ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	KÖSTER BAUCHEMIE AG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-KBC-20240060-CBK1-EN
Issue date	30.07.2025
Valid to	29.07.2030

KÖSTER TPO / TPO F / TPO FR / TPO Aqua

KÖSTER BAUCHEMIE AG

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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KÖSTER
Waterproofing Systems

General Information

KÖSTER BAUCHEMIE AG

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-KBC-20240060-CBK1-EN

This declaration is based on the product category rules:

Plastic and elastomer roofing and sealing sheet systems, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

30.07.2025

Valid to

29.07.2030

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

KÖSTER TPO / TPO F / TPO FR / TPO Aqua

Owner of the declaration

KÖSTER BAUCHEMIE AG
Dieselstraße 1-10
26607 Aurich
Germany

Declared product / declared unit

KÖSTER TPO 2.0 F
The declared product is the TPO 2.0 F from KÖSTER BAUCHEMIE AG. The declared unit refers to 1 m² (2,138 kg). The packaging with 0,034 kg is also included in the calculation, because the product is sold with packaging. The declared unit is indicated in [m²].

Scope:

This EPD applies to 1 m² of the following roofing membranes of different thicknesses: KÖSTER TPO 1.2 / 1.5 / 1.8 / 2.0 / 1.5 F / 1.8 F /2.0 F / 1.2 FR / 1.5 FR / 1.8 FR / 2.0 FR / Aqua 1.5, whereby in Chapter 5 only the values of KÖSTER TPO 2.0 F are declared. The conversion factors for the other variants are listed in the LCA results section.
The life cycle assessment is based on the KÖSTER Bauchemie AG data from the year of production 2023, manufactured in the factory in Aurich in Germany.
The owner of the declaration shall be liable for the underlying information and verification; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data or verification.
The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internally ☒ externally

Angela Fisher,
(Independent verifier)

KÖSTER
Waterproofing Systems

Product

Product description/Product definition

KÖSTER TPO 1.2 / 1.5 / 1.8 / 2.0 / 1.5 F/ 1.8 F / 2.0 F / 1.2 FR / 1.5 FR / 1.8 FR / 2.0 FR / Aqua 1.5 are roofing and sealing membranes made of flexible, thermoplastic polyolefines (FPO/TPO). They can be welded with hot air and, apart from the KÖSTER TPO Aqua, with glass fleece as an internal layer and in some cases with polyester fleece on the underside. The internal glass fleece reinforcement serves as an additional support and thus improves the mechanical properties of the roofing and sealing membrane.In contrast to KÖSTER TPO and KÖSTER TPO FR, KÖSTER TPO F has an additional polyester fleece on the underside and can therefore also be used for adhesion. The KÖSTER TPO 2.0 F was chosen as the reference product as it has the highest environmental impact within the product group and therefore represents a conservative worst-case scenario. The deviations of the other product variants were quantified internally and are below this value.

The product range is subdivided into the following variants: (Note: The designation of 1.2 - 2.0 refers to the effective thickness of the individual products)

- KÖSTER TPO (1.2 / 1.5 / 1.8 / 2.0) with internal glass fleece layer
- KÖSTER TPO (1.5 / 1.8 / 2.0) F with internal glass fleece layer and polyester fleece on the underside
- KÖSTER TPO (1.2 / 1.5 / 1.8 / 2.0) FR with internal glass fleece layer (for higher fire requirements)
- KÖSTER TPO Aqua (1.5) homogenous waterproofing membrane

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration EN 13956:2012 Flexible sheet for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics and / EN 13967:2012+A1:2017 Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics as well as the CE marking.

Application

KÖSTER TPO, KÖSTER TPO F, KÖSTER TPO FR and KÖSTER TPO Aqua roofing and sealing membranes serve to seal unventilated and ventilated flat roofs, inclined roofs, green roofs, patios, balconies, rooftop gardens and underground garages in the event of direct exposure to the weather and with top load.
They can also be used to seal damp rooms, sprinkler containers and ponds.
KÖSTER TPO roofing and sealing membranes can be laid loosely (with top load) or mechanically secured.
KÖSTER TPO F roofing and sealing membranes can be laid loosely (with top load), mechanically secured and bonded over the whole area or in strips.

Technical Data

Designation in accordance with DIN SPEC 20000-201
KÖSTER TPO 1.2 / 1.5 / 1.8 / 2.0 KÖSTER TPO 1.2 FR / 1.5 FR / 1.8 FR / 2.0 FR: DE/E1-FPO-BV-E-GV-1.2 / 1.5 / 1.8 / 2.0
KÖSTER TPO 1.5 F / 1.8 F / 2.0 F: DE/E1-FPO-BV-E-GV-K-PV-1.5 / 1.8 / 2.0

Designation in accordance with DIN/TS 20000-202:
KÖSTER TPO 1.2 / 1.5 / 1.8 / 2.0: BA-FPO-BV-E-GV-1.2 / 1.5 / 1.8 / 2.0
KÖSTER TPO Aqua 1.5: BA-FPO-BV-1.5

Constructional data

Note:
The values for the tensile elongation properties of KÖSTER TPO F result from a different geometry of the test specimen. The remaining results apply to all products.

Name	Value	Unit
Waterproof according to EN 1928 (400kPa/72h)	passed	-
Tensile strain according to EN 12311-2 (Method A) (KÖSTER TPO F)	≥ 50	%
Tensile strength according to EN 12311-2 (Method B)	≥ 400	%
Tensile strength according to EN 12311-2 (Method A) (KÖSTER TPO F)	≥ 1000	N/50mm
Tensile strength according to EN 12311-2 (Method B)	≥ 5	N/mm²
Peel resistance of the seam joint according to EN 12316-2	≥ 400	N/50mm
Shear resistance of the seam joint according to EN12317-2	Failure beyond the overlap	N/50mm
Tear propagation resistance according to EN 12310-2	≥ 350	N
Resistance to shock loads according to EN 12691 (Method A/B)	≥ 300 / ≥ 1000	mm
Artificial ageing according to EN 1297 (1000h)	passed	-
Method for artificial ageing by long term exposure to elevated temperature according to EN 1296, EN 1928 (Method A)	watertight	
Exposure to liquid chemicals, including water according to EN 1847 (Method B)	passed	
Root penetration resistance KÖSTER TPO/TPO F thickness ≥ 1,8mm (FLL-test)	passed	
Folding in the cold according to EN 495-5	≤ -30	°C
Bitumen compatibility according to EN 1548	passed	-

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to
EN 13956:2013-03
Flexible sheets for waterproofing - Plastic and rubbersheets for roof waterproofing - Definitions andcharacteristics.

EN 13967:2012+A1:2017
Flexible sheets for waterproofing -Plastic and rubber damp proof sheets including plasticand rubber basement tanking sheet - Definitions and characteristics

Use is governed by the respective national guideline in Germany:

DIN 18195: 2017-07
Waterproofing of buildings - Vocabulary

DIN 18531: 2017-07
Waterproofing of roofs, Part 1 to Part 4

DIN 18532: 2017-07
Waterproofing of concrete areas trafficable by vehicles, Part 1 to Part 6

DIN 18533: 2017-07
Waterproofing of elements in contact with soil, Part 1 to Part 3

DIN 18534: 2017-07
Waterproofing for indoor applications, Part 1 to Part 6

DIN 18535: 2017-07Waterproofing of tanks and pools, Part 1 to Part 3

DIN SPEC 20000-201:2015-08
Application of construction products in structures - Part 201: Application standard for flexible sheets forwaterproofing according to European productstandards for the use as waterproofing of roofs.

DIN/TS 20000-202: 2020-11Use of building products in construction works - Part 202: Adaptation standard for flexible sheets forwaterproofing according to European standards for useas waterproofing

Base materials/Ancillary materials

Name	Value	Unit
TPO/FPO	84-100	%
Glassfleece	0-5	%
Polyesterfleece (only for KÖSTER TPO 1.5/1.8/2.0 F)	8-11	%

This product/article/at least one partial article contains substances listed in the candidate list (date: June 2025) exceeding 0.1 percentage by mass: no

Manufacture
The production of KÖSTER TPO / FPO roofing and sealing membranes is certified in accordance with DIN EN ISO 9001. The membranes are manufactured on two-nozzleextrusion equipment. The raw material is heated up tothe required temperature in an extruder and introducedinto the process under pressure. The two low-viscosity melt streams can be monitoredby measuring the temperature and pressure of themass. The internal glass fleece insert serves as an additionalsupport and thus improves the mechanical propertiesof the roofing and sealing membrane. The required thickness of the roofing and sealingmembrane is achieved by regulating the melt streamsas they emerge at the ends of the extrusion nozzles. The sheets are cooled down to below 30 °C after theyleave the calendar and before they are wound. Cooling is effected by means of water-cooled rollers. The heated water is cooled in a heat exchanger, fedback into the water cycle and reused.

Delivery status

Packaging
KÖSTER TPO roofing and waterproofing membranes are packed on a wooden pallet with 20 rolls as standard. The wooden pallets can be reused by the customer.

Extraordinary effects

Fire
The declared products are normally flammable. Classification according to DIN EN ISO 11925-2 and DIN EN 13501-1 - Class E. Fire behavior Class Broof(t1) for TPO / TPO F and Broof(t2)/(t3) for TPO FR according to DIN EN 13501-5.

Water
The declared product is resistant to the effects of water. Classification in accordance with DIN EN 1928 (method B).

Reference service life
Condition of Use
For the period of use of the KÖSTER TPO roofing and waterproofing membranes, there are no changes to the material.

Environment and health during use
There is no negative impact on the environment or on the environment or the health of users. There is no known release of emissions from the product into the air, and no information on water.

Service life
With professional installation according to the KÖSTER TPO installation instructions, an expected service life of more than 30 years can be years can be assumed.

Disposal
If there is no possibility for the membranes to be taken back, they can be used for thermal energy generation (incineration) (EU wastecode 170904, mixed construction and demolitionwastes) and stored in proper landfills.

Further information
The product data sheets, safety information and other technical information can be downloaded from thewebsite of KÖSTER BAUCHMIE AG.Homepage: www.koester.eu

LCA: Calculation rules

Declared Unit
The declared product is TPO 2.0 F from KÖSTER BAUCHEMIE AG. The specified unit refers to 1 m² (2.138 kg). The packaging of 0.034 kg is also included in the calculation, as the product is sold with packaging.TPO 2.0F is available in 10.5 m², 21 m² and 30 m² rolls. The declared unit is given in [m²].

Declared unit and mass reference

Name	Value	Unit
Grammage	2.138	kg/m^2
Declared unit	1	m^2
Layer thickness	0.002	m
conversion factor to 1 kg	0,4677	

System boundary
Type of EPD: cradle to factory gate with options. The following information modules are defined as system boundaries in this study:

Production stage (A1- A3):
• A1, Raw material,
• A2, Transport to the manufacturer,
• A3, Production.

End of life (C1- C4):
C1, Dismantling /demolition,
C2, Transport,
C3, Waste treatment,
C4, Disposal.

Reuse, recovery and recycling potential (D)

To accurately record the indicators and environmental impacts of the declared unit, a total of 7 information modules are considered. The information modules A1 to A3 describe the material provision, the transport to the production site, as well as the production processes of the product itself.

The intermediate products are sourced from the European Union. The transport is carried out by truck. The following flow charts illustrate the Underlying production process.

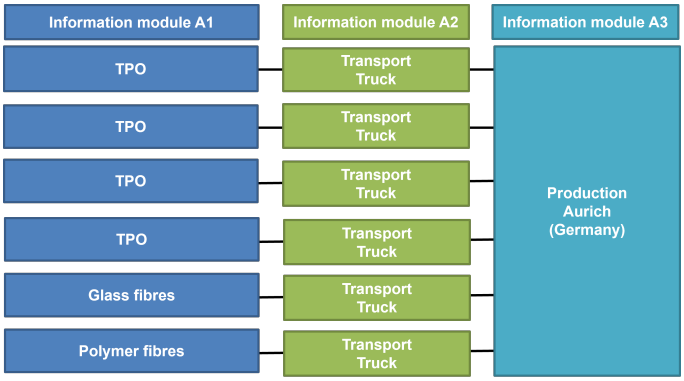

Illustration 1 Information modules A 1 to A3 of the product

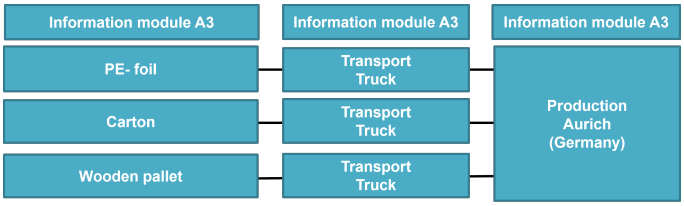

Illustration 2 Information module A3 of the packaging

Information modules C1 to C4 cover dismantling or demolition from the building, transport for waste disposal, waste treatment and disposal of the product. Furthermore, reuse, recovery and recycling potentials are identified in information module D.
of the product itself.

Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Global

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. The background database used for this study is LCA for Experts with the version number: 2024.01

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon
No renewable raw materials are used. Therefore, biogenic carbon is indicated as zero. In the packaging, the following raw material contains biogenic carbon.

Information on describing the biogenic carbon content at factory gate
The values of biogenic carbon are not shown in the results, as A5 is not declared.

Name	Value	Unit
Carton	0,002	kg C
Wooden pallet	0,011	kg C

The packaging of 0.034kg is made up of the following materials:
PE-foil 0.001kg
Cardboard 0.006 kg
Wooden pallet 0.027kg

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

End of life (C1-C4)
In the C1 information module, the deconstruction of the product from the building is calculated. Deconstruction is carried out by means of an electric power tool. The electrical energy consumption for the tool is assumed to be 1,07 MJ for the declared unit. The electricity consumption is calculated with a transport route of the waste of the declared unit from the deconstruction from the building to the recycling plant is described. The average transport distance is assumed to be 50 km.
In the information module C3, the waste treatment of the declared unit from the deconstruction from the building is calculated. The first step of this process chain is the shredding of the product with 3% loss, what results from the background data RER: Construction waste treatment plant. This data set contains all energy consumption for the shredding process and the landfilling of material losses.

Name	Value	Unit
Collected as mixed construction waste	2.138	kg
Energy recovery	2.077	kg
Landfilling	0.047	kg

The EOL scenario assumes 100% thermal recovery of the declared unit. Process-related shredder residues are sent to landfill.

Reuse, recovery and/or recycling potentials (D), relevant scenario information
In information module D the energy credits from the waste for thermal recovery of the polymers are calculated. The electrical and thermal credits are calculated with a European mix.

Name	Value	Unit
Electrical energy	7,81	MJ
Thermal ernergy	17,90	MJ

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LCA: Results

DE: Residual grid mix Sphera: 1 kWh = 8,47E-01 GWP - total [kg CO2 eq.]
DE: Thermal energy from natural gas Sphera : 1 MJ =6,97E-02
GWP - total [kg CO2 eq.]

Products and conversion factor
TPO 1.8 F / TPO 1.5 F
0,88 / 0,77

TPO 2.0 / TPO 1.8 / TPO 1.5 / TPO 1.2
0,90 / 0,81 / 0,69 / 0,56

TPO 2.0 FR / TPO 1.8 FR / TPO 1.5 FR / TPO 1.2 FR
0,99 / 0,87 / 0,75 / 0,58

TPO Aqua 1.5
0,70

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m^2 KÖSTER TPO 2.0 F

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Global Warming Potential total (GWP-total)	kg CO_2 eq	5.74E+00	1.49E-01	9.79E-03	4.66E+00	7.01E-04	-2.34E+00
Global Warming Potential fossil fuels (GWP-fossil)	kg CO_2 eq	5.7E+00	1.49E-01	9.63E-03	4.66E+00	6.97E-04	-2.34E+00
Global Warming Potential biogenic (GWP-biogenic)	kg CO_2 eq	3.1E-02	3.36E-05	0	1.48E-04	0	-1.89E-03
Global Warming Potential luluc (GWP-luluc)	kg CO_2 eq	4.05E-03	2.23E-05	1.59E-04	1.55E-04	4.18E-06	-2.27E-04
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC11 eq	1.66E-11	1.64E-12	9.56E-16	7.96E-13	1.9E-15	-1.2E-11
Acidification potential of land and water (AP)	mol H^+ eq	8.75E-03	3.48E-04	8.33E-06	1.4E-03	4.95E-06	-3.14E-03
Eutrophication potential aquatic freshwater (EP-freshwater)	kg P eq	7.31E-06	7.79E-08	4.05E-08	2.24E-07	1.59E-09	-6.41E-07
Eutrophication potential aquatic marine (EP-marine)	kg N eq	2.52E-03	5.83E-05	2.28E-06	4.36E-04	1.27E-06	-6.96E-04
Eutrophication potential terrestrial (EP-terrestrial)	mol N eq	2.71E-02	6.25E-04	2.95E-05	6.68E-03	1.4E-05	-7.56E-03
Formation potential of tropospheric ozone photochemical oxidants (POCP)	kg NMVOC eq	9.41E-03	1.74E-04	7.8E-06	1.14E-03	3.9E-06	-2.11E-03
Abiotic depletion potential for non fossil resources (ADPE)	kg Sb eq	4.07E-07	7.04E-09	8.07E-10	1.29E-08	4.52E-11	-7.9E-08
Abiotic depletion potential for fossil resources (ADPF)	MJ	1.66E+02	2.76E+00	1.24E-01	1.31E+00	9.19E-03	-4E+01
Water use (WDP)	m^3 world eq deprived	2.91E-01	8.5E-03	1.41E-04	4.77E-01	7.95E-05	-6.36E-02

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m^2 KÖSTER TPO 2.0 F

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier (PERE)	MJ	8.6E+00	3.93E-01	1.05E-02	3.94E-01	1.61E-03	-2.91E+00
Renewable primary energy resources as material utilization (PERM)	MJ	5E-01	0	0	0	0	0
Total use of renewable primary energy resources (PERT)	MJ	9.39E+00	3.93E-01	1.05E-02	3.94E-01	1.61E-03	-2.91E+00
Non renewable primary energy as energy carrier (PENRE)	MJ	1.02E+02	2.76E+00	1.24E-01	6.22E+01	9.19E-03	-4E+01
Non renewable primary energy as material utilization (PENRM)	MJ	6.49E+01	0	0	-6.09E+01	0	0
Total use of non renewable primary energy resources (PENRT)	MJ	1.67E+02	2.76E+00	1.24E-01	1.31E+00	9.19E-03	-4E+01
Use of secondary material (SM)	kg	3.76E-02	0	0	0	0	0
Use of renewable secondary fuels (RSF)	MJ	0	0	0	0	0	0
Use of non renewable secondary fuels (NRSF)	MJ	0	0	0	0	0	0
Use of net fresh water (FW)	m^3	1.87E-02	5.54E-04	1.18E-05	1.12E-02	2.43E-06	-4.11E-03

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m^2 KÖSTER TPO 2.0 F

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	2.29E-08	3.91E-10	4.01E-12	8.96E-10	2.31E-12	-3.21E-09

Non hazardous waste disposed (NHWD)	kg	5.23E-02	6.84E-04	1.93E-05	9.95E-02	4.66E-02	-1.02E-02
Radioactive waste disposed (RWD)	kg	1.69E-03	3.57E-04	1.6E-07	3.52E-05	9.51E-08	-2.61E-03
Components for re-use (CRU)	kg	0	0	0	0	0	0
Materials for recycling (MFR)	kg	2.89E-01	0	0	0	0	0
Materials for energy recovery (MER)	kg	0	0	0	0	0	0
Exported electrical energy (EEE)	MJ	0	0	0	7.81E+00	0	0
Exported thermal energy (EET)	MJ	0	0	0	1.79E+01	0	0

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 m^2 KÖSTER TPO 2.0 F

Parameter	Unit	A1-A3	C1	C2	C3	C4	D
Incidence of disease due to PM emissions (PM)	Disease incidence	ND	ND	ND	ND	ND	ND
Human exposure efficiency relative to U235 (IR)	kBq U235 eq	ND	ND	ND	ND	ND	ND
Comparative toxic unit for ecosystems (ETP-fw)	CTUe	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (carcinogenic) (HTP-c)	CTUh	ND	ND	ND	ND	ND	ND
Comparative toxic unit for humans (noncarcinogenic) (HTP-nc)	CTUh	ND	ND	ND	ND	ND	ND
Soil quality index (SQP)	SQP	ND	ND	ND	ND	ND	ND

Disclaimer 1 – for the indicator 'Potential Human exposure efficiency relative to U235'. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators 'abiotic depletion potential for non-fossil resources', 'abiotic depletion potential for fossil resources', 'water (user) deprivation potential, deprivation-weighted water consumption', 'potential comparative toxic unit for ecosystems', 'potential comparative toxic unit for humans – cancerogenic', 'Potential comparative toxic unit for humans - not cancerogenic', 'potential soil quality index'. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

This EPD was created using a software tool.

References

DIN EN ISO 14025
DIN EN /ISO 14025:2011-10/, Environmental labels and declarations - Type III Environment Declarations - Principles and Procedures

DIN EN ISO 14044
DIN EN ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidance (ISO 14044:2006); German and English version EN ISO 14044:2006

EN 15804+A2
EN 15804:2019-04+A2, Sustainability of construction works – Environmental product declarations – Basic rules for the product category of construction products.

EN/TR 15941
CEN/TR 15941:2010-03: Sustainability of Buildings – Environmental Product Declarations- M methods for the selection and use of generic data; German version CEN/TR

ecoinvent 3.9.1
Hintergrunddatenbank: ecoinvent 3.9.1
Zürich: ecoinvent (Hrsg.)
http://www.ecoinvent.org
(15.07.2024)

IBU 2021
Institut Bauen und Umwelt e.V.: General instructions for the EPD program of the Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021 www.ibu-epd.com

Product Category Rules Construction Products Part A
Product Category Rules for Construction Products and Services - Calculation Rules for Ecology and Requirements for the Background Report V1.4, Institut Bauen und Umwelt e.V., 04.2024.

Product Category Rules Part B
Plastic and elastomer roofing and sealing sheet systems, 01.08.2021

Sphera
LCA for Experts: Holistic balancing
Leinfelden-Echterdingen; Sphera Solution GmbH (Hrsg.)

Regulation (EU) 305/2011
Regulation (EU) No. 305/2011 of the European Parliament and of the Council of March 9, 2011 establishing laying down harmonized conditions for the marketing of construction products and repealing Council Directive of Council Directive 89/106/EEC (Text with EEA relevance).

EN 13956
DIN EN 13956:2013-03, Flexible sheet for waterproofing - Plastic and rubber sheets for roof waterproofing - Definitions and characteristics

EN 13967
DIN EN 13967:2012+A1:2017, Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics

EN 495-5
Flexible sheets for waterproofing - Determination of foldability at low temperature - Part 5: Plastic and rubber sheets for roof waterproofing

EN 1107-2
DIN EN 1107-2:2001-04, Flexible sheets for waterproofing - Determination of dimensional stability - Part 2: Plastic and rubber sheets for roof waterproofing

EN 1297

DIN EN 1297:2004-12, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Method of artificial ageing by long-term exposure to the combination of UV radiation, elevated temperature and water

EN 1548
DIN EN 1548:2007-11, Flexible sheets for waterproofing - Plastic and rubber sheets for roof waterproofing - Method for exposure to bitumen

EN 1844
DIN EN 1844:2013-08, Flexible sheets for waterproofing - Determination of resistance to ozone - Plastic and rubber sheets for roof waterproofing

EN 1847
DIN EN 1847:2010-04, Flexible sheets for waterproofing - Plastics and rubber sheets for roof waterproofing - Methods for exposure to liquid chemicals, including water

EN 1928
DIN EN 1928:2000-07, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness

ISO 9001
DIN EN ISO 9001:2015-11, Quality management systems - Requirements (ISO 9001:2015)

ISO 11925 -2
DIN EN ISO 1925-2:2020-07, Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2020)

EN 12311-2
DIN EN 12311-2:2013-11, Flexible sheets for waterproofing - Determination of tensile properties - Part 2: Plastic and rubber sheets for roof waterproofing

EN 12316-2
DIN EN 12316-2:2013-08, Determination of peel resistance of joints - Part 2: Plastic and rubber sheets for roof waterproofing

EN 12317-2
DIN EN 12317-2:2010-12, Determination of shear resistance of joints - Part 2: Plastic and rubber sheets for roof waterproofing

EN 12691
DIN EN 12691:2018-05, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to impact

EN 12310-2
DIN EN 12310-2:2019-02, Flexible sheets for waterproofing - Determination of resistance to tearing - Part 2: Plastic and rubber sheets for roof waterproofing

EN 13501-1
DIN EN 13501-1:2019-05, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

EN 13501-5
DIN EN 13501-5:2016-12, Fire classification of construction products and building elements - Part 5: Classification using data from external fire exposure to roofs tests

EN 13948
DIN EN 13948:2008-01, Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to root penetration

DIN 18531-1
DIN 18531-1:2017-07, Waterproofing of roofs - Sealings for non-utilized roofs - Part 1: Terms and definitions, requirements, design principles

DIN 18531-2
DIN 18351-2:2017-07, Waterproofing of roofs - Sealings for non-utilized roofs - Part 2: Materials

DIN 18531-3
DIN 18531-3:2017-07, Waterproofing of roofs - Sealings for non-utilized roofs - Part 3: Design, handling of materials, execution of sealings

DIN 18531-4
DIN 18531-4:2017-07, Waterproofing of roofs - Sealings for non-utilized roofs - Part 4: Maintenance

DIN 18531-5
DIN 18531-5:2017-07, Waterproofing of roofs, balconies and walkways – Part 5: Balconies and walkways

DIN 18195
DIN 18195:2017-07, Waterproofing of buildings - Vocabulary

DIN 18532
DIN 18532:2017-07, Waterproofing of concrete areas trafficable by vehicles

DIN 18533
DIN 18533:2017-07, Waterproofing of elements in contact with soil

DIN 18534
DIN 18534:2017-07, Waterproofing for indoor applications

DIN 18535
DIN 18535:2017-07, Waterproofing of tanks and pools

DIN SPEC 20000-201
DIN SPEC 20000-201:2018-08, Application of building products in structures – Part 201: Adaptation standard for flexible sheets for waterproofing according to European standards for use as waterproofing of roofs

DIN/TS 20000-202
DIN/TS 20000-202:2020-11, Application of building products in structures – Part 202: Adaptation standard for flexible sheets for waterproofing according to European standards for use as waterproofing

FLL
Research Association for Landscape Development Landschaftsbau (FLL guideline):Roof greening guideline 2008: FLL method for testing the root resistance of membranes and coatings for green roofs.

KÖSTER TPO installation instructions

List of candidates
(date: June 2025)

EU waste code 170904
Waste List Ordinance of December 10, 2001 (BGBl. I p. 3379), last amended by Art. 1 of the Ordinance of June 30, 2020 (BGBl. I p. 1533)

The literature referred to in the Environmental Product Declaration must be listed in full.Standards already fully quoted in the EPD do not need to be listed here again.
The current version of PCR Part A and PCR Part B of the PCR document on which they are based must be referenced.

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