b>DIN EN 13967:2012</b> <b>Geçirimsiz bariyer Tip T</b>
Tanım DIN V 20000-201ve DIN V 20000-202	DE/E1-FPO-BV-E-GV-1,5	BA-FPO-BV-E-GV-1,5
Renk	Standart: açık gri	Standart: açık gri
Görsel kontrol	Gözle görülen hata yoktur	Gözle görülen hata yoktur
Doğrusallık (DIN EN 1848-2)	≤ 50mm	≤ 50mm
Düzlük (DIN EN 1848-2)	≤ 10mm	
Birim ağırlık (DIN EN 1849-2)	1490 g/m <sup>2</sup>	1490 g/m <sup>2</sup>
Su geçirimsizlik (DIN EN 1928 – Metot B)	400 kPa/72h geçirimsiz	400 kPa/72h geçirimsiz
Su dahil sıvı kimyasallara karşı tepki (DIN EN 1847)	Başarılı (Metot B)	Geçirimsiz (Metot A)
Dışarıdan ateş etkisine karşı dayanım sınıfı DIN CETS/TS 1187; DIN 4102-7; DIN EN 13501-5	Broof(t1) <sup>3)</sup>	-
Yangına tepki sınıfı	Sınıf E	Sınıf E
Doluya karşı direnç (DIN EN 13583)		-
Sert zeminlerde	≥ 25 m/s	
Yumuşak zeminlerde	≥ 38 m/s	
Soyulma mukavemeti (bini kaynaklarının DIN EN 12316-2)	≥ 400 N/50 mm	-
Ek yeri dayanımı (DIN EN 12317-2)	Kopma kaynak noktasında olmamıştır	Kopma kaynak noktasında olmamıştır
Su buharı difüzyon direnci (DIN EN 1931)	μ = 85.000	μ = 85.000
Çekme direnci (DIN EN 12311-2)	≥ 5 N/mm <sup>2</sup> (Metot B)	≥ 7 N/mm <sup>2</sup> (Metot B)
Kopma uzaması (DIN EN 12311-2)	≥ % 350 (Metot B)	≥ % 500 (Metot B)
Şok yüklemelere karşı direnç (DIN EN 12691)	≥ 400 mm	≥ 400 mm
Alüminyum zemin (metot A)	≥ 1000 mm	≥ 1000 mm
EPS zemin (metot B)		
Statik yüklemelere karşı direnç (DIN EN 12730 metot A/B)	≥ 20 kg ≥ 20 kg	≥ 20 kg ≥ 20 kg
Yırtılmaya karşı direnç (DIN EN 12310-2)	≥ 175 N	≥ 175 N
Bitki köklerine karşı dayanım	Dayanımlıdır	
Boyutsal kararlılık (DIN EN 1107-2)	≤ 0,2 %	-
Soğuk iklimde bükülme dayanımı (DIN EN 495-5)	≤ -50 °C	-
UV direnci-yüksek sıcaklık ve suya karşı direnç (DIN EN 1297 – 1000h)	Dayanımlıdır: Sınıf 0	-
Ozon direnci (DIN EN 1844)	Dayanımlıdır: yırtılma sınıfı 0	-
Bitüm ile temas direnci (DIN EN 1548)	Dayanımlıdır	Geçirimsizdir
Sıcak depolama sonucunda dayanıklılık (DIN EN 1296, DIN EN 1928-Metod A)	Geçirimsizdir	Geçirimsizdir
Yırtılma direnci (Nagelschaft) (DIN EN 12310-1)	≥400 N	≥400 N

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## Waterproofing Systems

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 <b>0761</b> <b>15</b>	<b>KÖSTER BAUCHEMIE AG</b> Dieselstrasse 1-10, 26607 Aurich  <b>KÖSTER TPO Pro 1.8</b> EN 13956 0761-CPR-0422 EN 13967 0761-CPR-0423  Çatı ve İzolasyon örtüsü esnek poliolefin FPO (PE) merkezi cam tülü donatılı	
	Boy (DIN EN 1848-2)	20 m
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Tanım DIN V 20000-201ve DIN V 20000-202	DE/E1-FPO-BV-E-GV-1,5	BA-FPO-BV-E-GV-1,5
Renk	Standart: açık gri	Standart: açık gri
Görsel kontrol	Gözle görülen hata yoktur	Gözle görülen hata yoktur
Doğrusallık (DIN EN 1848-2)	≤ 50mm	≤ 50mm
Düzlük (DIN EN 1848-2)	≤ 10mm	
Birim ağırlık (DIN EN 1849-2)	1780 g/m <sup>2</sup>	1780 g/m <sup>2</sup>
Su geçirimsizlik (DIN EN 1928 – Metot B)	400 kPa/72h geçirimsiz	400 kPa/72h geçirimsiz
Su dahil sıvı kimyasallara karşı tepki (DIN EN 1847)	Başarılı (Metot B)	Geçirimsiz (Metot A)
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Yangına tepki sınıfı	Sınıf E	Sınıf E
Doluya karşı direnç (DIN EN 13583)		-
Sert zeminlerde	≥ 25 m/s	
Yumuşak zeminlerde	≥ 38 m/s	
Soyulma mukavemeti (bini kaynaklarının DIN EN 12316-2)	≥ 400 N/50 mm	-
Ek yeri dayanımı (DIN EN 12317-2)	Kopma kaynak noktasında olmamıştır	Kopma kaynak noktasında olmamıştır
Su buharı difüzyon direnci (DIN EN 1931)	μ = 85.000	μ = 85.000
Çekme direnci (DIN EN 12311-2)	≥ 5 N/mm <sup>2</sup> (Metot B)	≥ 7 N/mm <sup>2</sup> (Metot B)
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Bitki köklerine karşı dayanım	Dayanımlıdır	
Boyutsal kararlılık (DIN EN 1107-2)	≤ 0,2 %	-
Soğuk iklimde bükülme dayanımı (DIN EN 495-5)	≤ -30 °C	-
UV direnci-yüksek sıcaklık ve suya karşı direnç (DIN EN 1297 – 1000h)	Dayanımlıdır: Sınıf 0	-
Ozon direnci (DIN EN 1844)	Dayanımlıdır: yırtılma sınıfı 0	-
Bitüm ile temas direnci (DIN EN 1548)	Dayanımlıdır	Geçirimsizdir
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Yırtılma direnci (Nagelschaft) (DIN EN 12310-1)	≥400 N	≥400 N

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