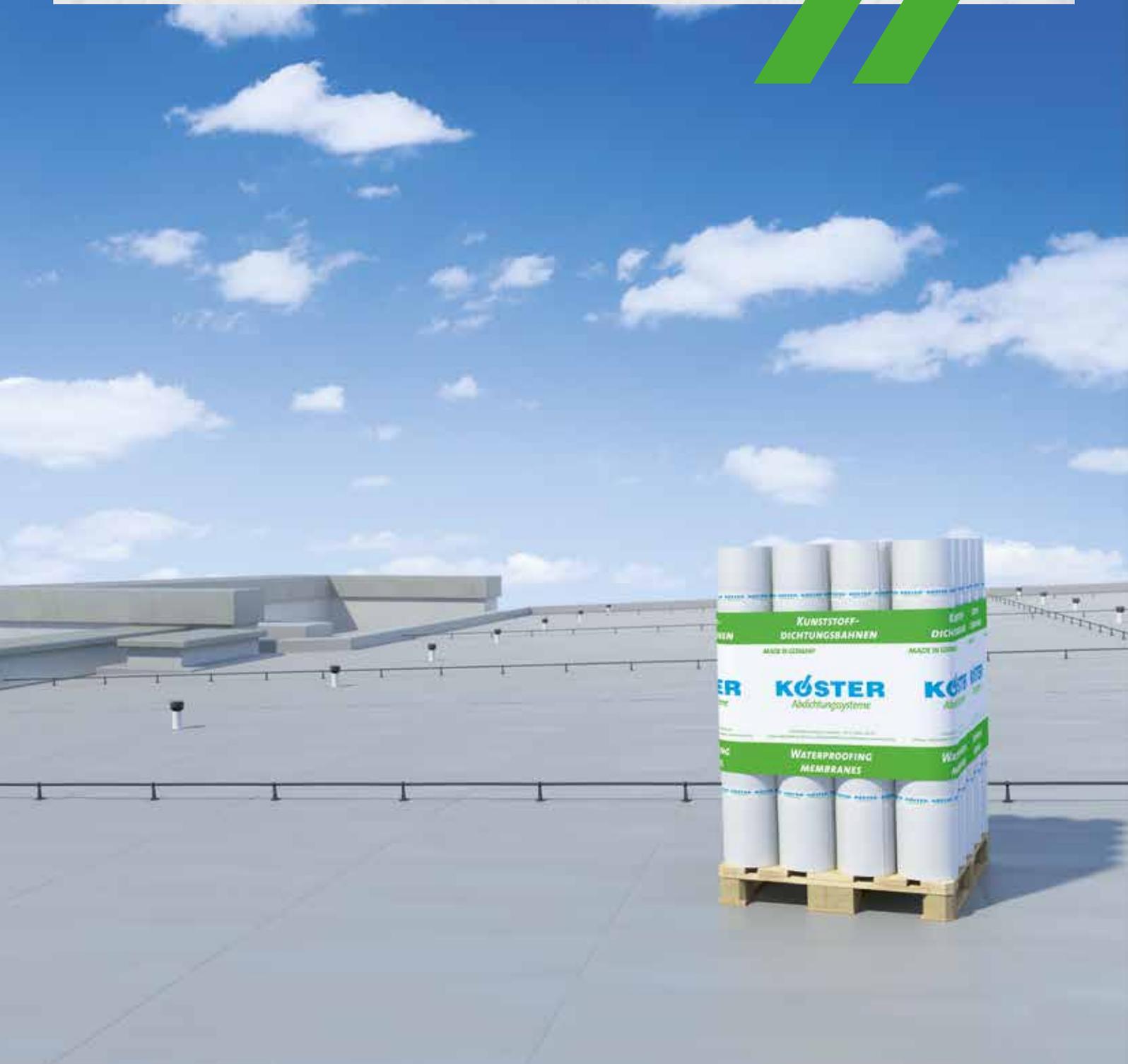


**KÖSTER**

Secure Roof Waterproofing

**KÖSTER TPO**





## KÖSTER TPO: the durable, environmentally friendly polymer waterproofing membrane

KÖSTER TPO is:

- **Indestructible:** more than 40 years of proven durability on the roof
- **Economical:** quick and easy to install, long-lasting
- **Easy to weld:** top and bottom layers are made of the same material
- **Safe:** very wide welding temperature range from +400 °C to +620 °C
- **Reliable:** up to 25 years guarantee from the Allianz Insurance for Installation and Material
- **... and offers even more advantages:** UV-resistant, root and rhizome resistant, acid and Kerosene resistant, recyclable, high tensile strength and elongation values, resistant to Microorganisms, low fire load – even direct laying on EPS possible, will not become brittle (no volatile plasticizers, no PVC)

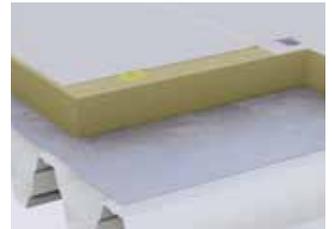
# KÖSTER TPO Roofing Membranes

KÖSTER TPO Roofing Membranes are particularly characterized by their excellent workability, flexibility, and weldability. The unique polyethylene (PE) based composition guarantees a simple, uncomplicated, safe, and permanent weld.



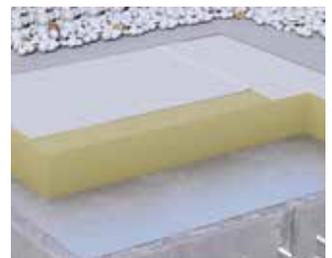
Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 1.2	1.2 mm	1.50 m	RT 812 150	30 m

Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 1.5	1.5 mm	1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 815 150	20 m
			RT 815 105	
			RT 815 075	
			RT 815 052	
			RT 815 035	
			RT 815 025	



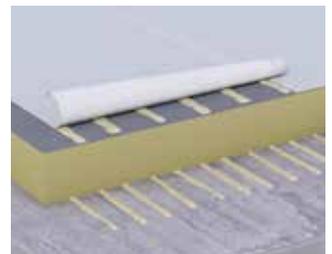
Mechanically fastened installation

Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 1.8	1.8 mm	2.10 m, 1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 818 210	20 m
			RT 818 150	
			RT 818 105	
			RT 818 075	
			RT 818 052	
			RT 818 035	
			RT 818 025	



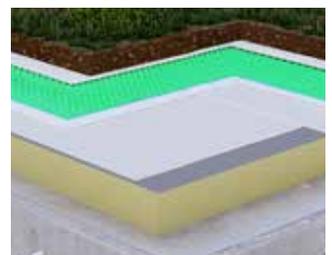
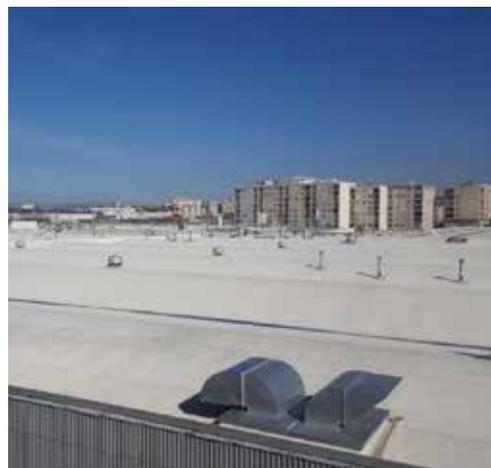
Loose laying with ballast

Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 2.0	2.0 mm	2.10 m, 1.50 m, 1.05 m, 0.75 m, 0.525 m, 0.35 m, 0.25 m	RT 820 210	20 m
			RT 820 150	
			RT 820 105	
			RT 820 075	
			RT 820 052	
			RT 820 035	
			RT 820 025	

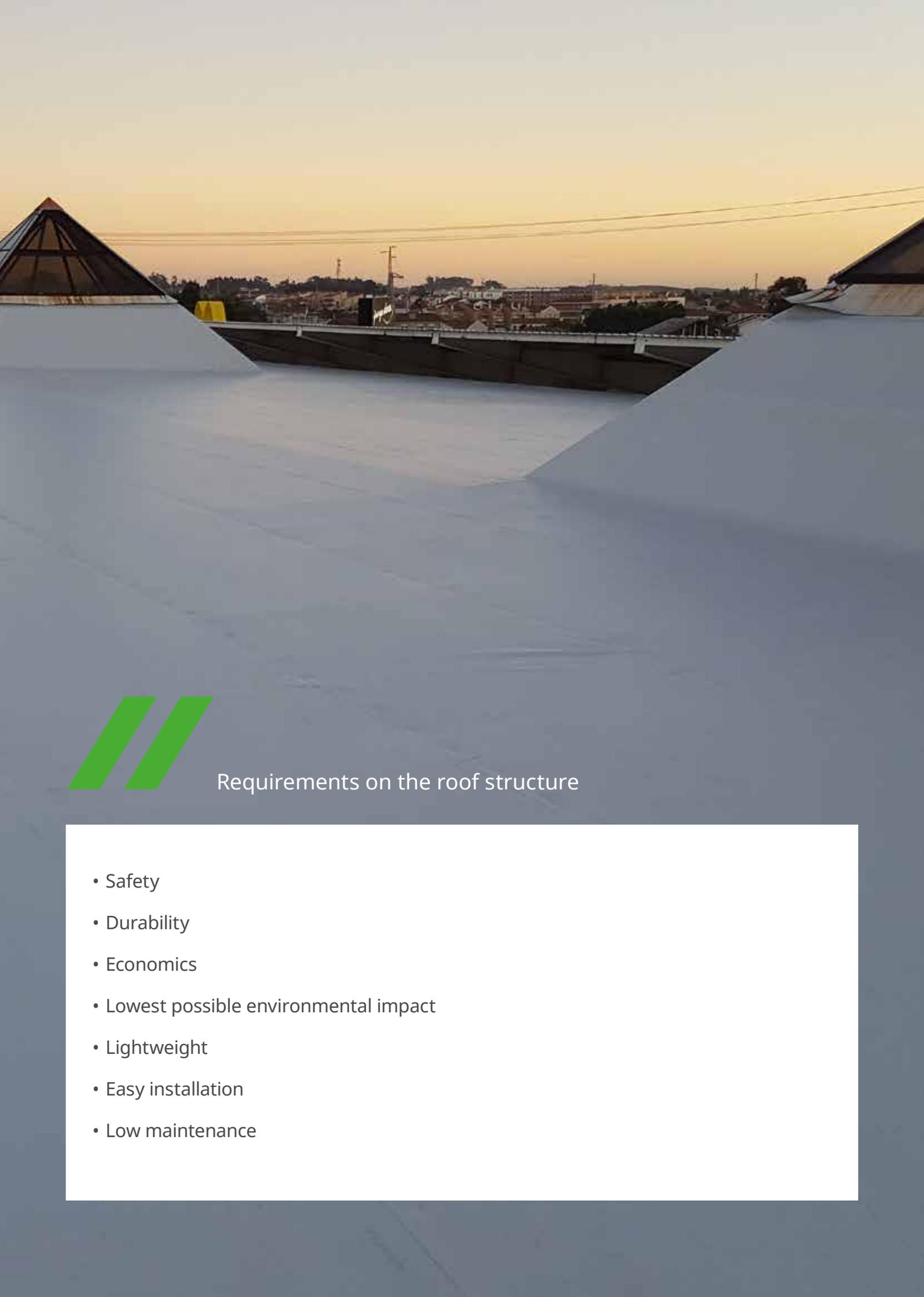


Bonded application

The complete range of accessories for KÖSTER TPO Roofing Membranes can be found at [www.koster.eu](http://www.koster.eu).



Green roofs



## Requirements on the roof structure

- Safety
- Durability
- Economics
- Lowest possible environmental impact
- Lightweight
- Easy installation
- Low maintenance

## Flat roofs

Cold, heat, rain, hail, snow, extreme wind, UV and infrared rays as well as many different types of chemicals impact a roof. Additionally, roofs are subject to movement and other mechanical stresses from the construction itself. As a result, roofs must be able to withstand a lot of stress. Permanently.

At the same time occupants and users place a wide variety of demands on their roofs. They should be architecturally sophisticated, roof terraces should offer space to relax and unwind, solar panels and solar modules should produce energy and be securely attached. There are also many other installations and superstructures on roofs such as ventilation shafts, transmission masts, or chimneys.

If the roof waterproofing is carefully planned and implemented the building will be well protected for decades.



Flat roof waterproofing with KÖSTER TPO, REAL market in Gifhorn, Germany



Flat roof waterproofing with KÖSTER TPO, Schiphol Airport, Amsterdam



Flat roof waterproofing with KÖSTER TPO, Pingo Doce supermarket, Aveiro, Portugal



Flat roof waterproofing with KÖSTER TPO, EDEKA, Fürstfeldbruck, Germany



Flat roof waterproofing with KÖSTER TPO, Netherlands, Delft, IKEA



Roof waterproofing with KÖSTER TPO, Panama, Costa Del Este, food court, commercial property roof



### Bonded installation with KÖSTER TPO F

KÖSTER TPO F (Fleece) Membranes are the all-rounder among the KÖSTER TPO roofing membranes. They can be used on almost any roof structure. They are mainly installed with KÖSTER 2C PUR Membrane Adhesive. The membrane is bonded permanently to almost any surface via the firmly laminated fleece.

## KÖSTER TPO F: TPO membrane with polyester fleece backing

KÖSTER TPO F Membranes are polyolefin-based thermoplastic roofing and waterproofing membranes with centrally embedded glass fiber mesh and a fleece laminated underside.

KÖSTER TPO F Membranes can be fully- or strip adhered with KÖSTER Membrane Adhesive or fully adhered with hot bitumen. The membranes can also be loose laid (under ballast) or mechanically fastened.

KÖSTER TPO 2.0 F (FR) has improved flame-resistant properties (FR) and fulfills the requirements for hard roofs for direct adhesion to EPS insulation. KÖSTER TPO 2.0 F W is a **white** thermoplastic roofing and waterproofing membrane with a SRI value of 106.

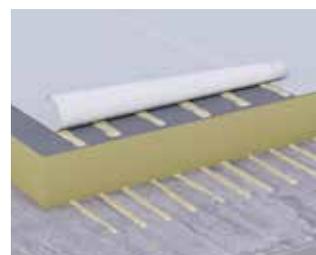
Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 2.0 F	2.0 mm	1.50, 1.05 m	RT 820 150 F	20 m
			RT 820 105 F	
KÖSTER TPO 2.0 F FR		1.50 m	RT 820 150 F FR	
KÖSTER TPO 2.0 F W		1.50 m	RT 820 150 F W	



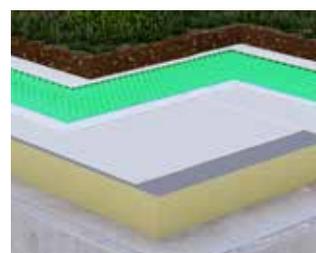
Mechanically fastened installation



Loose laying with ballast



Bonded application



Green roofs



## Pioneer in matters of sustainability: KÖSTER TPO Pro

This is what sustainability looks like: KÖSTER TPO Pro has the same quality requirements as all KÖSTER TPO Membranes and uses near-to-prime industrial recycled raw materials. These are plastics that were used directly in production or from one-time use in the commercial sector (e.g. wrapping films). This means that this waterproofing membrane protects the environment with every square meter installed.

# KÖSTER TPO Pro: Sustainable and economical roofing Membrane

KÖSTER TPO Pro is a roof waterproofing membrane for professional use on exposed industrial roofs in lightweight construction. It impresses with its high level of sustainability, economic efficiency and longevity and thus supports a modern, resource-saving construction culture.



Product name	Thickness	Width	Article no.	Length
KÖSTER TPO Pro	1.5 mm, 1.8 mm	1.5 m	RT 815 150 Pro	20 m

## Extremely resource-saving

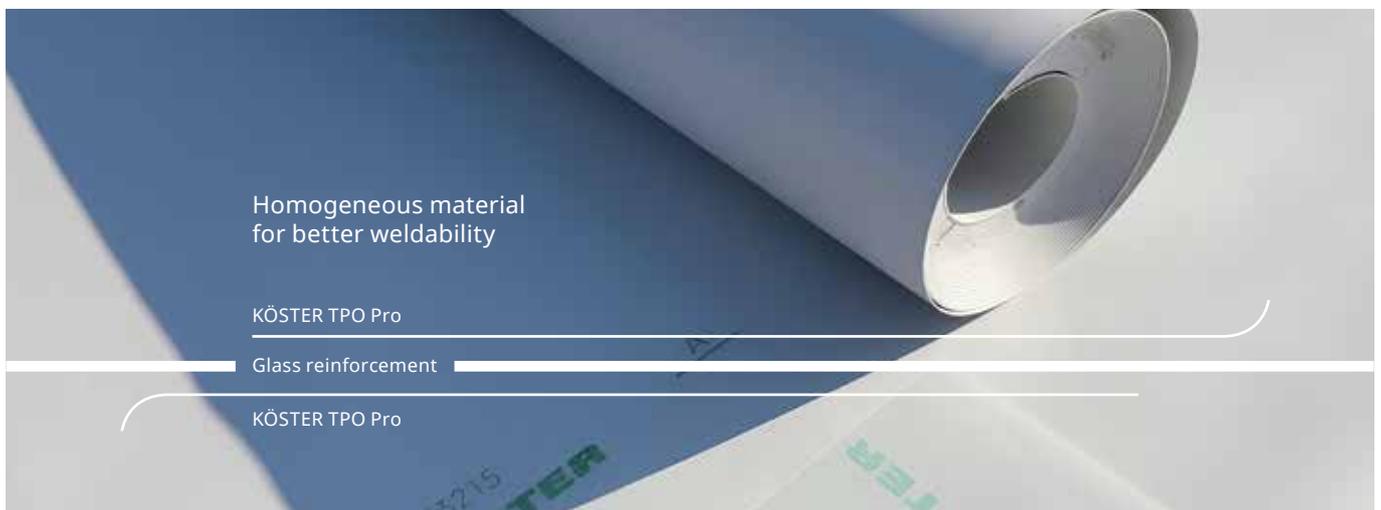
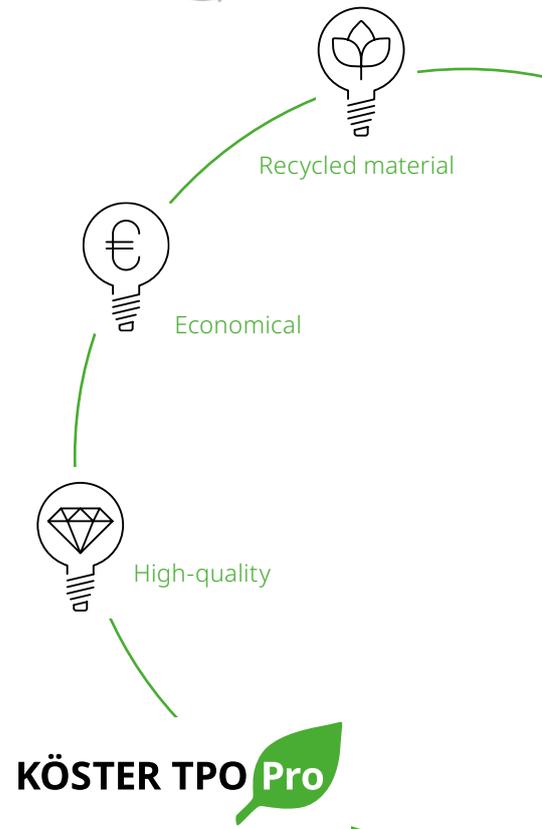
With KÖSTER TPO Pro, we have developed the first roofing membrane based on recycled near-to-prime material. After decades, at the end of their life cycle, KÖSTER TPO Pro roofing membranes can be completely recycled.

## Particularly economical

The long lifespan of more than 30 years, the use of recycled material and cost-effective production make KÖSTER TPO Pro a particularly economical roof waterproofing Membrane. Compared to PVC waterproofing membranes, cost advantages can be achieved over the entire service life.

## Sustainable

By using recyclates, KÖSTER TPO Pro contributes to a sustainable building culture and therefore also to the criteria for a DGNB certificate. The basis and evidence for the ecological assessment is the environmental product declaration (EPD) of the Institute Building and Environment (IBU).





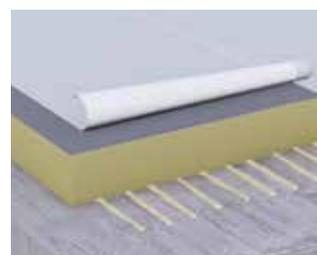
## When it has to be quick: KÖSTER TPO SK

Adhered construction without glue? Installation can hardly be quicker and easier than with KÖSTER TPO SK: The self-adhesive waterproofing membrane has a special adhesive layer on the back so that it can be adhered directly to the prepared substrate.

## KÖSTER TPO SK: Self-adhesive TPO membrane with polyester fleece backing

KÖSTER SK self-adhered TPO Membranes are polyolefin-based thermoplastic roofing and waterproofing membranes with centrally embedded glass fiber mesh, special self-adhering fleece laminated underside, and improved flame-resistant properties (FR). The membranes are classified as B<sub>roof</sub> (t1) and fulfill the requirements for hard roofs and are suitable for direct adhesion to EPS insulation. KÖSTER SK membranes are deliberately available in the easy-to-use membrane width of 1.05 m, in the two nominal layer thicknesses of 1.5 and 2.0 mm and partially in the colors light grey and slate grey.

Product name	Thickness	Width	Length
KÖSTER TPO 1.5 SK FR in light grey	1.5 mm	1.05 m, 0.525 m	20 m
KÖSTER TPO 2.0 SK FR in light grey	2.0 mm	1.05 m	



Self-adhered installation

Roof waterproofing with self-adhesive TPO roofing membrane, new construction, Schwetzingen, Germany



Approx. 2,300 m<sup>2</sup> pitched roof made of trapezoidal sheet metal as a supporting shell, self-adhesive vapor barrier / EPS thermal insulation, installed with staggered layers of adhesive / KÖSTER TPO 2.0 SK (FR) self-adhesive. An approx. 200 m<sup>2</sup> roof area with concrete slab has the same build-up.



## Climate protection active: KÖSTER TPO White

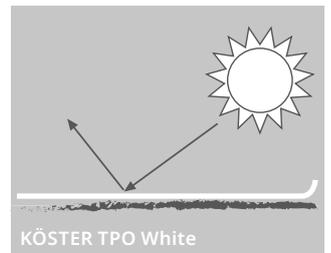
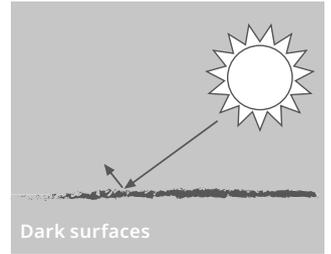
The KÖSTER TPO White is a highly reflective thermoplastic waterproofing membrane. It reflects most of the sunlight directly back and therefore hardly heats up. The roof remains pleasantly cool and air conditioning costs are reduced. That saves energy. Even further: reflected solar energy reduces global warming.

# KÖSTER TPO White: Reflective TPO Membrane

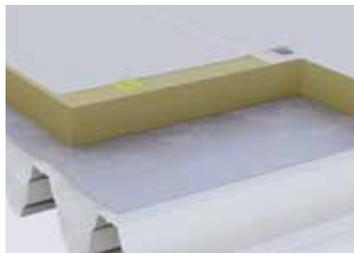
White KÖSTER TPO roofing membrane reflects the sunlight. As a result, the temperature on the roof drops. In addition to the generally lower cooling requirement for the entire building, a lower temperature on the roof surface significantly increases the efficiency of photovoltaic systems. If a building ventilation system is installed on the roof, this effect also transports much cooler air into the building. This is positive for the energy balance and therefore for the environment.

KÖSTER TPO White was determined to have the excellent SRI value of 106.

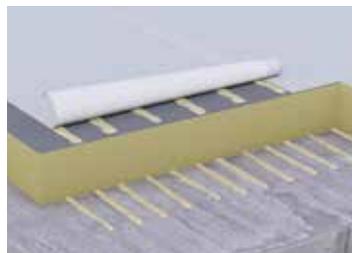
The SRI value describes the solar reflectance of surfaces. An SRI value of 0 is assumed for a black comparison surface and an SRI value of 100 for a white comparison surface.



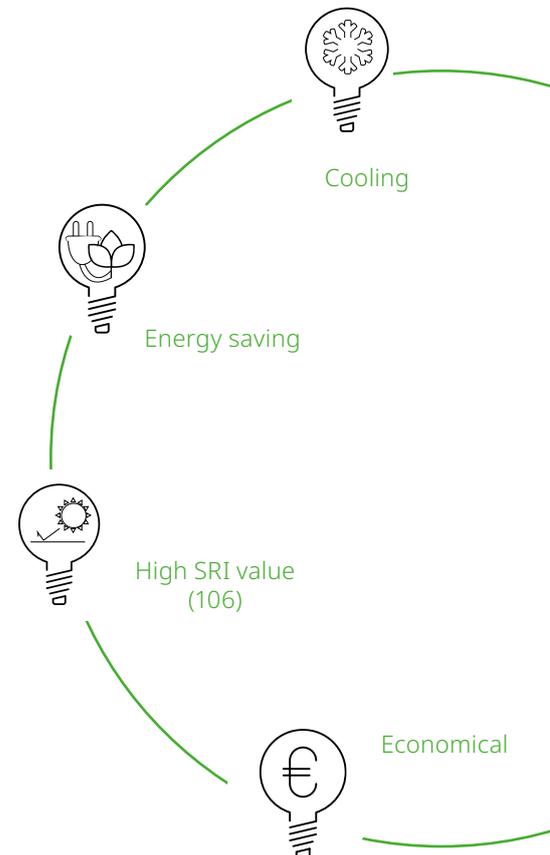
Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 2.0 W	2.0 mm	1.50, 1.05 m	RT 820 150 W	20 m
			RT 820 105 W	



Mechanically fastened installation

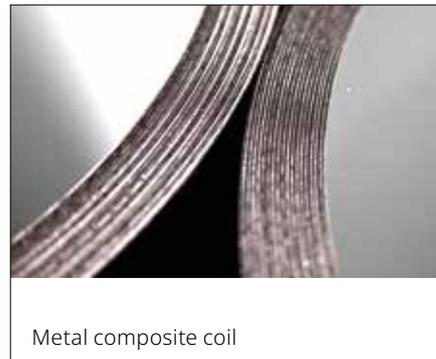


Bonded application



## Comprehensive range of accessories

In addition to our KÖSTER TPO roofing membranes, we provide a wide range of system accessories. This includes among others molded parts for corners and penetrations, connection sleeves, composite sheets and maintenance mats as well as accessories for drainage and ventilation.



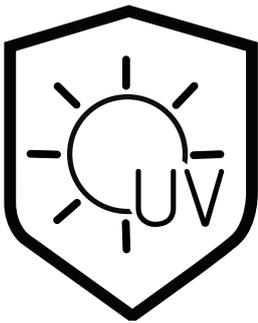
KÖSTER TPO 2.0 U is an unreinforced sheet for the KÖSTER TPO roofing and waterproofing membranes for the manual production of corners, gullies, flanges, and corner protection.

Product name	Thickness	Width	Article no.	Length
KÖSTER TPO 2.0 U	2.0 mm	0.525 m	RT 820 052 U	20 m

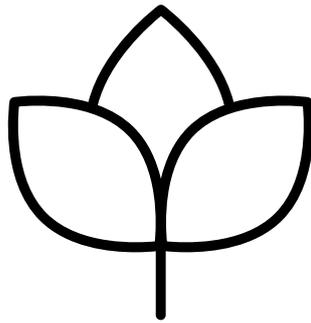


## Green roofs with root resistant KÖSTER TPO

A green roof can improve the humidity, radiation, and air temperature in its immediate vicinity. Plants absorb and reflect a large part of the short-wave rays that occur in the summer months. Another positive effect is caused by the evaporation of water on the leaf surface and the cooling associated with evaporation. Various measurements have shown a temperature gradient of up to +10 °C between green and non-green roof areas during the midday hours.



Protection against UV radiation



Ecological compensation areas



Root and rhizome resistance according to the FLL method

Green roofs, as a form of greenery for buildings, are part of ecological building. The common construction methods of green roofs is independent of the type of planting. In any case relevant green roofing guidelines must be observed.

Standard layer structure of green roofs:

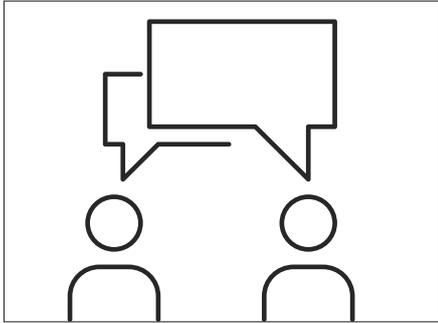
- Vegetation layer
- Growth medium
- Filter membrane
- Drainage layer
- Protective layer
- Roof construction with KÖSTER TPO



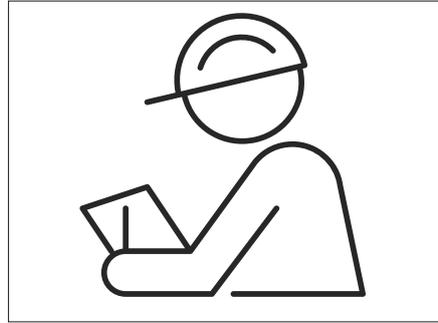
KÖSTER TPO roofing membranes can be laid loosely under green areas if the further green roof system serves as ballast and protects against wind uplift. A positive characteristic of TPO roofing membranes is that they are root resistant and root-proof so that vegetation can be planted directly over the roofing membrane.

## Our service

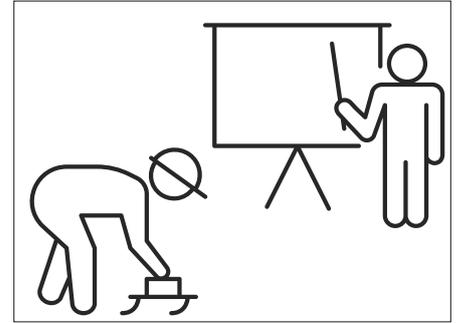
We want our expertise and experience to benefit all KÖSTER partners. Distributing our products through technical consultants ensures that our customers receive the technical support they need. In this way, safe and economical solutions are developed and implemented. This long-term consideration for the interest of our customers is very important to us, which is why technical support is a natural part of our service.



Personal consulting



On-site instruction



Practical and theoretical training

## The KÖSTER Guarantee

### Our Premium guarantee

- Material guarantee of up to 20 years for KÖSTER TPO membranes with a thickness of 2.0 mm
- Material guarantee of up to 10 years for KÖSTER TPO membranes with a thickness of 1.5 and 1.8 mm
- Free material replacement
- Wage compensation for the installation of the Membranes
- Material replacement for other components of the roof assembly possibly damaged
- Wage compensation for other components of the roof assembly possibly damaged

### Our Premium Plus guarantee

- Guarantee with insurance from Allianz Insurance
- Up to 25 years material guarantee for KÖSTER TPO membranes with a thickness of 2.0 mm
- Free material replacement
- Compensation for installation costs
- Replacement of material for any damaged components of the complete roof assembly package
- Reimbursement of wages for the installation of any damaged components of the roof assembly package



**Important:** The guarantees and insurances listed in this brochure do not represent a guarantee or insurance promise. A guarantee / insurance promise on the part of KÖSTER BAUCHEMIE AG must be requested individually for each construction project and approved in writing. The information provided is non-binding and does not release the user from coordinating and checking the products for the respective construction projects, uses and local suitability. The applicable standards, data sheets, legal regulations and the generally recognized rules of technology apply as well as the information in our Technical Data Sheets.

## Building and the Environment

The KÖSTER BAUCHEMIE AG is committed to protecting and preserving our environment. We combine the use of the most modern raw materials and production technologies in connection with constant research and development. This means that most materials are not only solvent-free, but are also designed for minimal environmental impact and maximum safety for the installers. The KÖSTER BAUCHEMIE AG is also a member of the Institute for Building and the Environment, whose members are committed to sustainable construction. The basis for this is the transparent disclosure of all relevant product information, including the life cycle assessment data.

KÖSTER TPO roofing membranes are at the same time ecologically and economically advantageous because of their durability over decades and because of the low maintenance intensity. They protect buildings from water ingress, which is the most common and costly cause of building damage. The Real estate is preserved longer and important resources are saved. In contrast to other roofing membranes, KÖSTER TPO roofing membranes do not release any plasticizers into the environment and can be optimally recycled. They do not become brittle and are therefore more durable. KÖSTER TPO Roofing Membranes are an excellent base for green roofs.



Environmental Product Declaration (EPD)



IBU member



International High School, Orchlön, Mongolia





Green roof, Coeur de Cologne, Köln, Germany



We are there for you – worldwide.

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# KÖSTER

Waterproofing Systems

