ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

100mm Plasmor Fibolite 3.6N/mm²

FIBOLITE®

EPD HUB, HUB-3552

Published on 29.06.2025, last updated on 29.06.2030, valid until 28.06.2030

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	Plasmor Limited
Address	PO Box 44, Womersley Road, Knottingley, West Yorkshire, WF11 0DN, United Kingdom
Contact details	Technical@plasmor.co.uk
Website	https://www.plasmor.co.uk/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-B1, and modules C1-C4, D
EPD author	Owen Gallagher - Plasmor
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.

This EPD is intended for business-to-business and/or business-to-consumer communication. 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	100mm Fibolite 3.6n/mm2
Additional labels	Fibolite
Product reference	100FL03
Place(s) of raw material origin	United Kingdom
Place of production	Plasmor Great Heck DN14 0BZ, United Kingdom
Place(s) of installation and use	United Kingdom
Period for data	Jan 24 to Dec 24
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
A1-A3 Specific data (%)	97.2

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m2
Declared unit mass	85.61 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2.28E+01
GWP-total, A1-A3 ($kgCO_2e$)	2.28E+01
Secondary material, inputs (%)	0.21
Secondary material, outputs (%)	80
Total energy use, A1-A3 (kWh)	77.8
Net freshwater use, A1-A3 (m^3)	0.04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Plasmor Limited is a privately owned concrete block and concrete block paving manufacturer supplying a comprehensive range of over 1000 concrete products to the building industry throughout the UK. Established in 1959, the Plasmor Group of companies has grown to be one of Britain's largest independent concrete products manufacturers.

A continual programme of capital investment and new product development contributes to sustained organic growth. Plasmor's commitment to research and development, in house engineering excellence and the deployment of leading-edge technology, has gained the Company recognition as pioneers in the building products industry. Together with the highest levels of customer service through understanding, responsiveness, adaptability and flexibility, customer satisfaction is unrivalled.

PRODUCT DESCRIPTION

FIBOLITE is an ultra lightweight load bearing block manufactured from Plasmor's own man-made expanded clay. The block is primarily used for the inner leaf of cavity walls in Masonry construction. It is manufactured from Ordinary Portland Cement, Blast Furnace Slag, Limestone and Plasmor own Expanded Clay. The block is of grey colour, open in texture, good for fixings / plaster applications and is manufactured in accordance with EN 771-3.

https://www.plasmor.co.uk/building-blocks/ultra-lightweight-blocks/fibolite/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	100	United Kingdom
Fossil materials	0	-
Bio-based materials	0	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.0
Biogenic carbon content in packaging, kg C	0.0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m2
Mass per declared unit	85.61 kg
Functional unit	1 m2 of load bearing wall with a defined load bearing capacity of 3.6N/mm2 which fulfils the performance requirements of thermal insulation, sound insulation and fire resistance for a defined reference service life of 150 years.
Reference service life	150 years

SUBSTANCES, REACH - VERY HIGH CONCERN

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

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		
x	x	x	x	x	x	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
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, 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 as well as losses during electricity transmission. A market-based approach is used in modelling the electricity mix utilized in the factory.

The raw materials (A1) used in block production at Plasmor Great Heck are acquired in United Kingdom and transported by road haulage. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are conservatively considered with average loading factors in the Ecoinvent background data.

Concrete blocks are made from cement, aggregates, water and (if needed) admixtures. The blocks covered by this EPD have been manufactured where the dry components are thoroughly mixed, water and additives are then included, the mix is then placed onto the mould with aid of complex vibration and weighing systems to form required block dimensions and density. Raw material losses during production are assessed as insignificant (<0.01%). Waste generated during production is returned into the cycle. Once demoulded, the blocks are cured in specially designed curing chambers. Once cured, blocks are packaged into packs of 96 blocks, secured for loading with two vertical and 1 horizontal strap & stored on the yard awaiting release by quality control.

Manufacturing of concrete blocks requires electricity supplied from the grid and natural gas used in blocks curing chambers, for the purpose of production (A3). Machinery and equipment are counted as capital good and are not taken into consideration in the calculations. All industrial processes from raw material acquisition and pre-processing, production, are included. Further, water used for cleaning and maintenance of the equipment, transportation and delivering the raw materials to the factory are omitted since the quantified mass contribution is less than 0.1%. These include ancillary materials in very small amounts and have no serious impact on the emissions of the product. Further, water used for cleaning and maintenance of the equipment, transportation and waste streams of the packaging materials

used for delivering the raw materials to the factory are omitted since the quantified mass contribution is less than 0.1%.

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

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

This EPD includes transport of the finished goods to the wider market from Heck, Biggleswade & Bow depot taking into account an combined delivery average of the rail freight system from Great Heck and the average road delivery of 32Km. Material is then distributed to the merchants / contractors / projects. Vehicle capacity utilization is assumed to be 100 % which means full load. Empty returns are conservatively considered with average loading factors in the Ecoinvent background data.. Transportation does not cause losses as product are packaged properly.

Installation includes the mortar required (7% per m2), packaging waste generated, and installation loss of 3%, based on a current industry study by MPA, CBA and APA.

PRODUCT USE AND MAINTENANCE (B1-B7)

Aggregate blocks are durable, fire resistant not attacked by vermin or insects, do not introduce harmful substances into the internal environment of buildings and require minimal or no maintenance over the full life of the building. Given the nature of the product and its application, no impacts are associated with the use stage of concrete over the lifetime of the building. However, from the production stage through to construction stage and during the lifetime of the building aggregate blocks will readily carbonate absorbing atmospheric carbon dioxide (B1).
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

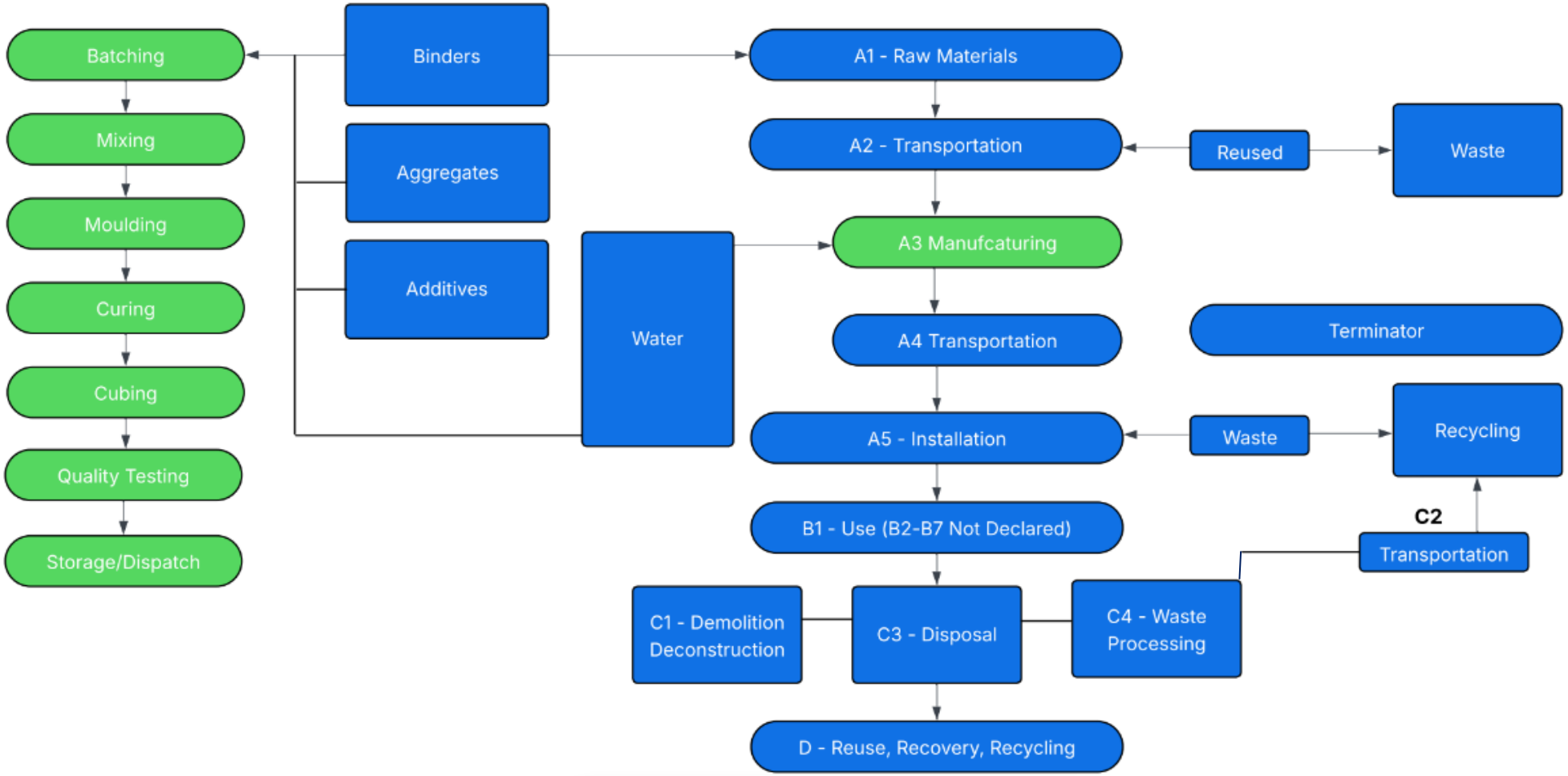
At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition process consumes energy in the form of diesel fuel used by building machines. Energy consumption of a demolition process is on the average 10 kWh/m2 (Bozdağ, Ö & Seçer, M. 2007). Basing on a Level(s) project, an average mass of a reinforced concrete building is about 1000 kg/m2. Therefore, energy consumption demolition is assumed to be 10 kWh/1000 kg = 0,01 kWh/kg. The source of energy is diesel fuel used by work machines (C1).

The dismantled concrete blocks are delivered to the nearest construction waste treatment plant. It is estimated that there is no mass loss during the use of the product, therefore the end-of-life product is assumed that it has the same weight with the declared product. Transportation distance to the closest disposal area is estimated as 25 km from the project, within the United Kingdom, the transportation method is lorry which is the most common (C2).

At the waste treatment plant, waste that can be reused, recycled or recovered for energy is separated and diverted for further use. It can be assumed that 100% of the concrete blocks are transported to a waste treatment plant, where the blocks are crushed and separated. About 80% of concrete (Betoniteollisuus ry, 2020) is recycled. The process losses of the waste treatment plant are assumed to be negligible (C3). The remaining 20% of concrete is assumed to be sent to the landfill (C4).

Due to the recycling potential of concrete, they can be crushed and used as secondary raw material, which avoids the use of virgin raw materials. The 80 % of concrete going to waste processing is converted into secondary raw materials after recycling (D).

MANUFACTURING PROCESS



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.

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

All industrial processes from raw material acquisition and pre-processing, production, product distribution and installation, and end-of-life management are included. For easier modelling and because of lack of accuracy in available modelling resources many constituents under 0,1% of product mass are excluded. These include some concrete admixtures which are all present in the product only in very small amounts and have no serious impact on the emissions of the product. Further, water used for cleaning and maintenance of the equipment, transportation and waste streams of the packaging materials used for delivering the raw materials to the factory are omitted since the quantified mass contribution is less than 0.1%.

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

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

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, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

- Modules A2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small and so the variety in load assumed to be negligible. Empty returns are conservatively considered with average loading factors in the ecoinvent background data
- Module A4: Transportation doesn't cause losses as products are packaged properly.

▪ Module A5: Installation energy is included to account for product installation at site. Packaging materials are recycled/incinerated for energy recovery. Installation includes the mortar required (7% per m2), packaging waste generated, and installation loss of 3%, based on a current industry study by MPA, CBA and APA
▪ Module C1: Consumed energy for demolition process is assumed as 0.01 kWh/kg.
is estimated as 25 km and the transportation method is assumed as lorry which is the most common. https://www.lovejunk.com/blog/trash-talk/uk-landfill-site-map/

▪ Modules C3, C4: 80% of concrete is sent for recycling while the remaining materials is assumed to be landfilled.
· Module D: No benefits as we cannot claim any due the fact all materials used came from already recycled sources.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

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

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

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	2.05E+01	7.01E-01	1.63E+00	2.28E+01	1.02E+00	2.34E+00	-2.53E+00	MND	MND	MND	MND	MND	MND	3.30E-01	4.43E-01	3.21E-01	1.14E-01	-8.06E-01
GWP – fossil	kg CO_2e	2.05E+01	7.01E-01	1.63E+00	2.28E+01	1.01E+00	2.32E+00	-2.53E+00	MND	MND	MND	MND	MND	MND	3.30E-01	4.43E-01	3.21E-01	1.14E-01	-8.05E-01
GWP – biogenic	kg CO_2e	-1.63E-02	1.39E-04	3.70E-04	-1.58E-02	5.61E-04	1.85E-02	0.00E+00	MND	MND	MND	MND	MND	MND	3.37E-05	8.78E-05	-3.27E-05	-3.64E-05	-2.53E-04
GWP – LULUC	kg CO_2e	4.69E-03	4.08E-04	5.76E-04	5.67E-03	8.82E-04	9.74E-04	0.00E+00	MND	MND	MND	MND	MND	MND	3.38E-05	1.57E-04	3.28E-05	6.54E-05	-7.21E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1.73E-06	1.02E-08	1.98E-07	1.94E-06	1.30E-08	1.35E-07	0.00E+00	MND	MND	MND	MND	MND	MND	5.06E-09	8.81E-09	4.91E-09	3.31E-09	-8.32E-09
Acidification potential	mol H^+e	4.36E-02	1.20E-02	5.31E-03	6.09E-02	7.14E-03	8.50E-03	0.00E+00	MND	MND	MND	MND	MND	MND	2.98E-03	1.39E-03	2.89E-03	8.11E-04	-4.77E-03
EP-freshwater[2)]	kg Pe	7.13E-04	3.72E-05	1.25E-04	8.76E-04	1.53E-04	4.67E-05	0.00E+00	MND	MND	MND	MND	MND	MND	9.53E-06	2.94E-05	9.26E-06	9.41E-06	-2.46E-04
EP-marine	kg Ne	6.86E-03	2.77E-03	2.02E-03	1.17E-02	2.72E-03	2.06E-03	0.00E+00	MND	MND	MND	MND	MND	MND	1.38E-03	4.67E-04	1.34E-03	3.09E-04	-1.11E-03
EP-terrestrial	mol Ne	1.25E-01	3.08E-02	2.16E-02	1.78E-01	2.96E-02	2.47E-02	0.00E+00	MND	MND	MND	MND	MND	MND	1.51E-02	5.08E-03	1.47E-02	3.38E-03	-1.33E-02
POCP ("smog")[3)]	kg NMVOCe	3.56E-02	9.01E-03	7.82E-03	5.24E-02	9.06E-03	6.82E-03	0.00E+00	MND	MND	MND	MND	MND	MND	4.51E-03	2.17E-03	4.38E-03	1.21E-03	-3.89E-03
ADP-minerals & metals[4)]	kg Sbe	2.26E-05	1.35E-06	5.09E-06	2.90E-05	2.70E-06	1.10E-04	0.00E+00	MND	MND	MND	MND	MND	MND	1.18E-07	1.45E-06	1.15E-07	1.82E-07	-4.35E-06
ADP-fossil resources	MJ	2.34E+02	9.13E+00	2.81E+01	2.72E+02	1.35E+01	1.98E+01	0.00E+00	MND	MND	MND	MND	MND	MND	4.32E+00	6.22E+00	4.19E+00	2.81E+00	-1.08E+01
Water use[5)]	m^3e depr.	1.42E+00	3.57E-02	1.91E-01	1.65E+00	1.23E-01	3.03E-01	0.00E+00	MND	MND	MND	MND	MND	MND	1.08E-02	3.06E-02	1.05E-02	8.10E-03	-1.11E+00

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

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	6.57E-08	3.61E-08	1.07E-07	2.08E-07	1.26E-07	9.66E-08	0.00E+00	MND	MND	MND	MND	MND	MND	8.47E-08	3.48E-08	6.27E-07	1.85E-08	-7.02E-08
Ionizing radiation[6]	kBq U235e	8.27E-02	6.08E-03	1.75E-01	2.64E-01	3.19E-02	5.53E-02	0.00E+00	MND	MND	MND	MND	MND	MND	1.91E-03	7.93E-03	1.86E-03	1.77E-03	-7.21E-02
Ecotoxicity (freshwater)	CTUe	4.66E+01	1.01E+00	2.42E+00	5.00E+01	2.56E+00	2.15E+01	0.00E+00	MND	MND	MND	MND	MND	MND	2.38E-01	8.17E-01	2.31E-01	2.36E-01	-2.25E+00
Human toxicity, cancer	CTUh	4.73E-10	1.42E-10	2.43E-10	8.57E-10	2.27E-10	3.94E-10	0.00E+00	MND	MND	MND	MND	MND	MND	3.39E-11	7.55E-11	3.30E-11	2.11E-11	-2.10E-10
Human tox. non-cancer	CTUh	1.44E-08	3.84E-09	6.70E-09	2.50E-08	7.42E-09	1.35E-08	0.00E+00	MND	MND	MND	MND	MND	MND	5.38E-10	3.91E-09	5.22E-10	4.85E-10	-6.29E-09
SQP[7]	-	5.81E+00	3.52E+00	4.19E+00	1.35E+01	1.01E+01	1.85E+01	0.00E+00	MND	MND	MND	MND	MND	MND	3.03E-01	3.70E+00	2.94E-01	5.53E+00	-8.47E+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	5.87E+00	1.02E-01	1.82E+00	7.79E+00	5.21E-01	1.03E+00	0.00E+00	MND	MND	MND	MND	MND	MND	2.74E-02	1.08E-01	2.66E-02	2.71E-02	-9.13E-01
Renew. PER as material	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	5.87E+00	1.02E-01	1.82E+00	7.79E+00	5.21E-01	1.03E+00	0.00E+00	MND	MND	MND	MND	MND	MND	2.74E-02	1.08E-01	2.66E-02	2.71E-02	-9.13E-01
Non-re. PER as energy	MJ	2.37E+02	9.13E+00	2.60E+01	2.72E+02	1.35E+01	1.75E+01	0.00E+00	MND	MND	MND	MND	MND	MND	4.32E+00	6.22E+00	4.19E+00	2.81E+00	-1.08E+01
Non-re. PER as material	MJ	1.17E-01	0.00E+00	2.06E+00	2.18E+00	0.00E+00	-2.06E+00	0.00E+00	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	-9.39E-02	-2.35E-02	9.30E-01
Total use of non-re. PER	MJ	2.37E+02	9.13E+00	2.81E+01	2.74E+02	1.35E+01	1.54E+01	0.00E+00	MND	MND	MND	MND	MND	MND	4.32E+00	6.22E+00	4.10E+00	2.78E+00	-9.84E+00
Secondary materials	kg	1.84E-01	4.70E-03	6.38E-03	1.95E-01	1.46E-02	6.80E-03	0.00E+00	MND	MND	MND	MND	MND	MND	1.79E-03	2.85E-03	1.74E-03	7.06E-04	1.32E-02
Renew. secondary fuels	MJ	2.94E-04	2.82E-05	1.75E-03	2.07E-03	6.95E-05	7.05E-05	0.00E+00	MND	MND	MND	MND	MND	MND	4.69E-06	3.60E-05	4.55E-06	1.46E-05	-6.95E-05
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	3.10E-02	9.59E-04	6.21E-03	3.82E-02	3.15E-03	3.48E-02	0.00E+00	MND	MND	MND	MND	MND	MND	2.86E-04	8.37E-04	2.77E-04	2.92E-03	-2.66E-02

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	8.21E-01	1.49E-02	3.27E-02	8.69E-01	5.17E-02	6.86E-02	0.00E+00	MND	MND	MND	MND	MND	MND	4.81E-03	8.92E-03	4.67E-03	3.10E-03	-7.20E-02
Non-hazardous waste	kg	9.47E+00	2.36E-01	3.03E+00	1.27E+01	8.92E-01	1.83E+00	0.00E+00	MND	MND	MND	MND	MND	MND	6.55E-02	1.88E-01	6.36E-02	7.09E-02	-1.75E+00
Radioactive waste	kg	2.68E-04	1.49E-06	3.90E-05	3.08E-04	7.77E-06	5.04E-05	0.00E+00	MND	MND	MND	MND	MND	MND	4.69E-07	1.97E-06	4.56E-07	4.30E-07	-1.75E-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	0.00E+00	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	1.20E-03	0.00E+00	0.00E+00	1.20E-03	0.00E+00	2.30E-02	0.00E+00	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	7.33E+01	0.00E+00	0.00E+00
Materials for energy rec	kg	1.92E-03	0.00E+00	0.00E+00	1.92E-03	0.00E+00	5.75E-05	0.00E+00	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	3.30E-01	0.00E+00	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	1.40E-01	0.00E+00	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.90E-01	0.00E+00	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

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	1.98E+01	6.98E-01	1.62E+00	2.21E+01	1.01E+00	2.30E+00	-2.53E+00	MND	MND	MND	MND	MND	MND	3.28E-01	4.40E-01	3.19E-01	1.13E-01	-8.00E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	1.39E-06	8.08E-09	1.40E-07	1.54E-06	1.05E-08	1.08E-07	0.00E+00	MND	MND	MND	MND	MND	MND	4.01E-09	7.01E-09	3.89E-09	2.63E-09	-6.93E-09
Acidification	kg SO_2e	3.51E-02	9.66E-03	3.94E-03	4.87E-02	5.29E-03	6.56E-03	0.00E+00	MND	MND	MND	MND	MND	MND	2.10E-03	1.05E-03	2.04E-03	6.01E-04	-3.72E-03
Eutrophication	kg PO_4^3e	1.30E-02	1.06E-03	3.03E-03	1.71E-02	1.13E-03	1.88E-03	0.00E+00	MND	MND	MND	MND	MND	MND	4.90E-04	2.68E-04	4.75E-04	1.91E-04	-7.63E-04
POCP (“smog”)	kg C_2H_4e	2.30E-03	5.03E-04	3.95E-04	3.20E-03	4.05E-04	3.14E-04	0.00E+00	MND	MND	MND	MND	MND	MND	1.57E-04	1.00E-04	1.53E-04	5.68E-05	-3.32E-04
ADP-elements	kg Sbe	2.79E-05	1.32E-06	4.99E-06	3.42E-05	2.63E-06	1.10E-04	0.00E+00	MND	MND	MND	MND	MND	MND	1.15E-07	1.42E-06	1.12E-07	1.78E-07	-4.28E-06
ADP-fossil	MJ	2.40E+02	9.03E+00	2.57E+01	2.75E+02	1.30E+01	1.99E+01	0.00E+00	MND	MND	MND	MND	MND	MND	4.29E+00	6.09E+00	4.16E+00	2.78E+00	-9.61E+00

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15802+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

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

29.06.2025