

# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

**Product name:**  
**FORST® BOR PE Membrane**



**Manufacturer:**  
**GRILTEX POLSKA Sp. z o.o.**



Published on 31 December 2025  
Valid until 31 December 2030

# GENERAL INFORMATION

## EPD OWNER

<b>Manufacturer / EPD Holder</b>	GRILTEX POLSKA Sp. z o.o.
<b>Address</b>	Obornicka 7, Złotkowo, 62-002 Suchy Las, Poland
<b>Contact details</b>	<a href="tel:+48616553751">+48 61 655 37 51</a> <a href="mailto:biuro@griltex.pl">biuro@griltex.pl</a>
<b>Website</b>	<a href="https://www.griltex.pl/">https://www.griltex.pl/</a>

## PRODUCT IDENTIFICATION

<b>Product name</b>	FORST® BOR PE Membrane
<b>Place(s) of production</b>	POLAND

## EPD INFORMATION

<b>EPD Polska program operator</b>	Multicert Sp. z o.o. Ul. Mydlarska 47, 04-690 Warszawa, Poland <a href="http://www.epd.org.pl">www.epd.org.pl</a> , <a href="mailto:epd@epd.org.pl">epd@epd.org.pl</a>
<b>EPD standards</b>	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
<b>Product category rules</b>	The CEN standard EN 15804+A2 serves as the core PCR (Product Category Rules).
<b>EPD verification</b>	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
<b>EPD verifier</b>	Izabela Sztamberek-Sochan, Ph.D.
<b>EPD number</b>	EPD-P 12.12.2025
<b>Registration:</b>	EPD Polska <a href="http://www.epd.org.pl">www.epd.org.pl</a>
<b>Publishing date</b>	31 December 2025
<b>EPD valid until</b>	31 December 2030
<b>Reasons for performing LCA</b>	B2B
<b>Accountability</b>	The EPD Holder is responsible for the information provided and evidence. Multicert Sp. z o.o. does not hold responsibility for the manufacturer information, life cycle assessment data nor supporting evidence.

EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

## COMPANY INFORMATION

### HOLDER OF THE EPD

GRILTEX POLSKA Sp. z o.o.  
ul. Obornicka 7  
Złotkowo, 62-002 Suchy Las  
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### COMPANY PROFILE

**GRILTEX POLSKA Sp. z o.o.** is a Polish manufacturer of geosynthetic and waterproofing materials, headquartered in Złotkowo near Poznań and operating within the wider Griltex Group, which originated in Western Europe. The Griltex brand was established in the 1960s and has developed extensive expertise in plastics processing and geotechnical solutions. The company has been active in Poland since the 1990s and is regarded as one of the early domestic producers of geosynthetics. Over time, it has built its position on technical reliability, product development and cooperation with the civil engineering and environmental sectors.

The company specialises in the production of geomembranes, drainage and insulation membranes, geotextiles and customised sealing systems used in construction, infrastructure and environmental protection projects. Its products are applied in foundation protection, earthworks, water management and underground engineering. In addition to manufacturing, GRILTEX POLSKA provides technical support related to material selection, installation methods and performance requirements in geotechnical applications. The company operates a modern manufacturing facility equipped with extrusion, forming and testing capabilities, supported by internal laboratory control.

Quality management is maintained in accordance with ISO 9001, with documented procedures for process monitoring, product traceability and performance testing. Environmental responsibility forms part of the company's operational strategy, reflected in the use of recyclable materials, resource efficiency and the development of long-lasting geosynthetic solutions aimed at protecting soil and groundwater. GRILTEX POLSKA supplies both domestic and international markets, serving contractors, designers and public authorities involved in infrastructure, transportation and landscape engineering. Through continuous technical development and sector-specific expertise, the company supports the durable application of geosynthetics in demanding engineering conditions.

# PRODUCT INFORMATION

## PRODUCT DESCRIPTION

FORST® BOR PE is a polyethylene waterproofing membrane used for damp-proofing and protection of underground building structures. The product is intended mainly for use in foundations and basement walls to protect building structures against capillary rise of moisture and groundwater, as well as in woodwork.

The product is manufactured from recycled low-density polyethylene and supplied in roll form.

The membrane has a structured surface that increases mechanical resistance and reduces the risk of sliding of mortar and bricks during and after installation and thus increasing service life.

## PRODUCT APPLICATION

FORST® BOR PE membrane is used as a damp-proof and protective layer in underground parts of buildings, in wall- and woodwork. The membrane is applied in foundation and basement wall constructions to protect building structures against capillary rising moisture and groundwater.

Typical applications include:

- horizontal damp-proofing of foundations and foundation slabs
- vertical damp-proof protection of basement and foundation walls
- protective layer for underground waterproofing systems
- separation layer between soil and building structures

This damp proof course is also applicable as a radon barrier in the foundations.

The membrane can be installed both horizontally and vertically depending on the design of the building envelope and waterproofing system.

Due to the chemical resistance of polyethylene, the product is suitable for use in direct contact with soil and mineral construction materials. It is resistant to microorganisms, fungi and roots typically present in the ground environment.

## PRODUCT STANDARDS

FORST® BOR PE membranes are manufactured and tested in accordance with relevant European standards for flexible sheets used in waterproofing and damp proofing applications, including:

- EN 14909:2006 – Flexible sheets for waterproofing – Plastic and rubber damp proof courses – Definitions and characteristics.

The product is intended for use as a damp-proof membrane in underground parts of buildings and is suitable for installation in contact with soil, concrete and typical mineral backfill materials.

## PRODUCT RAW MATERIAL COMPOSITION

Recycled PE (rPE)	100%
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## ADDITIONAL TECHNICAL INFORMATION

FORST® BOR PE membranes are supplied in roll form and are designed for damp-proofing applications in underground parts of buildings.

According to the product documentation, typical characteristics of the polyethylene membrane include:

Parameter	Typical value
Surface mass	285-1000 g/m <sup>2</sup>
Material thickness	0,3-1,0 mm
Roll length	20-50 m
Roll width	0,07-1,5 m

The structured surface of the membrane improves mechanical resistance and facilitates installation.

Polyethylene exhibits high resistance to biological degradation and to chemical substances commonly present in soil. The membrane therefore provides durable protection of foundation walls and underground building structures against moisture.

The product is supplied in rolls and installed using conventional construction methods appropriate for foundation waterproofing membranes.

Technical documentation and installation guidelines are available from the manufacturer upon request.

## SUBSTANCES AND REACH DECLARATION

FORST® BOR PE does not contain substances of very high concern (SVHC) listed under Regulation (EC) No 1907/2006 (REACH) in concentrations exceeding 0.1% (1000 ppm). The product is not classified as hazardous to human health or the environment under applicable EU legislation.

### Declared Unit

The declared unit of this Environmental Product Declaration is 1 kg of FORST® BOR PE membrane.

# PRODUCT LIFE-CYCLE

## RAW MATERIALS ACQUISITION AND TRANSPORT (A1, A2)

Module A1 covers the supply of raw materials for the FORST® BOR PE membranes. The main input is post-consumer recycled PE (rPE) regranulate as well as small amounts of packaging auxiliaries. These materials are purchased from suppliers in Europe and delivered to Griltex.

Module A2 includes the transport of raw materials from suppliers to the production facility. Transport is carried out mainly by road using diesel trucks (>16 t, EURO 6). The model reflects a representative lorry transport distance ( $\approx$  950 km per kg of product mass handled).

## MANUFACTURING (A3)

Module A3 comprises the production of FORST® BOR PE membranes at the manufacturer's site. Recycled polyethylene (rPE) is first screened and gravimetrically dosed according to the required formulation. The material is then plastified in the extruder and discharged through a flat die to form a continuous polyethylene sheet.

The hot sheet is subsequently shaped to obtain the characteristic structured surface of the membrane, which improves mechanical resistance and reduces the risk of tearing during installation and service life. The sheet is then cooled to achieve dimensional stability and transported to downstream conversion operations.

In the next step, the membrane is slit to the required width and wound into rolls. Production trims and off-spec material are collected, ground and returned to the production process as internal regrind.

Energy use in this module is based on site-specific data per declared unit and includes electricity from the grid and on-site photovoltaic installation as well as natural gas used for process heating.

Finished membranes are wound into rolls of defined width and length, labelled for traceability and subjected to quality control, including verification of surface mass, thickness and dimensional tolerances. The rolls are then packaged, palletized and prepared for shipment.

## TRANSPORT TO THE BUILDING SITE (A4)

Distribution of finished products is modelled using the 2025 logistics mix per declared unit (1 kg), combining road transport by EURO 6 lorries and sea container shipping.

## END OF LIFE (C1, C2, C3, C4, D)

Module C1. At end of life, membranes are removed using standard site practice during refurbishment/demolition. Removal requires only manual handling without specialized equipment or auxiliary materials. Energy consumption and emissions per declared unit (1 kg) fall below the 1% cut-off threshold and are reported as zero.

Module C2. After dismantling, post-use membranes are transported by lorry (>16 t, EURO 6) to waste-management facilities; a 50 km one-way distance is assumed.

Module C3. Mechanical pre-treatment (sorting and size reduction) is modelled prior to routing post-use membranes to downstream treatment. The recycling and energy recovery shares (25% and 50%, respectively) are parameterised using PE data for construction and demolition streams reported by the European Recycling Industries' Confederation (EuRIC). Exported energy from incineration is recorded as EEE/EET in C3 (inventory indicators only), with the corresponding avoided burdens reported in Module D. Given that the FORST® BOR PE membrane is produced from recycled PE, no benefits are assigned to the recycled share at end-of-life, consistent with the net-scrap approach.

Module C4. Final disposal of the remaining 25% of product mass in sanitary landfill is modelled, with associated emissions reported in this module.

Module D. Loads and benefits beyond the system boundary associated with energy recovered at end of life are reported. Exported electricity (EEE) and heat (EET) are modelled as avoided grid electricity and natural-gas-based heat, respectively. No benefits are reported for the 25% routed to material recycling because the LCA applies the cut-off / net-scrap approach in accordance with EN 15804+A2 Annex D. The recycled content at input is  $MMR_{in} = 0.972$  kg per 1 kg declared unit (DU), while the end-of-life material sent to recycling is  $MMR_{out} = 0.25$  kg per 1 kg DU. The resulting net output is  $\leq 0$ ; therefore no material-substitution credits are reported in Module D. Module D includes only energy recovery credits from incineration, as applicable.

# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

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Reference period	year 2025
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### DECLARED UNIT

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Declared unit	1 kg
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Mass per declared unit	1 kg
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Scope: LCA results are reported for a declared unit of 1 kg of the average product manufactured in 2025. No functional unit (FU) or reference service life (RSL) is declared, as use-stage modules (B1–B7) are not declared.

Conversion to 1 m<sup>2</sup>: Results per 1 m<sup>2</sup> = Results per 1 kg × basis weight [kg/m<sup>2</sup>].

### BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

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Biogenic carbon content in product, kg C	0
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Biogenic carbon content in packaging, kg C	0
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## SYSTEM BOUNDARY

The scope of the EPD is "cradle to gate with options". The modules A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Distribution), C1 (Deconstruction), C2 (Waste Transport), C3 (Waste Processing), C4 (Waste Disposal) and D (Avoided burdens) are included in the study.

Product stage		Assembly stage			Use stage							End of life stage				Beyond the system boundaries
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MNR	MNR	MNR	MNR	MNR	MNR	MNR	X	X	X	X	X
Raw materials	Transport	Manufacturing	Distribution	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction	Waste transport	Waste processing	Disposal	Benefits beyond system boundary

Modules not declared = MND. Modules not relevant = MNR.

## CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the *EN 15804:2012+A2:2019*. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes which data are available for are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, and distribution.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy, and water use related to company management and sales activities are excluded.

## ESTIMATES AND ASSUMPTIONS

This LCA study has been conducted in accordance with the applicable methodological principles, including performance metrics, system boundaries, data quality requirements, allocation procedures, and rules for data inclusion and exclusion. The key assumptions and estimates applied in the modelling are outlined below:

Module A1: A 100% mass balance approach was applied to all raw-material inputs based on manufacturer data. The membrane is produced from post-consumer recycled PE (rPE) regranulate. Upstream impacts are modelled using ecoinvent 3.9.1 (cut-off) datasets. The study applies the cut-off / net-scrap approach; no Module-D credits are claimed for recycled content.

Module A2: Average supplier-to-plant transport distances were calculated from supplier locations and allocated to the declared unit, assuming road freight (lorry >16 t, EURO 6) and a representative regional distance of ~950 km one-way.

Module A3: Energy inputs were included based on site-specific 2025 consumption at the manufacturing facility including electricity from grid and on-site PV generation and process heat from natural gas.

On-site water use is negligible at the foreground level; background water is included via database datasets. Internal production scraps (start-up, trims, off-spec) are re-ground and returned to the process in a closed loop (no MFR/MER reporting; no credits).

Module A4. Distribution is modelled using the 2025 logistics mix per declared unit (1 kg), comprising road freight by EURO 6 lorries—~630 kg·km (16–32 t), ~19 kg·km (7.5–16 t), and ~62 kg·km (3.5–7.5 t)—together with sea container shipping of ~164 kg·km.

Module C3: Mechanical pre-treatment (sorting/size reduction) is assumed prior to routing post-use membranes to downstream options. The scenario applies 25% material recycling and 50% incineration with energy recovery (with EEE/EET recorded as inventory indicators only in C3), parameterised using PE data from construction and demolition streams reported by EuRIC; the remaining share is treated in C4.

Module C4: 25% of product mass is disposed of in sanitary landfill, with associated emissions modelled using EU/PL datasets.

Module D: Environmental credits are reported only for energy recovered in C3: exported electricity substitutes grid electricity and exported heat substitutes natural-gas boiler heat. No credits are assigned to the recycled share at end-of-life, in line with the net-scrap approach.

## **ALLOCATION**

Allocation follows EN 15804+A2. Foreground inputs/outputs for 2025 were inventoried for the full product portfolio and allocated on a mass basis to the declared unit (1 kg membrane) because resources and processing steps are common across variants. Internal regrind remains within A3 and is accounted for via process yields (no Module-D credits).

## **DATA QUALITY**

For foreground data, the LCA study relies on high-quality primary data gathered by Griltex for the year 2025 (energy meters, materials procurement, transport distances, production volumes). Background data are taken from ecoinvent 3.9.1 (cut-off), accessed in openLCA; datasets are recent, documented, and consistent with EF 3.1 impact assessment. Electricity in A3 reflects the Emission Factors for Electricity in Poland reported in December 2025 by KOBiZE - the National Centre for Emissions Management in Poland.

## **GEOGRAPHIC REPRESENTATIVENESS**

The specified land or region where the product system is manufactured and managed is Poland, Europe.

# ENVIRONMENTAL IMPACT DATA: FORST® BOR PE Membrane

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
GWP-Total	kg CO2 eq.	7,16E-01	1,79E-01	4,93E-01	1,43E-01	MND	0,00E+00	1,62E-02	1,61E+00	3,19E-02	-1,69E+00
GWP-fossil	kg CO2 eq.	6,52E-01	1,79E-01	4,90E-01	1,43E-01	MND	0,00E+00	1,62E-02	1,61E+00	3,19E-02	-1,69E+00
GWP-biogenic	kg CO2 eq.	6,30E-02	1,60E-04	2,65E-03	1,30E-04	MND	0,00E+00	1,48E-05	-1,90E-04	2,36E-05	-4,43E-03
GWP-luluc	kg CO2 eq.	7,40E-04	8,84E-05	1,40E-04	7,16E-05	MND	0,00E+00	7,98E-06	6,62E-05	2,27E-06	-3,60E-04
ODP	kg CFC-11 eq.	8,75E-09	3,90E-09	2,68E-09	3,11E-09	MND	0,00E+00	3,52E-10	1,28E-09	6,95E-11	-4,93E-08
AP	mol H+ eq.	2,31E-03	3,90E-04	3,42E-03	3,60E-04	MND	0,00E+00	3,53E-05	4,50E-04	2,15E-05	-5,43E-03
EP-freshwater	kg P eq.	2,30E-04	1,27E-05	5,70E-04	1,02E-05	MND	0,00E+00	1,15E-06	1,41E-05	3,99E-07	-7,90E-04
EP-marine	kg N eq.	6,90E-04	9,87E-05	5,00E-04	8,92E-05	MND	0,00E+00	8,92E-06	2,00E-04	1,20E-04	-9,40E-04
EP-terrestrial	mol N eq.	5,37E-03	1,00E-03	4,36E-03	9,20E-04	MND	0,00E+00	9,06E-05	1,81E-03	8,46E-05	-8,80E-03
POCP	kg NMVOC eq.	1,96E-03	6,10E-04	1,28E-03	5,10E-04	MND	0,00E+00	5,49E-05	5,50E-04	3,65E-05	-3,55E-03
ADPE (disc.2)	kg Sb eq.	1,94E-06	4,17E-07	1,60E-07	3,40E-07	MND	0,00E+00	3,76E-08	2,10E-07	3,52E-09	-6,71E-07
ADPF (disc.2)	MJ, (NCV)	9,23E+00	2,56E+00	5,66E+00	2,04E+00	MND	0,00E+00	2,31E-01	1,09E+00	6,48E-02	-2,30E+01
WDP (disc.2)	m3 World eq.	2,07E-01	1,27E-02	1,02E-01	1,02E-02	MND	0,00E+00	1,15E-03	6,28E-02	3,70E-04	-1,75E-01
Acronyms	GWP-total – Climate change, total global warming potential; GWP-fossil – Climate change, fossil fuels; GWP-biogenic – Climate change, biogenic carbon; GWP-luluc – Climate change, land use and land use change; ODP – Ozone layer depletion; AP – Acidification of terrestrial and freshwater environments; EP-freshwater – Eutrophication, freshwater; EP-marine – Eutrophication, marine; EP-terrestrial – Eutrophication, terrestrial; POCP – Photochemical ozone formation (smog formation); ADPE – Abiotic depletion, minerals and metals; ADPF – Abiotic depletion, fossil fuels; WDP – Water scarcity (water use deprivation potential); NCV - net calorific value.										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PM	Disease Incidence	3,05E-08	1,06E-08	5,88E-09	8,17E-09	MND	0,00E+00	9,63E-10	5,63E-09	4,49E-10	-1,24E-08
IRP (disc.1)	kBq U235 eq.	1,29E-01	3,46E-03	1,58E-02	2,87E-03	MND	0,00E+00	3,10E-04	3,61E-03	8,98E-05	-4,14E-02
ETP-fw (disc.2)	CTUe	2,72E+00	1,26E+00	1,42E+00	1,01E+00	MND	0,00E+00	1,13E-01	6,65E-01	4,79E-02	-2,66E+00
HTP-c (disc.2)	CTUh	5,32E-10	8,01E-11	1,49E-10	6,40E-11	MND	0,00E+00	7,24E-12	1,46E-10	1,74E-12	-3,84E-10
HTP-nc (disc.2)	CTUh	6,72E-09	1,57E-09	5,32E-09	1,24E-09	MND	0,00E+00	1,42E-10	3,01E-09	6,68E-11	-9,02E-09
SQP (disc.2)	Dimensionless	4,65E+00	1,53E+00	1,16E+00	1,17E+00	MND	0,00E+00	1,39E-01	7,27E-01	1,45E-01	-1,92E+00
Acronyms	PM – Particulate matter emissions (potential incidence of disease); IRP – Ionising radiation, human health exposure potential; ETP-fw – Ecotoxicity, freshwater; HTP-c – Human toxicity, cancer effects; HTP-nc – Human toxicity, non-cancer effects; SQP – Land use related impacts, soil quality.										
Disclaimer 1	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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator										
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.										

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
PERE	MJ, (NCV)	1,12E+00	4,01E-02	5,02E-01	3,29E-02	MND	0,00E+00	3,61E-03	5,02E-02	1,19E-03	-8,49E-01
PERM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ, (NCV)	1,12E+00	4,01E-02	5,02E-01	3,29E-02	MND	0,00E+00	3,61E-03	5,02E-02	1,19E-03	-8,49E-01
PENRE	MJ, (NCV)	9,23E+00	2,56E+00	5,66E+00	2,04E+00	MND	0,00E+00	2,31E-01	1,09E+00	6,48E-02	-2,30E+01
PENRM	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ, (NCV)	9,23E+00	2,56E+00	5,66E+00	2,04E+00	MND	0,00E+00	2,31E-01	1,09E+00	6,48E-02	-2,30E+01
SM	kg	1,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ, (NCV)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	8,24E-03	4,20E-04	1,45E-02	3,40E-04	MND	0,00E+00	3,80E-05	1,17E-03	7,02E-05	-2,04E-02
Acronyms	PERE – Use of renewable primary energy as energy carriers; PERM – Use of renewable primary energy resources as raw materials; PERT – Total use of renewable primary energy resources (PERE + PERM); PENRE – Use of non-renewable primary energy as energy carriers; PENRM – Use of non-renewable primary energy resources as raw materials; PENRT – Total use of non-renewable primary energy resources (PENRE + PENRM); SM – Use of secondary material; RSF – Use of renewable secondary fuels; NRSF – Use of non-renewable secondary fuels; FW – Net use of fresh water; NCV - net calorific value.										

## OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	2,50E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	5,00E-01	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	3,22E+00	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	0,00E+00	0,00E+00	1,29E+01	0,00E+00	0,00E+00
Acronyms	CRU – Components for re-use; MFR – Materials for recycling; MER – Materials for energy recovery; EEE – Exported electrical energy; EET – Exported thermal energy.										

## WASTE

Impact category	Unit	A1	A2	A3	A4	A5 B1-B7	C1	C2	C3	C4	D
HWD	kg	2,42E-05	1,62E-05	4,34E-06	1,29E-05	MND	0,00E+00	1,46E-06	5,29E-06	3,18E-07	-7,07E-05
NHWD	kg	1,97E-03	7,22E-05	8,58E-05	5,87E-05	MND	0,00E+00	6,51E-06	1,70E-04	2,50E-01	-3,50E-04
RWD	kg	3,30E-05	8,40E-07	3,87E-06	7,00E-07	MND	0,00E+00	7,55E-08	9,11E-07	2,16E-08	-1,04E-05
Acronyms	HWD – Hazardous waste disposed; NHWD – Non-hazardous waste disposed; RWD – Radioactive waste disposed.										

## SCENARIO DOCUMENTATION

### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Emission Factors for Electricity in Poland reported in December 2025 by KOBiZE - the National Centre for Emissions Management in Poland.
Electricity CO2e / kWh	0,701 kg CO2e / kWh

## BIBLIOGRAPHY

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ISO 14040:2006 Environmental management – Life cycle assessment – Principles and frameworks.

ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

EN 15978:2011 Sustainability of construction works – Assessment of environmental performance of buildings – Calculation method.

ecoinvent Association (2022). ecoinvent database v3.9.1, system model: Allocation, cut-off by classification. Zürich, Switzerland.

KOBiZE (2025). Wskaźniki emisyjności CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO i pyłu całkowitego dla energii elektrycznej. National Centre for Emissions Management (KOBiZE), Warsaw, Poland.

EuRIC AISBL (European Recycling Industries' Confederation), 2020. Plastic Recycling Factsheet.

Multicert Sp. z o.o. (2024). General Programme Instructions of the EPD Polska Programme, Warsaw, Poland.

## EPD VERIFICATION:

The verification procedure for this Environmental Product Declaration (EPD) has been carried out in accordance with the requirements of ISO 14025 standards. This EPD is valid for five years from the date of publication and may be updated earlier in the event of significant changes. Renewal requires a review and, where applicable, an update.

## EPD CONTRIBUTORS

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**Note:** The sole ownership, liability, and liability of this declaration are with the owner. Construction product declarations may not be comparable if they do not comply with EN 15804. For detailed information on comparability, please refer to EN 15804 and ISO 14025.

**EPD Polska Certificate**



# CERTIFICATE

## TYPE III EPD DECLARATION

(ENVIRONMENTAL PRODUCT DECLARATION)

**Reg. No. EPD-P 12.12.2025**



This document confirms that the Environmental Product Declaration developed by **GRILTEX POLSKA Sp. z o.o.** for

### **FORST® BOR PE Membrane**

manufactured in accordance with standard **EN 14909:2006**, meets the requirements of standards **EN 15804:2012+A2:2019** and **ISO 14025**, and that the data contained therein has been prepared correctly.

The Declaration was published on December 31, 2025 and is valid until December 31, 2030, or until it is deregistered or its publication on the website [www.epd.org.pl](http://www.epd.org.pl) is discontinued.

Authenticity of this certificate can be confirmed in the public register at [www.epd.org.pl](http://www.epd.org.pl)



**Izabela Sztamberek-Sochan, Ph.D.**  
EPD Polska Verifier



**Grzegorz Suwara**  
CEO Multicert Sp. z o.o.

Warsaw, December 31, 2025