

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

NEOPLAS EPS 100



BEWI

EPD-Global

Owner of the declaration:

BEWI ASA, Insulation and Construction

Product:

NEOPLAS EPS 100

Declared unit:

1 m²

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR.

NPCR 012:2022 Part B for Thermal insulation products

Program operator:

EPD-Global

Declaration number:

NEPD-15713-19651

Issue date:

28.05.2026

Valid to:

28.05.2031

EPD software:

LCAno EPD generator ID: 1553739

General information

Product

NEOPLAS EPS 100

Program operator:

EPD-Global
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web: www.epd-global.com

Declaration number:

NEPD-15713-19651

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR.
NPCR 012:2022 Part B for Thermal insulation products

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD-Global shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 m² NEOPLAS EPS 100

Declared unit with option:

A1, A2, A3, A4, A5, C1, C2, C3, C4, D

Functional unit:

The declared unit is 1 m² of EPS for thermal and sound insulation with a thickness (31 mm) designed to provide a thermal resistance (R-value) = 1 m²K/W within an expected service life for insulation materials.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

Owner of the declaration:

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Manufacturer:

BEWI ASA, Insulation and Construction
Hammarvikringen 64
HAMAR 7263, Norway

Place of production:

BEWI Peniche
Estr. Marginal Norte Apt. 1
2524-909 Peniche, Portugal

Management system:

ISO 14001 og 9001 for all production sites

Organisation no:

925437948

Issue date:

28.05.2026

Valid to:

28.05.2031

Year of study:

2024

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804:2012+A2:2019 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global. NEPD797

Developer of EPD: Marta Machado

Reviewer of company-specific input data and EPD: Mark Plate

Approved:



Håkon Hauan, CEO EPD-Global

Product

Product description:

This Environmental Product Declaration (EPD) refers to rigid thermal insulation boards produced by BEWI Plastimar under the product name NEOPLAS EPS 100.

The product consists of expanded polystyrene (EPS) with graphite additive, giving it a grey colour and improved thermal insulation performance.

The final product is a lightweight insulation material composed of approximately 98% air enclosed in a closed-cell structure, providing excellent thermal insulation properties combined with low weight.

Typical applications include thermal insulation of floors, walls, and roofs in buildings.

Product specification

Materials	kg	%
Expanded Polystyrene (EPS)	0.62	100.00
Total	0.62	100.00

Packaging	kg	%
Packaging - EPS	0.0036	22.22
Packaging - Plastic	0.0126	77.78
Total incl. packaging	0.6362	100.00

Technical data:

Nominal density: 20 kg/m³

Thermal conductivity (according to EN 12667): 0.031 W/mK

Compressive strength at 10% deformation (EN 826): 100 kPa

Bending strength (EN 12089): 150 kPa

Fire classification (EN 13501-1): Euroclass E

Product standard: EN 13163 – Thermal insulation products for buildings – Factory made EPS products

Market:

Portugal and Spain

Reference service life, product

60 years

Reference service life, building or construction works

The reference service life of the thermal insulation product depends on the material itself and the building site location. When declaring the functional unit, the number of replacements of thermal insulation products shall be declared according to the reference study period of 60 years for the building.

LCA: Calculation rules

Declared unit:

1 m² NEOPLAS EPS 100

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804+A2. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

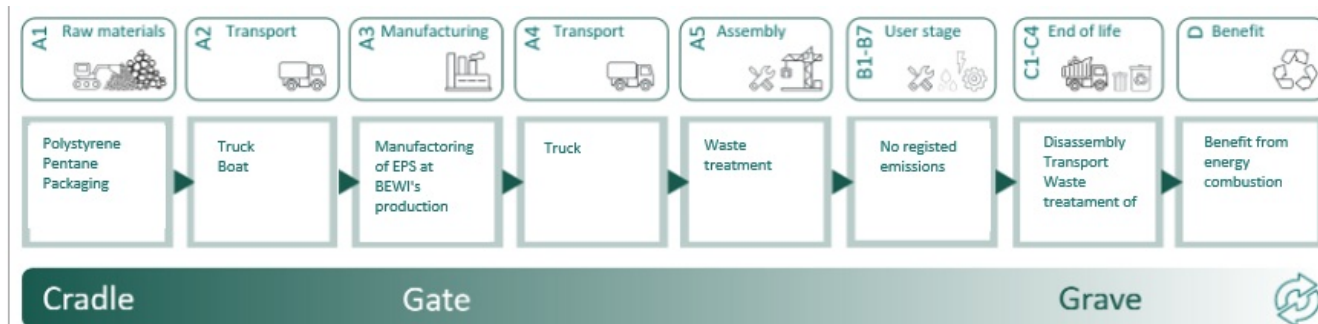
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Expanded Polystyrene (EPS)	Supplier Specific	Supplier Specific	2024
Packaging - EPS	Plastics Europe + ecoinvent 3.6	European average.	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		Use stage								End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	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	X	X	MNR	MNR	MNR	MNR	MNR	MNR	MNR		X	X	X	X	X

System boundary:



Conversion factors to other thicknesses [mm]

The insulation board is provided in several dimensions and thicknesses. Please use the conversion table in this EPD for other sizes than the declared variant. Note that when the conversion factors are used to convert the LCA results, the LCA are only presented with 2 significant figures, which may lead to variations in the converted values. Because of that, the most accurate conversion is achieved from a digital conversion. Further technical information can be obtained on www.bewi.com and in the table below.

	Thicknesses						
	31 mm	50 mm	100 mm	150 mm	200 mm	300 mm	1 m3
NEOPLAS EPS 100 (100 kPa)	1,00	1,61	3,23	4,84	6,45	9,68	32,26

Conversion to other thicknesses than the listed in table above:

If you need a conversion factor from 31 mm to a 250 mm NEOPLAS EPS 100, then you take $250 \text{ mm} / 31 \text{ mm} = 8,06$ (only applicable for the declared density, EPS 100)

Global warming (GWP_{total}) results for NEOPLAS EPS 100 (for the declared unit - in aggregated form)

A1-A3 = 1,68 kg CO₂ eqv

A1-A3, A4-C4 = 2,86 kg CO₂ eqv

A1-A3, A4-C4, D = 1,44 kg CO₂ eqv

Additional technical information:

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Product & Construction installation stages (A1-A5)

- The product stage includes the acquisition of all raw materials, products and energy, transport to the production site, packaging, and waste processing up to the "end-of-waste" state or final disposal.
- The pentane content in the EPS products is highest right after production, after which it continues to decrease. After approximately one month almost all the pentane has been emitted from the products. The release of pentane is reported in module A3 since it relates to the production.
- For A4, a distance is calculated based to the average distance to customers. The average distance is 100 km.
- For C2 considers an average transport distance of 85 km by EURO 6 diesel truck
- Incineration of the dismantled EPS is included in module C3. Energy credits related to energy recovery from the incineration is included in module D.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (kgkm)	36.7 %	100.00	0.043	l/tkm	4.30
Assembly (A5)	Unit	Value			
Waste, packaging, plastic to average treatment - A5 (inkl transport) (kg)	kg	0.0162			
De-construction demolition (C1)	Unit	Value			
Waste treatment, PS, Insulation, Portugal (kg)	kg	0.62			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 7.5-16 tonnes, EURO 6 (kgkm)	35.4 %	85.00	0.056	l/tkm	4.76
Waste processing (C3)	Unit	Value			
Waste, Polystyrene, incineration	kg	0.31			
Recycling of PS	kg	0.31			
Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration of PS	kg	0.00093			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
substitution of electricity (MJ)	MJ	0.18			
Substitution of thermal energy (MJ)	MJ	9.90			
Substitution of expandable polystyrene, EPS, granulate (kg)	kg	0.31			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact												
Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO ₂ -eq	1.24E+00	1.53E-01	4.32E-01	1.01E-02	1.28E-03	0.00E+00	1.13E-02	9.89E-01	4.82E-05	-1.22E+00
	GWP-fossil	kg CO ₂ -eq	1.23E+00	1.53E-01	4.31E-01	1.01E-02	1.28E-03	0.00E+00	1.13E-02	9.89E-01	4.82E-05	-1.21E+00
	GWP-biogenic	kg CO ₂ -eq	4.40E-03	4.42E-05	6.68E-04	4.19E-06	1.77E-07	0.00E+00	5.22E-06	6.81E-06	2.55E-08	-7.69E-03
	GWP-luluc	kg CO ₂ -eq	3.64E-04	8.74E-05	4.95E-04	3.60E-06	9.84E-08	0.00E+00	4.88E-06	1.08E-06	7.39E-09	-1.97E-03
	ODP	kg CFC11-eq	1.70E-08	3.14E-08	5.71E-08	2.29E-09	7.70E-11	0.00E+00	2.48E-09	7.09E-10	5.00E-12	-4.18E-03
	AP	mol H ⁺ -eq	2.93E-03	4.13E-03	6.23E-04	2.91E-05	1.58E-06	0.00E+00	3.24E-05	1.18E-04	1.69E-07	-4.44E-03
	EP-FreshWater	kg P -eq	2.57E-05	7.08E-07	2.31E-06	8.09E-08	2.64E-09	0.00E+00	1.03E-07	6.99E-08	6.51E-10	-2.52E-05
	EP-Marine	kg N -eq	6.95E-04	1.03E-03	1.30E-04	5.76E-06	1.45E-06	0.00E+00	6.14E-06	5.65E-05	5.29E-08	-7.53E-04
	EP-Terrestrial	mol N -eq	7.59E-03	1.14E-02	1.43E-03	6.44E-05	5.67E-06	0.00E+00	6.89E-05	6.05E-04	6.02E-07	-8.10E-03
	POCP	kg NMVOC-eq	2.96E-03	2.97E-03	2.94E-02	2.47E-05	1.86E-06	0.00E+00	2.63E-05	1.45E-04	1.66E-07	-3.93E-03
	ADP-minerals&metals ¹	kg Sb-eq	4.56E-06	1.65E-06	3.56E-07	2.80E-07	6.83E-09	0.00E+00	4.07E-07	3.05E-08	2.70E-10	-5.57E-07
	ADP-fossil ¹	MJ	4.17E+01	2.03E+00	6.72E+00	1.53E-01	5.29E-03	0.00E+00	1.68E-01	6.06E-02	4.38E-04	-2.65E+01
	WDP ¹	m ³	5.31E+00	7.38E-01	-6.12E+00	1.48E-01	1.87E-02	0.00E+00	2.02E-01	1.34E-01	4.54E-03	-3.84E+00

GWP-total = Global Warming Potential total; 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

"Reading example: 9.0 E-03 = 9.0*10⁻³ = 0.009"

1. 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 experienced with the indicator

Remarks to environmental impacts

Additional environmental impact indicators

Indicator	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
 PM	Disease incidence	2.19E-08	5.18E-09	1.91E-09	6.20E-10	2.80E-11	0.00E+00	6.32E-10	4.95E-10	2.00E-12	-6.57E-08
 IRP ²	kgBq U235 -eq	3.21E-02	8.75E-03	3.74E-03	6.69E-04	2.39E-05	0.00E+00	7.37E-04	1.01E-04	2.08E-06	-4.61E-03
 ETP-fw ¹	CTUe	1.87E+02	1.23E+00	9.54E-01	1.14E-01	5.05E-03	0.00E+00	1.31E-01	1.46E-01	8.05E-04	-8.80E+00
 HTP-c ¹	CTUh	9.08E-10	0.00E+00	4.70E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.20E-11	0.00E+00	-3.03E-10
 HTP-nc ¹	CTUh	2.09E-08	1.49E-09	9.03E-10	1.24E-10	5.00E-12	0.00E+00	1.58E-10	1.64E-09	1.00E-12	-6.29E-09
 SQP ¹	dimensionless	2.00E+00	5.12E-01	2.48E-01	1.07E-01	9.24E-03	0.00E+00	1.00E-01	7.21E-03	1.21E-03	-5.50E+00

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0×10^{-3} = 0.009"

1. 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 experienced with the indicator
2. 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.

Resource use												
Indicator	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D	
 PERE	MJ	3.39E-01	1.63E-02	2.62E-01	2.19E-03	1.34E-04	0.00E+00	2.87E-03	1.74E-03	2.55E-05	-4.65E+00	
 PERM	MJ	1.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
 PERT	MJ	3.26E-01	1.63E-02	2.62E-01	2.19E-03	1.34E-04	0.00E+00	2.87E-03	1.74E-03	2.55E-05	-4.65E+00	
 PENRE	MJ	2.64E+01	2.03E+00	6.72E+00	1.53E-01	5.29E-03	0.00E+00	1.69E-01	6.06E-02	4.38E-04	-2.65E+01	
 PENRM	MJ	1.88E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
 PENRT	MJ	4.40E+01	2.03E+00	6.72E+00	1.53E-01	5.29E-03	0.00E+00	1.69E-01	6.06E-02	4.38E-04	-2.65E+01	
 SM	kg	1.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
 RSF	MJ	7.93E-03	4.80E-04	1.32E-03	7.84E-05	3.50E-06	0.00E+00	1.04E-04	4.86E-05	6.35E-07	-4.57E-04	
 NRSF	MJ	4.00E-03	8.18E-04	1.51E-03	2.80E-04	9.17E-06	0.00E+00	3.76E-04	0.00E+00	1.01E-04	-3.00E-01	
 FW	m ³	2.84E-02	1.24E-04	2.31E-03	1.64E-05	2.80E-06	0.00E+00	2.01E-05	1.71E-04	4.03E-07	-2.21E-02	

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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = $9.0 \cdot 10^{-3}$ = 0.009"

End of life - Waste

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	HWD	kg	4.44E-03	8.69E-05	7.40E-04	7.90E-06	0.00E+00	0.00E+00	9.33E-06	0.00E+00	7.99E-04	-4.70E-04
	NHWD	kg	1.61E-01	2.51E-02	5.58E-03	7.45E-03	1.62E-02	0.00E+00	6.65E-03	0.00E+00	3.96E-04	-2.86E-02
	RWD	kg	1.03E-05	1.41E-05	4.86E-06	1.04E-06	0.00E+00	0.00E+00	1.14E-06	0.00E+00	2.64E-09	-4.07E-06

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9.0 E-03 = 9.0×10^{-3} = 0.009"

End of life - Output flow

Indicator		Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
	CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	MFR	kg	0.00E+00	0.00E+00	1.71E-02	0.00E+00	8.27E-03	0.00E+00	0.00E+00	3.10E-01	0.00E+00	0.00E+00
	MER	kg	0.00E+00	0.00E+00	1.18E-02	0.00E+00	8.10E-07	0.00E+00	0.00E+00	3.10E-01	0.00E+00	0.00E+00
	EEE	MJ	0.00E+00	0.00E+00	9.16E-03	0.00E+00	1.24E-06	0.00E+00	0.00E+00	5.46E-01	0.00E+00	0.00E+00
	EET	MJ	0.00E+00	0.00E+00	1.39E-01	0.00E+00	1.88E-05	0.00E+00	0.00E+00	8.26E+00	0.00E+00	0.00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 = 9.0×10^{-3} = 0.009"

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Portugal (kWh)	ecoinvent 3.6	405.87	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Not relevant

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products											
Indicator	Unit	A1	A2	A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	1.23E+00	1.53E-01	4.25E-01	1.01E-02	1.28E-03	0.00E+00	1.13E-02	9.88E-01	5.00E-05	-1.22E+00

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

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NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.

NPCR 012 Part B for Part B for Thermal insulation products, Ver. 2.0, 31.03.2022, EPD Norway.

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