

Environmental Product Declaration


INTERNATIONAL EPD SYSTEM



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

SOPRAXPS 300

Reaction to fire 'Class E'

Multiple products EPD based on representative product (SOPRAXPS 300 SL ES 100).
from

Soprema N.V.



Programme:

Programme operator:

The International EPD System, www.environdec.com

EPD International AB

Type of EPD:

EPD registration number:

Version date:

Validity date:

EPD of multiple products based on representative product. The complete list of products can be seen in Product description section

EPD-IES-0026908:003

2026-05-07

2030-11-13

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>PCR 2019:14 Construction Products – Version 2.0.1</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD® System.</i> <i>See www.environdec.com for a list of members</i>
c-PCR: <i>c-PCR-005 Thermal insulation products (EN 16783) (c-PCR to PCR 2019:14)</i>

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: <i>Elisabet Amat, GREENIZE</i> Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier:
☐ Yes ☒ No

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

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD:

SOPREMA Group (SOPREMA)

Address:

15 rue Saint-Nazaire
Strasbourg, France

Contact:

Umendra Singh
usingh@soprema.co.uk

**Address and contact information of the
LCA practitioner commissioned by the EPD
owner:**

SGS Search, Meerstraat 7, 5473 AA Heeswijk
Dinther.
nl.search.lca@sgs.com

Description of the organisation:

Founded in 1908 in Strasbourg, Soprema is a global leader in waterproofing, insulation, soundproofing, and building envelope solutions. With over 130 subsidiaries and 120+ production sites worldwide, the Group serves the construction and civil engineering sectors through innovative, sustainable products. SOPREMA is committed to an eco-design approach, incorporating life cycle analysis (LCA) as a central component of its product development process. This enables the reduction of environmental impacts throughout the product life cycle, from raw material sourcing to end-of-life management. Guided by values of innovation and responsibility, SOPREMA builds resilient, efficient, and sustainable living environments.

**Product-related or management system-
related certifications:**

Soprema's Tongeren facility is certified to ISO 14001:2015 and ISO 9001:2015 standards, demonstrating our commitment to environmental stewardship and quality management. Soprema's products meet rigorous industry benchmarks, holding certifications such as ATG, KOMO, DIBt, and the Agrément Certificate—ensuring reliable

performance and regulatory compliance across diverse markets. Furthermore, we adhere to requirement 7.8 of ISO 14021, affirming the responsible use of recycled content in our production processes.

PRODUCT INFORMATION

Product name:

SOPRAXPS 300 SL ES
SOPRAXPS 300 SI ES
SOPRAXPS 300 RI ES
SOPRAXPS 300 WI ES
SOPRAXPS 300 SL EN
SOPRAXPS 300 SI EN
SOPRAXPS 300 RI EN
SOPRAXPS 300 WI EN

Product identification:

300 kPa reaction to fire 'Class E'

UN CPC code:

54650 Insulation services

Product description:

SOPRAXPS 300 is a rigid thermal insulation board with a reaction to fire classification of Euroclass E. It is made of extruded polystyrene (XPS) foam, manufactured using a high volume of recycled expanded polystyrene (EPS). The product is available in various edge profile (rebate, straight or tongue & groove) and surface finishes (smooth, rough, or waffled), to suit different applications, including those requiring direct plastering. It offers high compressive strength, low water absorption, and long-term thermal performance. SOPRAXPS 300 is intended for use as thermal insulation in floors, foundations, interior and exterior walls, pitched and inverted roofs, facades, underground constructions, supporting beams, and formwork. In inverted roof applications, the system must always be ballasted.

The products are classified into two subgroups “ES” and “EN” based on the dimensional stability of the panels. SOPRAXPS 300 SL ES of 100mm thickness is the representative

product. More information is found on Soprema's website: soprema.com

	SOPRAXPS 300 reaction to fire 'Class E'	
	SOPRAXPS 300 xx EN	SOPRAXPS 300 xx ES
Thicknesses (mm) EN 823	40-280	60-280
Thermal conductivity λ_D (W/mK) EN 12667 / EN 12939	40 ≤ d ≤ 240 mm : 0,032 240 < d ≤ 280 mm : 0,033	d = 60 mm : 0,034 60 < d ≤ 280 mm : 0,035
Thermal resistance (RD) (m²K/W) EN 12667 / EN 12939	1,25 - 8,45	1,75 - 8,00
Declared density (kg/m³)	34 +/- 15%	39 +/- 15%
Compressive strength at 10% deformation (kPa) EN 826	CS(10\Y)300	CS(10\Y)300
Reaction to Fire NBN EN 13501-1	E	E
Compressive creep according to TDS/DOP (kPa) NBN EN 1606	—	130

The “xx” in the table above represents the different product groups based on edge profile and surface finishing as mentioned above.

Name and location of production site(s):

Michielenweg 1, 3700 Tongeren-Borgloon,
Belgium.

CONTENT DECLARATION

The mass (weight) of one unit of a product, as purchased or per declared unit:

The content declaration is based on the representative product SOPRAXPS 300 SL ES 100, having a thickness of 100mm and weighs 3.5kg/m².

Information on the environmental and hazardous/toxic properties of a substances contained in the product:

Based on our knowledge, no substance listed as a candidate for Authorization (Candidate List SVHC) or subject to Authorization (Annex XIV - REACH) is contained in the product at a concentration greater than 0.1% weight/weight.

Product content	SOPRAXPS 300 SL ES 100 Percentage (%)	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Polystyrene	80-90%	70-100%		
Fire retardant	0-5%			
Others	5-15%			
TOTAL	100%			

Packaging materials	Percentage (%)	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Film LDPE	82%	3%	
Label	1%	0,02%	0,00175
PS Pallet	17%	0,5%	
TOTAL	100%		

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

LCA INFORMATION

Functional unit

According to the c-PCR 005, the functional unit is 1 m² of installed product with a thickness of 100mm and having a thermal resistance (R_d) value 2.85 m²K/W. The mass of the product is 3.5kg/m²

Reference service life:

The reference service life (RSL) of the insulation panels is considered to be 50 years based on the RSL of buildings.

Time representativeness:

Production data was obtained over the year 2023.

Geographical scope:

XPS Insulation Panels are manufactured at a production location in Tongeren, Belgium. The geographical scope considered for the use and end-of-life stages of the product's life cycle assessment has been defined as EU and UK.

Database(s) and LCA software used:

Ecoinvent 3.9.1

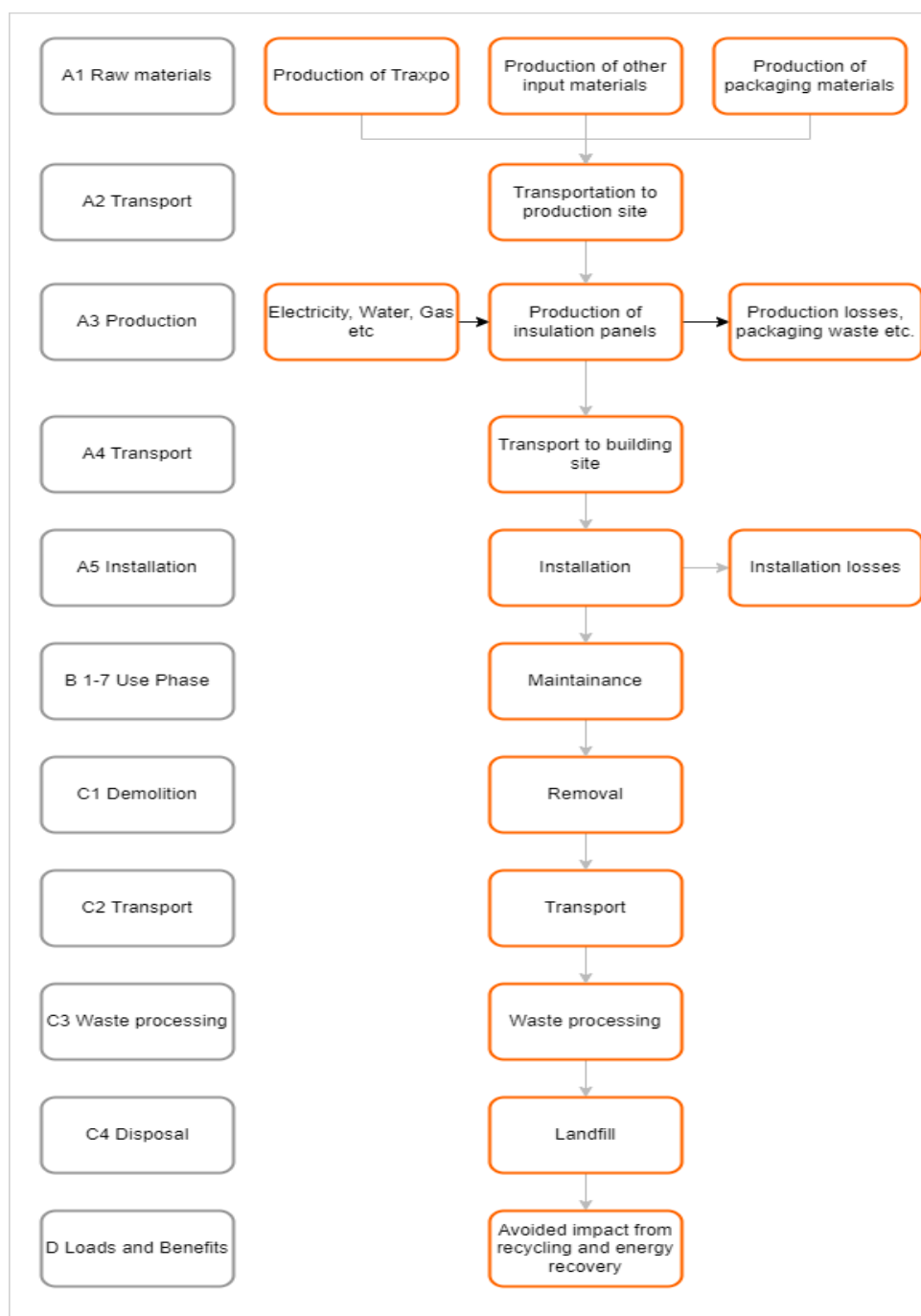
EPD/LCA Tool used:

SimaPro 9.5.0.0.

Description of system boundaries:

Cradle to grave and module D (A + B + C + D).

Process flow diagram:



Product Life Cycle

Manufacturing and packaging (A1-A3)

The environmental impacts in the product stage (A1–A3) include the extraction and processing of raw materials, production of packaging and ancillary materials, energy consumption during manufacturing, and waste management at the production facility. Material losses during manufacturing and electricity transmission losses are also accounted for.

The primary raw materials for XPS insulation boards include virgin and recycled polystyrene, blowing agents, and various additives. Finished products are packaged using plastic film and are stored and transported on polystyrene bearers.

Transport and Installation (A4-A5)

Transportation impacts (A4) include direct exhaust emissions from fuel combustion, upstream emissions from fuel production, and infrastructure-related environmental burdens associated with road transport. XPS products are distributed from manufacturing sites to customers across Europe and the UK, with an average transport distance of 218 km per shipment.

Installation of the panels (A5) is carried out using either mechanical fasteners or adhesive bonding, depending on the specific application area. Due to the high variability in installation methods and materials, these have been excluded from the scope of this study. An average installation loss of 2% is assumed. Packaging waste and installation waste are considered based on typical installation scenarios. End-of-life treatment of packaging materials is modelled using projected recycling and incineration rates for the UK and Europe.

Packaging Material	Recycling (%)	Incineration (%)
Polyethylene	51%	49%
Paper	81%	19%
Polystyrene	51%	49%

Product use and Maintenance (B1-B7)

No maintenance is required during the use phase (B1–B7). XPS insulation boards are highly durable and can last the full lifespan of a building when properly installed and protected from UV exposure and mechanical damage. However, during the use phase there are some run away emissions Isobutane and Ethanol blowing agents which are accounted for in this module.

Product End of life (C1-C4, D)

Disassembly impacts (C1) are considered negligible, as the removal of XPS insulation boards is typically performed manually and does not require significant energy or resources.

Transportation to the end-of-life treatment facility (C2) assumes a distance of 100 km to the nearest landfill, using lorry transport as the most common method.

Waste processing (C3) is not applicable, as the product is not subject to further treatment prior to disposal.

Final disposal (C4) assumes that 100% of the product waste is sent to landfill. No recycling or incineration is currently practiced for the product itself at end-of-life.

Benefits and Loads Beyond the System Boundary (Module D)

Module D accounts for potential environmental benefits from energy recovery and material recycling processes associated with packaging waste. These benefits are modelled as substitutions for conventional district heating and electricity production. While the XPS product itself is landfilled, packaging materials such as polyethylene, paper, and polystyrene are partially recycled or incinerated with energy recovery, contributing to avoided burdens beyond the system boundary.

Cut-off Criteria

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. 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, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

Allocation, Estimates and Assumptions

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 m² of the product which is used within this study are calculated by considering the total product weight per annual production. The product output is fixed to 1 m² and the corresponding amount of product is used in the calculations.

In the production plant, several kinds of products are produced; since the production processes of these products are similar, the annual production percentages are taken into consideration for allocation. According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total energy consumption, packaging materials and the generated waste per the declared product are allocated. Subsequently, the produced product output fixed to 1 m² and the corresponding amount of product is used in the calculations.

In order to divide impacts over the main products (as declared in this EPD) and B-grade products, economic allocation was applied on the inputs and energy consumption in manufacturing.

Allocation used in Ecoinvent 3.9.1 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard. This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are given below.

Module A1: Within the product stage accurate data has been used. In case products that are not available in the database, those are modelled as close to reality as possible using proxy, representative datapoint.

Module A3: In the plant, lots of different products are produced. Therefore, electricity and natural gas are allocated on yearly consumption and allocated based on mass.

For electricity consumption a market-based approach is applied, using the Ecoinvent residual market mix for Belgium.

The electricity used in the manufacturing process comes 79% from the grid and 21% from installed pv capacity at the manufacturing facility. This mix has an emission value of 0,151 kgCO₂eq/kWh.

Module A4: Transportation doesn't cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 0,5 for the packaged products. Additionally, transportation distances are averaged delivery in the last year.

Module A5: Installation waste and EoL treatment of packaging waste are considered and based on the average installation scenario of the product. Packaging waste EoL treatment scenarios are considered as per the projection figures for UK and Europe.

Module C1: The impacts of the disassembly stage are assumed zero, since the consumption of energy and natural resources for disassembling the end-of-life product is negligible as this is performed manually.

Hence, diesel consumption for operating machinery onsite is accounted for as per the PCR.

Module C2: Transportation distance to the closest disposal area is estimated as 100 km and the transportation method is assumed as lorry.

Module C3, C4: According to the manufacturer's information, 100% of waste is taken to landfill for final disposal.

Module D: Considers the benefits of recycling and energy recovery which replaces district heat and electricity. This only applies to the product's packaging as the product itself is sent to landfill, for which not avoided impacts are considered.

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

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	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	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	EU	EU	Belgium	EU and UK	EU and UK	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU
Share of primary data	23%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	>95% / -57%*					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

*The variation between the products is due to its sensitivity to the Polystyrene content in the product. As the share of polystyrene is dependent on specific product and it's respective thickness, no linear trend can be established. The variations are determined by calculating the results for each individual product, as shown in the sensitivity analysis.

Data Quality assessment

The inventory analysis was based on a combination of specific and generic data. Site-specific primary data were collected by Soprema for the year 2023, reflecting actual operations and considered to be of high quality and representative of current production conditions. A comprehensive data quality assessment was conducted in accordance with EN 15941. Each dataset was evaluated for representativeness in terms of technology, geography, and time, as well as for completeness and consistency. The raw material datasets sourced from Ecoinvent demonstrated good technological, geographical, and temporal representativeness. The manufacturing phase was modelled using site-specific data that accurately reflect the processes at Soprema's Tongeren facility. No datasets were identified as having poor or very poor data quality.

Process	Source type	Source	Reference year	Data Category	Share of primary data, of GWP-GHG results for A1-3
Manufacturing of product	Collected data	EPD owner	2024	Primary data	19%
Generation of electricity used in manufacturing of product	Energy contracts	EPD owner	2024	Primary data	1%
Transportation of raw materials to the manufacturing facilities	Collected data	EPD owner	2024	Primary data	1%
Traxpo production data	Collected data	EPD owner	2025	Primary data	2%
Production of virgin PS	Database	Ecoinvent v3.9.1	2020	Secondary data	0%
Blowing agents Production data	Database	Ecoinvent v3.9.1	2020	Secondary data	0%
Production of Additives	Database	Ecoinvent v3.9.1	2020	Secondary data	0%
Packaging	Database	Ecoinvent v3.9.1	2020	Secondary data	0%
Total share of primary data, of GWP GHG results for A1-3					23%

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

The estimated impact results are only relative statements and do not indicate the endpoints of impact categories, exceeding threshold values, safety margins and/or risks. When interpreting the results of the product stage (Modules A1–A3), the results of the end-of-life stage (Modules C1–C4) should also be considered. Furthermore, biogenic carbon leaving the product system in Module A5 and recovered energy leaving the system in Modules A5 or C have already been balanced within Modules A1–A3. Additionally, this EPD is based on Environmental Footprint (EF) version 3.1.

Mandatory impact category indicators according to EN 15804

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-total	kg CO ₂ eq.	1,95E+00	5,76E-02	2,27E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,48E-04	2,05E-02	0,00E+00	4,29E-01	-1,80E-01
GWP-fossil	kg CO ₂ eq.	1,95E+00	5,76E-02	2,27E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,48E-04	2,05E-02	0,00E+00	4,29E-01	-1,79E-01
GWP-biogenic	kg CO ₂ eq.	3,65E-03	3,89E-06	7,26E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,29E-08	1,39E-06	0,00E+00	2,14E-05	-2,09E-04
GWP-luluc	kg CO ₂ eq.	5,59E-04	1,17E-06	1,15E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-08	4,16E-07	0,00E+00	1,04E-06	-1,86E-05
ODP	kg CFC 11 eq.	7,56E-08	1,29E-09	1,64E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,49E-12	4,59E-10	0,00E+00	2,51E-10	-5,79E-09
AP	mol H ⁺ eq.	5,76E-03	7,44E-05	1,39E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,33E-06	2,65E-05	0,00E+00	1,54E-04	-3,46E-04
EP-freshwater	kg P eq.	6,19E-05	4,69E-08	1,25E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,98E-10	1,67E-08	0,00E+00	2,22E-08	-1,40E-06
EP-marine	kg N eq.	1,12E-03	1,83E-05	3,54E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,57E-06	6,51E-06	0,00E+00	1,98E-04	-7,18E-05

EP-terrestrial	mol N eq.	1,23E-02	1,77E-04	3,62E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,70E-05	6,29E-05	0,00E+00	7,62E-04	-7,86E-04
POCP	kg NMVOC eq.	7,61E-02	1,40E-04	4,96E-03	1,67E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,01E-06	4,97E-05	0,00E+00	3,38E-04	-4,83E-04
ADP-minerals&metals*	kg Sb eq.	3,67E-07	2,05E-09	7,53E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-11	7,30E-10	0,00E+00	7,12E-10	-7,41E-09
ADP-fossil*	MJ	6,66E+01	7,93E-01	1,37E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,59E-03	2,82E-01	0,00E+00	2,25E-01	4,26E+00
WDP*	m ³	7,20E-01	7,26E-04	1,46E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,87E-06	2,58E-04	0,00E+00	3,94E-04	-7,45E-02
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															

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 eq.	1,95E+00	5,76E-02	2,27E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,48E-04	2,05E-02	0,00E+00	4,29E-01	-1,80E-01

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	5,58E+00	2,09E-03	1,23E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,93E-06	7,42E-04	0,00E+00	2,24E-02	-5,72E-02
PERM	MJ	9,89E-03	0,00E+00	-9,89E-03	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	0,00E+00	0,00E+00
PERT	MJ	5,59E+00	2,09E-03	1,13E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,93E-06	7,42E-04	0,00E+00	2,24E-02	-5,72E-02
PENRE	MJ	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRM	MJ	1,05E+01	0,00E+00	-3,85E+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	0,00E+00	-6,66E+00	0,00E+00
PENRT	MJ	6,95E+01	8,43E-01	1,44E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,87E-03	3,00E-01	0,00E+00	2,38E-01	-4,63E+00
SM	kg	2,97E+00	0,00E+00	5,94E-02	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	0,00E+00	0,00E+00
RSF	MJ	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m³	1,54E-02	3,29E-05	3,36E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,16E-07	1,17E-05	0,00E+00	7,53E-05	-1,20E-03
Acronyms	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															

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	8,19E-05	5,24E-06	1,93E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,06E-08	1,86E-06	0,00E+00	1,37E-06	-6,80E-06
Non-hazardous waste disposed	kg	3,41E-02	3,87E-05	6,92E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,38E-07	1,38E-05	0,00E+00	3,39E+00	-9,97E-04
Radioactive waste disposed	kg	4,30E-04	6,80E-08	8,61E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,23E-10	2,42E-08	0,00E+00	2,81E-07	-1,32E-06

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	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	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	7,25E-03	0,00E+00	5,64E-02	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	0,00E+00	0,00E+00
Materials for energy recovery	kg	3,30E-02	0,00E+00	5,44E-02	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	0,00E+00	0,00E+00
Exported energy, electricity	MJ	1,79E-01	0,00E+00	-4,01E-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	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	3,08E-01	0,00E+00	-6,93E-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	0,00E+00	0,00E+00	0,00E+00

Single Score value

The single score value presents the result obtained after characterisation using a common reference impact, followed by aggregation into a single score that assigns different weights to various impact categories. It is calculated using JRC Environmental Footprint (EF) weighting factors

Single Score	1,45E+03
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ADDITIONAL ENVIRONMENTAL INFORMATION

Sensitivity analysis for variation in thickness

Variation in the Climate Change total values for the insulation boards with different thickness compared to the representative was analysed, resulting in the table below. In order to understand the consequences for the Climate

Change total score, the following formula is used.

$$Y = X * \text{Variation}$$

Where:

X – environmental impact value obtained for the representative product

Y – interpolated value for the new board thickness

Product range name	Board thickness (mm)	Variation
SOPRA XPS 300 SL ES	40	0,56
	50	0,49
	60	0,69
	80	1,02
	100	1,00
	120	4,21
	160	1,02
	180	1,94
	200	4,14
	220	2,55
	240	2,33
	260	6,80
SOPRA XPS 300 SL EN	30	1,06
SOPRA XPS 300 SI ES	140	1,58
SOPRA XPS 300 RI EN	40	0,47
	100	1,07
SOPRA XPS 300 RI ES	20	0,61
	30	1,00
SOPRA XPS 300 WI EN	40	0,43
	50	0,47
	60	0,53
	80	1,20
	100	1,02
	120	1,52
	140	1,37

In addition to the above analysis on variation in GWP in A1-A3, the variation over A1-C4 per impact category is calculated and shown in the table below. The main cause of the variation is the thickness of the products, as the amount of material per square meter is highly dependent on the thickness of the product. Between some products the percentage of secondary material deviates, causing variations in the results. The table summarizes the declared product as well as the deviation with the lowest and highest score measures in the product group.

LCA result of one declared unit product (A-C)	Unit	Min - %	Representative	Max - %
GWP-total	kg CO ₂ eq.	-58%	2,69E+00	481%
GWP-fossil	kg CO ₂ eq.	-58%	2,68E+00	481%
GWP-biogenic	kg CO ₂ eq.	-58%	4,40E-03	735%
GWP-luluc	kg CO ₂ eq.	-61%	5,73E-04	197%
ODP	kg CFC 11 eq.	-61%	7,92E-08	179%
AP	mol H ⁺ eq.	-58%	6,16E-03	645%
EP-freshwater	kg P eq.	-67%	6,32E-05	254%
EP- marine	kg N eq.	-58%	1,38E-03	508%
EP-terrestrial	mol N eq.	-58%	1,37E-02	535%
POCP	kg NMVOC eq.	-68%	9,83E-02	307%
ADP-minerals&metals	kg Sb eq.	-37%	3,78E-07	491%
ADP-fossil	MJ	-58%	6,93E+01	436%
WDP	m ³	-58%	7,36E-01	844%
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			

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CPC	Central product classification
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared
DEFRA	Department for Environment, Food & Rural Affairs
PCR	Product Category Rules
LCA	Life Cycle Assessment
UV	ultraviolet
XPS	Extruded Polystyrene

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Bouwwerken Bepalingsmethode Milieuprestatie, “STICHTING NATIONALE MILIEUDATABASE,” 2025.

VERSION HISTORY

Original Version of the EPD, 2025-11-13

Revision 1, 2025-11-18

Error in reported thermal resistance (Rd) value as declared with the functional unit is resolved.

Revision 2, 2026-05-07

Small editorial changes.

