ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

OBEX CORTEX 0500FR Class B Interface Sealing Membrane
OBEX Protection Ltd

EPD HUB, HUB-3233
Published on 27.04.2025, last updated on 29.04.2025, valid until 26.04.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	OBEX Protection Ltd
Address	Unit 5, Norton Road, Broomhall, Worcester, WR5 2QR
Contact details	technical@obexuk.com
Website	obexglobal.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Callum Doouss
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☑ Internal verification ☐ External verification
EPD verifier	Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. 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.

PRODUCT

Product name	OBEX CORTEX 0500FR Class B Interface Sealing Membrane
Product reference	0500FR
Place of production	United Kingdom
Period for data	01/01/2024 until 31/12/2024
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m2 of 0500FR ISM
Declared unit mass	0.65 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4.96E+00
GWP-total, A1-A3 ($kgCO_2e$)	4.85E+00
Secondary material, inputs (%)	21
Secondary material, outputs (%)	114
Total energy use, A1-A3 (kWh)	22.5
Net freshwater use, A1-A3 (m^3)	0.13

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

OBEX Protection Ltd specializes in the manufacture and distribution of innovative protection films and membrane solutions for the construction industry.

The company was founded in Worcester UK by the Francis family in January 2010 and has since become the global leader in fire-rated membrane innovation for the window and façade industry.
In the early years, OBEX focused on the production of protection tapes and films for the window manufacturing industry, building a reputation for quality products backed by an excellent service.

In 2013, OBEX received ISO 9001 certification. We also opened our Australian office, shipping product from the UK to supply the growing demand in Australasia.
Two years later in 2015 we opened our French division, where the SPEEDSTER taping system proved to be very popular.

It was during 2015 that OBEX took the step of diversification into the production of EPDM membranes, quickly becoming a key supplier of membranes and associated products to the construction industry. Over the next few months, the rapidly increasing demand for OBEX products required investment in state-of-the-art machinery, including sending the first slitting machine out to Australia.

One of the most significant innovations in the history of OBEX has been the development of our OBEX CORTEX fire-rated membrane systems. This has become a real game-changer for the construction industry for two reasons:

- Firstly, architects, contractors and installers now have a source for façade membrane systems that are not only compliant with the government's fire-regulations but, importantly, are also rigorously tested to the correct EN standards for performance.
- Secondly, they also have access to our expertise in correct product specification, correct installation procedures and compatibility data, as well as a free site-support provision for install training and QA reporting.

July **2020** saw us relocate to our brand new 27,500 sq.ft. premises, providing space for greater stock holding, a new R&D zone and a great environment for the OBEX team.
Today, OBEX Protection continues its rapid growth, based on a strong commitment to innovation, quality and service, backed by a culture of openness, honesty and fairness.

We look forward to working with you, so that together, we can play a key part in protecting and enhancing the buildings of the future.

PRODUCT DESCRIPTION

OBEX CORTEX 0500FR Class B Interface Sealing Membrane is a top-performing, fire-classified membrane that has been specifically designed for creating water and airtight seals around windows, doors, curtain walling systems, SFS sections to concrete frames, and balcony waterproofing.

This Interface Sealing Membrane has been approved by BBA, a third-party organization that ensures its quality and reliability. It achieves Class B-s3, d0 – EN 13501-1 fire classification, making it suitable for use on relevant buildings above 18m.

OBEX CORTEX 0500FR Class B Interface Sealing Membrane works seamlessly with OBEX CORTEX 0771FR Class B Paste Adhesive, together ensuring a robust, airtight seal between two substrates.

This membrane is perfect for a wide range of applications where a compliant fire-classified EPDM-alternative is required.

Typical Uses

Weather & airtight seals around windows, doors and curtain walling systems
Weather & airtight seals from SFS sections to the concrete frame
Top of parapet walls
Balcony waterproofing
Many other applications where a robust Class B EPDM-alternative is required

Further information can be found at obexglobal.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	17.19	-
Fossil materials	79.71	-
Bio-based materials	3.09	-

BIOGENIC CARBON CONTENT

The mass of biogenic carbon containing materials in the product or packaging is less than 5 % of the mass of the product or packaging, the declaration of biogenic carbon content is omitted.

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	N/R
Biogenic carbon content in packaging, kg C	N/R

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2 of 0500FR ISM
Mass per declared unit	0.65 kg
Functional unit	1 m2 of 0500FR ISM
Reference service life	60

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

TECHNICAL SPECIFICATIONS

Specification	Value
Harmonized Standard	EN 13984
Watertightness	EN1928 Pass — 2 kPa for 24 hours
Water vapor permeability (y)	EN 1931 23,726 µ
Cold temperature flexibility	En1109/495-5 -40°C, no cracks 3rd Party Approved BBA
Air Tightness	EN 12114 <0.1m3
Equivalent air layer thickness (Sd value)	EN 1931 12m
Calcium sulphate durability	EN 1947 Pass
Fire Classification	EN 13501-1 B-s3, d0
Tensile Strength	EN 12311-2 2490 N/50mm - 2079 N/50mm
Vapor resistance	EN 1931 56 MNs/g
UV & heat ageing	Pass (watertightness, tensile, tear strength)
Watertightness	EN 1928 (method A) Pass — 2 kPa for 24 hours, 60 kPa for 24 hours
Resistance to tearing	EN 12310-1 MD 429 N, CD 452N
Elongation at break %	EN12311-2 MD 28% CD 31% Passive house rating A+

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

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		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, electricity, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes. All transportation involve in the raw material supplier to construction site are incorporated in EPD mostly materials are transported using lorry and ship which is mentioned in the EPD of the product. All packaging is included in the EPD of product which are involve in the packing of the 0500FR membrane.

The manufacturing process for coated fabrics starting with the Raw Material Supply. Following this, the materials are processed in the Base Fabric Weaving stage, where they will later receive a coating. The next step is the Compounding and Mixing of Polymer Compound as per specification and coating the base fabric. Post-coating, the fabric proceeds to the Cooling and Surface Treatments Applied stage for specific textures, colors, or other surface qualities. Next, the fabric undergoes Quality Checks to ensure that all specifications are met. Mixed melted plastic produce as waste in the manufacturing which can be used for recycling for useful purposes. Waste water is also produced during production which is treated.

Finally, the fabric moves to the Rewinding, Cutting, Packaging stage. Here, it is rewound, cut into usable sizes. Final product is packed in the cardboard and sealed with tape. After it wrap using heat shrink machine is applied on the pallets. Wooden pallets are used for the transportation of final product from manufacturing site to the customer,

Manufacture is covered by the sites ISO 9001:2015 certified quality management system, its ISO 14001:2015-certified environmental management system

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) by lorry cover fuel direct exhaust emissions, environmental impacts of fuel production. To calculate the distance of average distance of product deliver to customer main customers of 2024 year are determined and average distance of all customer is calculated which is 214km which is considered in the EPD. As per the 1m2 of the declared unit the weight of the product with packaging as per declared unit is 0.67756 kg which is transported to the

customer site. All packaging (plastic, cardboard and wood) of materials waste during installation of product are consider in the EPD A5 section.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

No Energy consumption is considered in this section for the process of de-construction (C1) from the building as is it remove from building manually by hand. It is assumed that 40% of the final product is recycled as recycling rate of PVC base products are lower with the remaining 60% is transported to landfill. This is as per European PVC industry and standards like PVC industry's Product Stewardship Program (VinylPlus).

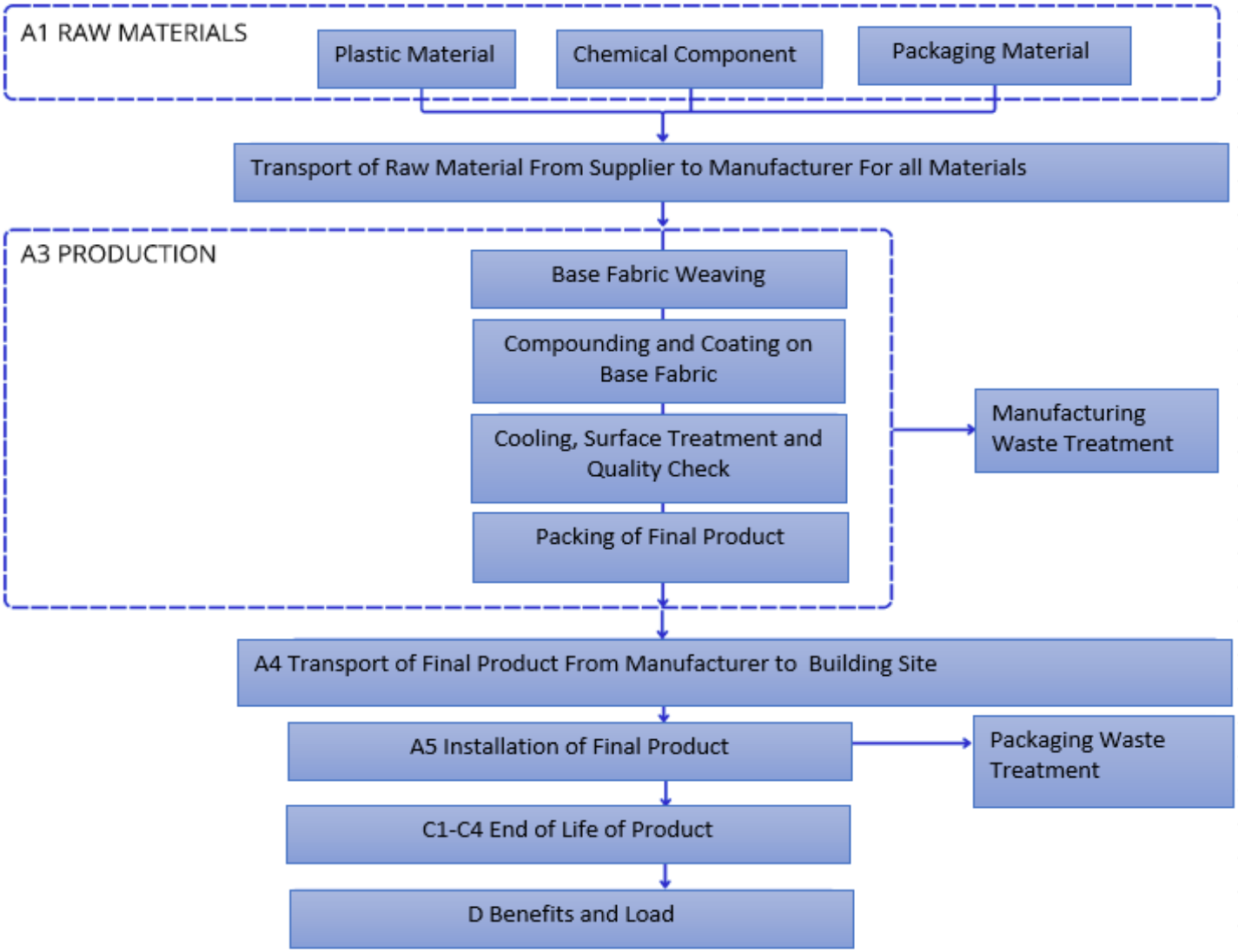
For plastic packaging It is assumed that 70% of the packaging is recycled and 30% is transported to landfill for packaging plastic material in the end-of-life section as per EU directives.

For cardboard packaging It is assumed that 80% of the cardboard packaging is recycled and 20% is transported to landfill as per European Commission.

The wooden pallet is taken as per the RICS WLCA methodology, which states that the end-of-life scenarios for wood panel products are 99% incineration for energy recovery, with 1% disposed of in landfill.

The recycling facility, incineration facility and landfill site are assumed to be 50 km away from the demolition site all the distance is covered using EURO 5 lorry 3.5-7.5 metric ton.

As demolition did not involve any process or energy that's why it is not included in the C1 section it is done manually, In C2 transportation from the demolition site to incineration/ recycling/ landfilling site are included in the EPD, In C3 section plastic/ cardboard materials are recycled back after end of life and wood base products are burn for energy recovery. All transportation involve in the end of life is incorporated in the EPD. Remaining waste after recycling and incineration is landfilled as mention in the C4 section. For recycling of the final product after end-of-life benefits of recycled material is added in the section D.


A1 RAW MATERIALS
Plastic Material
Chemical Component
Packaging Material
Transport of Raw Material From Supplier to Manufacturer For all Materials
A3 PRODUCTION
Base Fabric Weaving
Compounding and Coating on Base Fabric
Cooling, Surface Treatment and Quality Check
Packing of Final Product
Manufacturing Waste Treatment
A4 Transport of Final Product From Manufacturer to Building Site
A5 Installation of Final Product
Packaging Waste Treatment
C1-C4 End of Life of Product
D Benefits and Load

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard 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. All allocations are done as per the reference standards and the applied PCR. In this study, no allocation done.

Data type	Allocation
Raw materials	-
Packaging material	-
Ancillary materials	-
Manufacturing energy and waste	-

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	%

This EPD is product and factory specific and does not contain average calculations.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3.09E+00	5.64E-01	1.27E+00	4.92E+00	3.88E-02	1.93E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.58E-03	1.06E-01	1.41E-01	-4.43E-01
GWP – fossil	kg CO_2e	3.09E+00	5.64E-01	1.27E+00	4.92E+00	3.74E-02	1.93E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.45E-03	1.06E-01	1.41E-01	-4.56E-01
GWP – biogenic	kg CO_2e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.02E-06	-2.25E-05	-1.10E-04	1.33E-02
GWP – LULUC	kg CO_2e	1.15E-03	2.97E-04	6.71E-05	1.51E-03	1.36E-03	1.12E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.23E-04	0.00E+00	5.73E-05	-2.74E-04
Ozone depletion pot.	kg CFC_{-11}e	7.74E-08	7.61E-09	1.73E-08	1.02E-07	1.36E-09	1.87E-11	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.53E-10	4.24E-11	6.96E-10	-2.11E-07
Acidification potential	mol H^+e	2.06E-02	2.52E-03	1.29E-03	2.44E-02	1.22E-04	9.00E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.81E-05	1.37E-04	4.50E-04	-1.44E-03
EP-freshwater[2)]	kg Pe	2.04E-01	4.94E-05	4.88E-03	2.09E-01	3.57E-06	1.86E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.84E-07	8.80E-03	3.93E-04	-1.47E-04
EP-marine	kg Ne	8.24E-03	7.06E-04	2.85E-04	9.23E-03	4.98E-05	4.04E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.82E-06	3.09E-05	1.48E-04	-2.75E-04
EP-terrestrial	mol Ne	6.52E-02	7.72E-03	3.34E-03	7.63E-02	4.19E-04	3.59E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.32E-05	3.40E-04	1.49E-03	-2.64E-03
POCP ("smog")[3)]	kg NMVOCe	2.16E-02	2.84E-03	2.43E-03	2.69E-02	1.65E-04	1.07E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.53E-05	9.68E-05	4.35E-04	-1.97E-03
ADP-minerals & metals[4)]	kg Sbe	3.62E-02	2.30E-06	1.82E-07	3.62E-02	1.81E-07	8.41E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.20E-08	1.78E-09	5.99E-07	-8.97E-06
ADP-fossil resources	MJ	4.94E+01	7.69E+00	1.59E+01	7.30E+01	5.33E-01	1.92E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.83E-02	1.39E+00	8.54E-01	-1.28E+01
Water use[5)]	m^3e depr.	2.11E+00	3.87E-02	2.87E-02	2.18E+00	3.89E-03	8.81E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.99E-04	6.52E-06	8.94E-03	-1.41E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1.53E-07	3.46E-08	1.21E-07	3.09E-07	2.96E-09	1.44E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.76E-10	1.12E-09	4.69E-09	-3.35E-09
Ionizing radiation[6)]	kBq U235e	4.76E-02	7.15E-03	3.47E-03	5.82E-02	5.82E-04	2.48E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.87E-05	2.44E-04	1.49E-03	-7.11E-02
Ecotoxicity (freshwater)	CTUe	1.33E+01	1.52E+00	8.74E-01	1.57E+01	1.44E+00	1.80E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.33E-01	4.65E-12	4.45E+02	-2.67E+00
Human toxicity, cancer	CTUh	5.73E-09	1.03E-10	1.20E-10	5.95E-09	9.07E-12	2.44E-11	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.16E-12	2.28E-11	5.75E-09	-8.96E-10
Human tox. non-cancer	CTUh	1.26E-07	4.58E-09	1.51E-09	1.32E-07	4.80E-10	5.31E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.28E-11	2.28E-11	1.31E-06	-5.41E-09
SQP[7)]	-	4.11E+00	3.46E+00	9.46E-01	8.52E+00	4.44E-01	1.21E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.05E-02	4.03E-03	8.92E-01	-1.55E+00

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	3.49E+00	1.30E-01	5.92E-02	3.68E+00	1.35E-02	-3.85E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.62E-03	1.14E-01	3.69E-02	-7.09E-01
Renew. PER as material	MJ	1.78E-03	0.00E+00	3.01E-01	3.03E-01	0.00E+00	3.86E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.02E-04
Total use of renew. PER	MJ	3.49E+00	1.30E-01	3.60E-01	3.98E+00	1.35E-02	5.83E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.62E-03	1.14E-01	3.69E-02	-7.08E-01
Non-re. PER as energy	MJ	5.32E+01	7.69E+00	1.58E+01	7.67E+01	5.43E-01	-1.08E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.91E-02	1.39E+00	8.54E-01	-1.82E+01
Non-re. PER as material	MJ	1.36E+01	0.00E+00	0.00E+00	1.36E+01	0.00E+00	1.27E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	1.10E+01	0.00E+00	1.12E+01
Total use of non-re. PER	MJ	6.68E+01	7.69E+00	1.58E+01	9.03E+01	5.43E-01	1.92E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.91E-02	1.24E+01	8.54E-01	-7.05E+00
Secondary materials	kg	1.36E-01	4.02E-03	1.90E-03	1.42E-01	3.00E-04	2.35E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.99E-05	1.25E-03	2.16E-04	2.76E-01
Renew. secondary fuels	MJ	1.85E-04	5.00E-05	1.90E-04	4.25E-04	3.80E-06	1.90E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.06E-07	1.86E-04	4.66E-06	-2.56E-05
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	1.30E-01	1.07E-03	2.00E-04	1.31E-01	1.46E-04	8.64E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.76E-05	3.21E-08	4.09E-04	-3.77E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3.55E-01	1.53E-02	6.30E-03	3.77E-01	1.33E-03	3.80E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.71E-04	5.18E-03	8.96E-01	-2.38E-02
Non-hazardous waste	kg	1.60E+00	2.94E-01	-2.43E-03	1.90E+00	2.11E-02	2.48E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.85E-03	1.88E-06	7.81E-02	-1.75E+01
Radioactive waste	kg	2.43E-05	1.75E-06	1.35E-06	2.74E-05	1.42E-07	6.16E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.92E-08	1.93E-06	3.71E-07	-1.86E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	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	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	1.50E-02	0.00E+00	7.61E-02	9.11E-02	0.00E+00	3.22E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	2.60E-01	0.00E+00	0.00E+00
Materials for energy rec	kg	6.73E-04	0.00E+00	1.81E-08	6.73E-04	0.00E+00	2.28E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	7.90E-04	7.90E-04	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy –	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1.84E+00	5.61E-01	1.25E+00	3.66E+00	3.86E-02	1.97E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.55E-03	1.05E-01	1.41E-01	-4.37E-01
Ozone depletion Pot.	kg CFC_{-11}e	7.12E-09	6.09E-09	1.37E-08	2.69E-08	1.09E-09	1.52E-11	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.22E-10	7.91E-11	5.61E-10	-2.10E-07
Acidification	kg SO_2e	1.19E-02	1.97E-03	9.98E-04	1.49E-02	9.36E-05	6.66E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.39E-05	1.11E-04	3.37E-04	-1.20E-03
Eutrophication	kg PO_4^3e	3.33E-03	3.95E-04	1.59E-04	3.89E-03	1.03E-04	1.98E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.06E-05	1.05E-05	7.10E-05	-6.28E-04
POCP (“smog”)	kg C_2H_4e	7.77E-03	1.49E-04	1.12E-04	8.03E-03	9.88E-06	5.88E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.37E-06	8.67E-06	2.40E-05	-1.29E-04
ADP-elements	kg Sbe	3.62E-02	2.24E-06	1.58E-07	3.62E-02	1.77E-07	7.22E-09	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.16E-08	2.38E-09	3.63E-07	-7.08E-06
ADP-fossil	MJ	3.59E+01	7.58E+00	1.57E+01	5.92E+01	5.24E-01	1.88E-02	MND	MND	MND	MND	MND	MND	MND	0.00E+00	7.70E-02	1.13E+00	8.30E-01	-1.15E+01

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3.09E+00	5.64E-01	1.27E+00	4.92E+00	3.88E-02	1.93E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.57E-03	1.06E-01	1.41E-01	-4.56E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance. I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Sarah Curpen, as an authorized verifier acting for EPD Hub Limited.
27.04.2025