

Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

JUNIFOL®

Waterproofing membranes and geomembranes

from

JUTA a.s.



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

"National Environmental Labeling Program" - Czech Republic (NPEZ)

Ministry of the Environment of the Czech Republic, CENIA, Czech
Environmental Information Agency, executive function of the NPEZ Agency

3015-EPD-030066885

2024-07-01

2029-06-30



An EPD should provide current information and may be updated if conditions change.



General information

Programme information

Programme:	"National Environmental Labeling Program" - Czech Republic (NPEZ)
Address:	Ministry of the Environment of the Czech Republic Department of Voluntary Instruments 100 10 Praha 10, Vršovická 1442/65
Website:	www.mzp.cz , www.cenia.cz
E-mail:	info@mzp.cz

Accountabilities for PCR, LCA and independent, third-party verification	
Product Category Rules (PCR)	
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR):	
Life Cycle Assessment (LCA)	
LCA accountability: JUTA a.s.	
Third-party verification	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	
<input checked="" type="checkbox"/> EPD verification by accredited certification body	
Third-party verification: Technický a zkušební ústav stavební Praha, s.p. is an approved certification body accountable for the third-party verification. 190 00 Praha 9, Prosecká 811/76a, CZ	
The certification body is accredited by: Český institut pro akreditaci, o.p.s., Certificate No. 456/2024	
Verifier: Ing. Lenka Vrbová	 
Procedure for follow-up of data during EPD validity involves third party verifier:	
<input type="checkbox"/> Ano <input checked="" type="checkbox"/> ne	

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: JUTA a.s.

544 15 Dvůr Králové nad Labem, Dukelská 417, The Czech Republic
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Contact:

Tadeáš Zýka, DiS.
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Description of the organisation:

JUTA a.s. residing at Dvůr Králové nad Labem is an important manufacturer of a wide variety of synthetic products. The company was established back in 1946 and nowadays it employs over 2000 people in 17 up-to-date production plants in several different locations of the Czech Republic. The main area of JUTA's activities comprises the extrusion of polymers and the subsequent production of various membranes, fibers, fabrics, knitted materials and twines. The key to the company's success is the concept of vertical integration, covering all the processes from the very start (the processing of chemicals used as the manufacturing input) to the end (finalization of the end products). The company prides itself in its experienced team of professionals, offering top-class services and long-term solutions for a broad scale of requirements of its clientele. Last but not least – JUTA puts a permanent emphasis on the quality and flexibility of its production, innovation and environmental sustainability.

Product-related or management system-related certifications:

The quality of the products is ensured by an effective quality management system according to EN ISO 9001 and is in accordance with the technical regulations regarding the type of product. The manufacturer has implemented and certified the EN ISO 14001 environmental management system, the ISO 45001 occupational health and safety management system and the EN ISO 50001 energy management system.

The product is assessed under Regulation No. 305/2011 (CPR). The manufacturer issues a declaration of performance.

See also <https://www.juta.cz/>.

Name and location of production site(s):

JUTA a.s., Na Borkách 89, 544 01 Dvůr Králové nad Labem, The Czech Republic
JUTA a.s., Na Kameni 96, 551 01 Jaroměř, The Czech Republic

Product information

Product name: JUNIFOL®

Product identification:

JUNIFOL®, JUNIFOL® PI, JUNIFOL® P, JUNIFOL® PEHD, JUNIFOL® D, JUNIFOL® D3, JUNIFOL® W, JUNIFOL® B, JUNIFOL® FT, JUNIFOL® T, JUNIFOL® N, JUNIFOL® NT, JUNIFOL® PELLD, ECOTECH 10, GEOPROOF HD, INTEREXSA by JUTA, HEKTOR by JUTA

Product description:

JUNIFOL® waterproofing films and geomembranes are flat geosynthetic products manufactured from high-density polyethylene (PE-HD), linear low-density polyethylene (PE-LLD) and thermoplastic polyolefins (TPO) by flat extrusion technology. The products are characterized by higher mechanical strength, higher mechanical resistance and overall higher durability compared to other types of insulating films. Their main purpose is performing an insulation function in various types of structures/installations. They are resistant to the actions of microorganisms, fungi, molds and UV radiation. These products are supplied in widths of up to 8.0 m.

Use of the product:

JUNIFOL® waterproofing films and geomembranes are most often used as a primary insulation layer in the construction of waste dumps, water works, underground installations, in-ground structures and other earth building projects. The products show high levels of insulating capability and durability. If properly designed and executed, these unique properties ensure the long-term preservation of the functionality of the entire structure.

The products are delivered according to the standard:

EN 13361 Geosynthetic barriers - Characteristics required for use in the construction of reservoirs and dams

EN 13362 Geosynthetic barriers - Characteristics required for use in the construction of canals

EN 13491 Geosynthetic barriers - Characteristics required for use in the construction of tunnels and associated underground structures

EN 13492 Geosynthetic barriers - Characteristics required for use in the construction of liquid waste disposal sites, transfer stations or secondary containment

EN 13493 Geosynthetic barriers - Characteristics required for use in the construction of solid waste storage and disposal sites

EN 15382 Geosynthetic barriers - Characteristics required for use in transportation infrastructure

EN 13967 Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics

The following raw materials are used for the production of JUNIFOL® waterproofing film and geomembrane: polyethylene granulate (PE-HD or PE-LLD) up to 97 % of the product weight and 3-6 % additives in the form of thermostabilizers, UV stabilizers, or dyes.

JUNIFOL® materials do not contain plasticizers. In the long term, its physical, mechanical, hydraulic and environmental characteristics do not change significantly.

UN CPC code:

3695 Other plastic construction products

Geographical scope:

The generic data used from the Ecoinvent database are used with validity for the Czech Republic (e.g. energy inputs) and in the event that data for the Czech Republic are not available, data valid for the EU or according to the location of the supplier are used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - medium.

Product packaging:

The products are delivered in accordance with the standards indicated in the product description. The products are delivered in rolls wound on plastic tubes/cores, loaded in bulk, secured during transport to the customer.

Environment and health during use

During the entire production process, it is not necessary to take any special health protection measures beyond the legally specified industrial protection measures for production employees.

LCA information

Functional unit / declared unit:

The declared unit is 1 kg of the average manufactured product – JUNIFOL®.

Designation	Unit	Value
Declared unit	kg	1
Conversion factor to 1 kg	kg	1

Reference service life:

The reference lifetime is not declared. These are construction products with many different application purposes. The service life is assumed to be 25 years according to the respective harmonized application standards.

Some products' service life is expected to be not less than 100 years (provided that the manufacturer's application/installation instructions have been observed), this being verified by the manufacturer's technical evaluation supplied upon request for these types of products with an increased expected lifetime.

Time representativeness:

For specific data, the manufacturer's data for the **year 2022** is used. For generic data, data from the Ecoinvent database version 3.9 is used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - very good.

Database(s) and LCA software used:

SimaPro calculation software, version 9.5.0.2 SimaPro Analyst, Ecoinvent database version 3.9.

Description of system boundaries:

b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and A4). The additional modules may be one or more selected from A4–A5 and/or B1–B7.

The production phase includes the following modules:

- **A1** - extraction and processing of raw materials and production of packaging from input raw materials
- **A2** - transport of input raw materials from the supplier to the manufacturer, waste removal
- **A3** - production of products, production of auxiliary materials and semi-finished products, energy consumption, including waste processing until reaching a state where it ceases to be waste or after removal of the last material residues during the production phase.
Results A1-A3 include a "**compensation report**" of biogenic CO₂ from packaging released in module A5, as module A5 is not fully included. According to the "polluter pays" principle, the costs/benefits from further management of this packaging are also included in this module.

The construction phase includes the following modules:

- **A4** - transport to the construction site. Transport is carried out by truck with a capacity of 16 - 32 t (EURO 5). Transport of the declared product unit over a distance of 1 km is considered.

The end-of-life phase includes modules:

- **C1**, deconstruction, demolition; product from the building, including its dismantling or demolition, including the initial sorting of materials at the construction site.
Decomposition and/or disassembly of the product is part of the demolition of the entire structure. The energy consumption of the machine is considered (0.001 kWh/1 kg).
- **C2**, transportation to the waste treatment site; transportation of discarded product as part of waste processing, e.g. to a recycling site, and transportation of waste, e.g. to a final disposal site. Transport from the dismantled building is carried out by a truck with a capacity of 7.5 - 16 t (EURO 5), the data for the calculation are: 0.3 kg from the dismantled product and transport 120 km to the recycling center (transport load 1.0),

0.45 kg from the dismantled product and transport 10 km to the landfill (transport load 1.5), 0.25 kg from the dismantled product and transport 60 km to the waste energy utilization facility – ZEVO (transport load 1.5).

- **C3**, processing waste for reuse, recovery and/or recycling; e.g. collection of fractions of waste from deconstruction, and processing of waste from material flows intended for reuse, recycling and energy use. 30% is considered for the use of products as recyclable material, considering the demolition, the costs of sorting and other recycling operations are negligible.
- **C4**, waste removal, including its pre-treatment and disposal site management. In this scenario, landfilling with 45% of the dismantled product is considered.

Benefits and costs beyond the product system boundary are presented in module D.

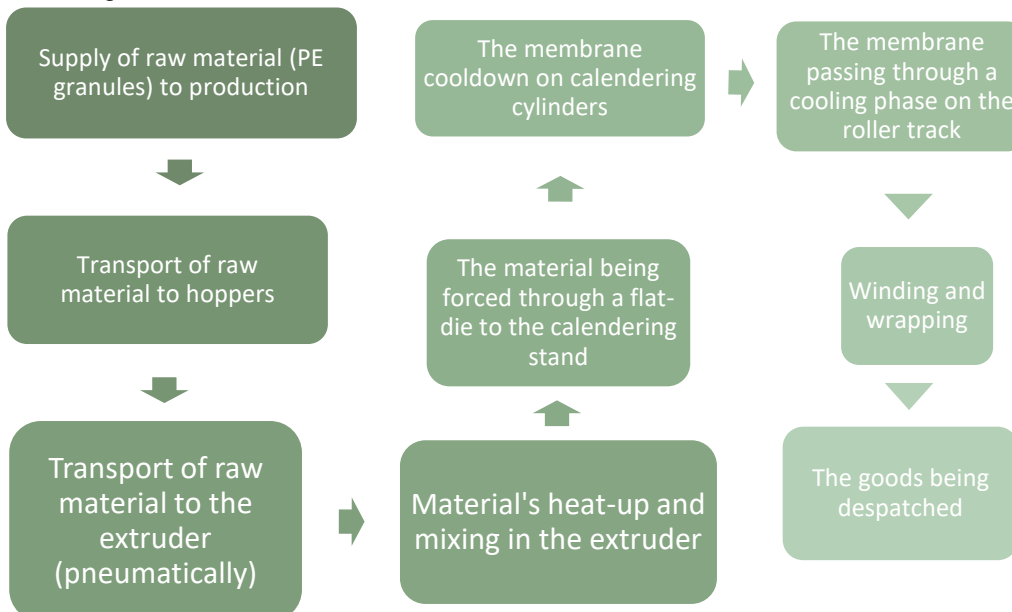
Module D includes:

- **D**, potential for reuse, recovery and/or recycling, expressed in terms of net impacts or benefits. In the module D scenario, the saving of primary raw material inputs (without considering transport and energy) in another product system (substitution of primary raw material for the production of PE balls - 0.30 kg) and benefits from the energy use of 0.25 kg of demolished product as secondary fuel are taken into account.

Production process:

The actual production of insulating films from polyethylene granulate passes through the following steps. The granulate is being fed into production in sacks or bulk bags. Subsequently, it is de-bagged and transported to hoppers, from which it is pneumatically transported to the dispenser and dosed to the extruder. The extruder is heated by electric heaters, the surface temperature of the extruder – 190 °C, the internal temperature of the extruder 220 °C. Molten PE is forced out from the extruder into the extrusion head and from there the melted PE material is drawn in between the cylinders of the calendering stand with a width of approx. 8 meters or 5.1 m (according to the manufacturing plants). The calendering cylinders are filled with cooling water conducting the heat away from the foil. Volatile substances contained in PE evaporate during the cooling process. The cooled-down film is pulled away from the calendering stand, while the edges are being trimmed. Then it finally cools down even more on a roller track and is being wound into rolls on a winder. Insulation film is usually supplied wound on plastic rolls in various lengths according to customers’ requirements.

System diagram:



More information:

Information module **A5** from the construction phase was not included in the LCA due to the difficult availability of input data and is therefore not declared.

Information modules from the use phase **B1 to B7** are also not declared, as these types of products, assuming correct use, do not require maintenance, repair or replacement during the normal life time in the use phase. They also do not require energy or water consumption during the use phase.

For the study, all operational data related to the consumption of main and auxiliary materials for the production of the product, energy data, diesel consumption and the distribution of annual waste production and emissions according to plant records were taken. In terms of produced waste, only those wastes that are clearly related to production activities were included in the analysis.

The processes required for the installation of production equipment and the construction of infrastructure were not included in the analysis. Also, administrative processes are not included – inputs and outputs are balanced per production phase.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	GLO	GLO, EU	EU, CZ	EU									EU	EU	EU	EU	GLO, EU
Specific data used	> 99 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	< 10 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %					-	-	-	-	-	-	-	-	-	-	-	-

The data used to calculate the EPD conforms to the following principles:

Technological point of view: The data used corresponds to the actual production of individual types of partial products of the plant and to the current state of the technology used.

Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - very good.

The aspect of completeness and fullness: Most of the input data is based on consumption balances, which are precisely recorded in the manufacturer's information system. The reliability of the source of specific data is determined by the uniformity of the collection methodology of the information system.

Consistency point of view: Uniform points of view are used throughout the report (allocation rules, age of data, technological scope of validity, temporal scope of validity, geographical scope of validity).

Credibility aspect: All important data were checked for adherence to cross-comparison of mass balances.

Content information – JUNIFOL®

Product components	Weight %	Post-industrial material, weight-%	Biogenic carbon content in kg C/DU
PE granulate	88-95	0	0
PE re-granulate	0-5	0-5	0
Additives	2-7	0	0
TOTAL	100	0	0
Packaging materials	Weight %	Weight-% (versus the product)	Biogenic carbon content in kg C/DU
Packaging - wood (pallet)	0.81	0.03	0.000134
Packaging - packaging foil PE	4.25	0.16	0
Packaging - tubes - plastic	94.93	3.52	0
TOTAL	100	3.71	0.000134

DU = declared unit.

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit (DU)
They are not	-	-	-

Substances listed on the list of substances of very high concern subject to authorization by the European Chemicals Agency are not contained in the product in declarable quantities.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804:2012+A2:2019/AC:2021

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ ekv.	2.85E+00	1.88E-04	ND	ND	ND	ND	ND	ND	ND	ND	6.05E-04	1.53E-02	6.11E-01	2.73E-03	-6.52E-01
GWP-biogenic	kg CO ₂ ekv.	4.09E-02	1.37E-06	ND	ND	ND	ND	ND	ND	ND	ND	5.16E-05	1.19E-04	1.72E-05	2.13E-05	0.00E+00
GWP- luluc	kg CO ₂ ekv.	2.20E-04	9.14E-08	ND	ND	ND	ND	ND	ND	ND	ND	2.87E-07	7.00E-06	9.58E-08	1.65E-06	0.00E+00
GWP - total	kg CO ₂ ekv.	2.89E+00	1.90E-04	ND	ND	ND	ND	ND	ND	ND	ND	6.57E-04	1.54E-02	6.11E-01	2.76E-03	-6.52E-01
ODP	kg CFC 11 ekv.	6.37E-09	4.10E-12	ND	ND	ND	ND	ND	ND	ND	ND	4.43E-12	3.33E-10	1.48E-12	7.92E-11	0.00E+00
AP	mol H ⁺ ekv.	1.21E-02	6.14E-07	ND	ND	ND	ND	ND	ND	ND	ND	2.45E-06	4.76E-05	1.72E-03	2.06E-05	-2.82E-03
EP-freshwater	kg P ekv.	6.92E-04	1.32E-08	ND	ND	ND	ND	ND	ND	ND	ND	9.93E-07	1.05E-06	3.31E-07	2.28E-07	-2.86E-07
EP- marine	kg N ekv.	2.05E-03	2.11E-07	ND	ND	ND	ND	ND	ND	ND	ND	5.91E-07	1.63E-05	8.02E-04	7.91E-06	-4.43E-04
EP - terrestrial	mol N ekv.	2.03E-02	2.23E-06	ND	ND	ND	ND	ND	ND	ND	ND	4.18E-06	1.72E-04	8.78E-03	8.48E-05	-4.84E-03
POCP	kg NMVOC ekv.	5.66E-03	9.17E-07	ND	ND	ND	ND	ND	ND	ND	ND	1.23E-06	7.14E-05	3.06E-03	2.95E-05	-1.27E-03
ADP- minerals& metals*	kg Sb ekv.	1.02E-06	6.04E-10	ND	ND	ND	ND	ND	ND	ND	ND	3.39E-10	4.88E-08	1.13E-10	3.80E-09	-6.23E-08
ADP-fossil*	MJ	8.51E+01	2.67E-03	ND	ND	ND	ND	ND	ND	ND	ND	1.03E-02	2.15E-01	3.44E-03	6.81E-02	-2.18E+01
WDP*	m ³	1.25E+00	1.10E-05	ND	ND	ND	ND	ND	ND	ND	ND	1.05E-04	8.27E-04	3.48E-05	3.01E-03	-4.33E-01

Acronyms **GWP-fossil** = Global Warming Potential fossil fuels; **GWP-biogenic** = Global Warming Potential biogenic; **GWP-luluc** = Global Warming Potential land use and land use change; **ODP** = Depletion potential of the stratospheric ozone layer; **AP** = Acidification potential, Accumulated Exceedance; **EP-freshwater** = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-marine** = Eutrophication potential, fraction of nutrients reaching marine end compartment; **EP-terrestrial** = Eutrophication potential, Accumulated Exceedance; **POCP** = Formation potential of tropospheric ozone; **ADP-minerals&metals** = Abiotic depletion potential for non-fossil resources; **ADP-fossil** = Abiotic depletion for fossil resources potential; **WDP** = Water (user) deprivation potential, deprivation-weighted water consumption

* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ ekv.	2.48E+00	1.88E-04	ND	ND	ND	ND	ND	ND	ND	ND	6.05E-04	1.53E-02	6.10E-01	2.73E-03	-5.43E-01
PM	Disease incidence	1.04E-07	1.50E-11	ND	ND	ND	ND	ND	ND	ND	ND	4.95E-12	1.04E-09	6.22E-07	4.51E-10	-2.53E-08
IRP	kBq U235 ekv.	1.78E-01	3.57E-06	ND	ND	ND	ND	ND	ND	ND	ND	2.94E-04	3.48E-04	9.79E-05	4.32E-05	0.00E+00
ETP- fw	CTUe	1.70E+00	1.14E-03	ND	ND	ND	ND	ND	ND	ND	ND	3.18E-04	9.44E-02	6.48E+00	2.77E-02	-1.38E-01
HTP-c	CTUh	1.38E-07	4.53E-14	ND	ND	ND	ND	ND	ND	ND	ND	1.99E-14	3.26E-12	8.74E-09	6.45E-13	-1.18E-12
HTP- nc	CTUh	1.23E-09	7.75E-13	ND	ND	ND	ND	ND	ND	ND	ND	4.29E-13	5.93E-11	1.14E-08	2.07E-11	-1.53E-10
SQP	dimensionless	1.67E+00	1.59E-03	ND	ND	ND	ND	ND	ND	ND	ND	1.51E-03	1.10E-01	5.02E-04	1.35E-01	0.00E+00
Acronyms	<p>GWP-GHG = this indicator includes all greenhouse gases except biogenic uptake and emissions of carbon dioxide and biogenic carbon stored in the product; as such the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero, PM = Potential incidence of disease due to PM emissions, IRP = Potential Human exposure efficiency relative to U235, ETP-fw = Potential Comparative Toxic Unit for ecosystems, HTP-c = Potential Comparative Toxic Unit for humans, HTP-nc = Potential Comparative Toxic Unit for humans, SQP = Potential soil quality index</p>															

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Resource use indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.06E+00	4.13E-05	ND	ND	ND	ND	ND	ND	ND	ND	4.48E-04	3.75E-03	1.49E-04	5.71E-04	-3.42E-01
PERM	MJ	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.06E+00	4.13E-05	ND	ND	ND	ND	ND	ND	ND	ND	4.48E-04	3.75E-03	1.49E-04	5.71E-04	-3.42E-01
PENRE	MJ	6.42E+01	2.84E-03	ND	ND	ND	ND	ND	ND	ND	ND	1.09E-02	2.29E-01	3.65E-03	7.25E-02	-1.56E+01
PENRM	MJ	2.73E+01	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.79E+00
PENRT	MJ	9.15E+01	2.84E-03	ND	ND	ND	ND	ND	ND	ND	ND	1.09E-02	2.29E-01	3.65E-03	7.25E-02	-2.34E+01
SM	kg	5.33E-02	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	4.67E-01	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acronyms	<p>PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water</p>															

Additional environmental information - Waste indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	4.50E-01	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional environmental information - Output flow indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.27E-01	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	3.00E-01	0.00E+00	0.00E+00
Materials for energy recovery	kg	3.01E-04	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	2.50E-01	0.00E+00	0.00E+00
Exported energy, electricity	MJ	3.92E-04	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	3.25E-01	0.00E+00	0.00E+00
Exported energy, thermal	MJ	8.25E-04	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	6.85E-01	0.00E+00	0.00E+00

The result tables shall only contain values or the letters "ND" (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.

Other environmental performance indicators

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Additional environmental information

The manufacturer has implemented and certified the ČSN EN ISO 14001 environmental management system.

References

- ČSN ISO 14025:2010 Environmentální značky a prohlášení - Environmentální prohlášení typu III - Zásady a postupy (Environmental labels and declarations - Type III environmental declarations - Principles and procedures)
- ČSN EN 15804+A2:2020 Udržitelnost staveb - Environmentální prohlášení o produktu - Zásadní pravidla pro produktovou kategorii stavebních výrobků (Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products)
- ČSN EN ISO 14040:2006 Environmentální management - Posuzování životního cyklu - Zásady a osnova (Environmental management - Life Cycle Assessment - Principles and Framework)
- ČSN EN ISO 14044:2006 Environmentální management - Posuzování životního cyklu – Požadavky a směrnice (Environmental management - Life Cycle Assessment – Requirements and guidelines)
- ČSN ISO 14063:2007 Environmentální management - Environmentální komunikace - Směrnice a příklady (Environmental management - Environmental communication - Guidelines and examples)
- ČSN EN 15643-1:2011 Udržitelnost staveb - Posuzování udržitelnosti budov - Část 1: Obecný rámec (Sustainability of construction works - Sustainability assessment of buildings - Part 1: General framework)
- ČSN EN 15643-2:2011 Udržitelnost staveb - Posuzování udržitelnosti budov - Část 2: Rámec pro posuzování environmentálních vlastností (Sustainability of construction works - Assessment of buildings - Part 2: Framework for the assessment of environmental performance)
- ČSN EN 15942:2013 Udržitelnost staveb - Environmentální prohlášení o produktu - Formát komunikace mezi podniky (Sustainability of construction works - Environmental product declarations - Communication format business-to-business)
- TNI CEN/TR 15941:2012 Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data
- ČSN EN 16449:2014 Dřevo a výrobky na bázi dřeva - Výpočet obsahu biogenního uhlíku ve dřevě a přeměny na oxid uhličitý (Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide)
- ILCD handbook - JRC EU, 2011
- Zákon č. 541/2020 Sb. v platném znění (Zákon o odpadech); Act No. 541/2020 Coll., as amended (Waste Act)
- Vyhláška č. 8/2021 Sb. Katalog odpadů – Katalog odpadů, (Decree No. 8/2021 Coll. Waste catalogue – Waste catalogue)
- Regulation (EC) No 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency - REACH (Registration, Evaluation and Authorisation of Chemical)
- Regulation of the European Parliament and of the Council (EC) No. 1272/2008 on the classification, labeling and packaging of substances and mixtures, on the amendment and repeal of Directives 67/548/EEC and 1999/45/EC and on the amendment of Regulation (EC) No. 1907/2006 (CLP regulation),
- SimaPro LCA Package, Pré Consultants, the Netherlands, www.pre-sustainability.com
- Ecoinvent Centre, www.Ecoinvent.org
- Explanatory documents are available from the head of Technical Support of the EPD owner.

