



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Stellar 7.3 N/mm² Foundation Block - Great Heck



STELLAR FOUNDATION 350

EPD HUB, HUB-7174

Published on 14.08.2026, last updated on 14.08.2026, valid until 13.08.2031
Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804,
EPD Hub PCR version 1.2 (24 Mar 2025) 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 1.2, 24 Mar 2025 EN 16757 Product Category Rules for concrete and concrete elements
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	Wiktor Aleksiejczyk - Plasmor
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub

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	Stellar 7.3 N/mm ² Foundation Block - Great Heck
Additional labels	-
Product reference	350SL07CELF DN
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 (%)	-
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	96.8

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ² of aggregate concrete Stellar Foundation blocks, nominal dimensions 350 × 250 × 140 mm, mean compressive strength 7.3 N/mm ² , laid on the 350 mm bed face with dry density of 1400 kg/m ³
Declared unit mass	164.65 kg
Mass of packaging	0.0684 kg
GWP-fossil, A1-A3 (kgCO₂e)	19.3
GWP-total, A1-A3 (kgCO₂e)	19.5
Secondary material, inputs (%)	1.88
Total energy use, A1-A3 (kWh)	37.4
Net freshwater use, A1-A3 (m³)	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

This Environmental Product Declaration is based on production site in Great Heck.

The Plasmor Stellar 7.3 N/mm² Foundation block (350 × 250 × 140 mm) is a lightweight aggregate cellular foundation block specifically designed to reduce weight while still achieving the technical requirements of a 350mm load-bearing masonry cavity wall construction below the damp-proof course (DPC).

The block features a unique cellular core that runs through only 90% of the length of the block — meaning the block has a hole on one side and a solid face on the opposite end. Finger grips running along the leading edges aid handling and lifting on site. When laid in the finished foundation, the outer

faces of all foundation areas display the solid sides of the block, each block weighs 16 kg at 3% moisture content.

Stellar Foundation blocks are manufactured in production facilities operating to BS EN 771-3, with third party accreditation under BSI for ISO 9001, 14001 and 6001 “Very good achieved”.

Stellar 7.3 N/mm² Foundation Block:

Lightweight & Low Density	Lightweight cellular construction with a dry density of 1400 kg/m ³ , reducing dead load on substructure compared with traditional solid foundation blocks
Sulphate Resistant	Suitable for DS-1, DS-2 and DS-3 ground conditions in accordance with BRE Special Digest 1 and PD 6697 Table 15, providing reliable performance across the full range of typical UK sulphate soil classifications
Fire Resistant	Manufactured from Class 1 Fire Resistant Aggregate as defined in BS 5628 Part 3, complying with BS EN 1996-1-2005
Load Bearing	7.3 N/mm ² mean compressive strength, suitable for load-bearing 350 mm cavity wall foundation applications supporting residential, commercial and industrial superstructures
Low Shrinkage	Moisture movement not greater than 0.6 mm/m, minimising the risk of cracking and contributing to the long-term durability and integrity of the substructure masonry
Reliable Bonding	Shear bond strength of 0.15 N/mm ² ensures consistent structural integrity across mortar bed joints in foundation walls
Authority	Manufactured to BS EN 771-3 under BSI third-party accreditation under BSI for ISO 9001, 14001 and 6001 “Very good achieved”

Easily Cut & Chased

The block can be cut on site without specialist equipment. Where blocks are cut, the solid end must remain in place and the open end is recycled, preserving the integrity of the solid outer face of the foundation

The Stellar Foundation block is intended for use below DPC in load-bearing 350mm-wide cavity wall foundation construction. The product is particularly suited to:

- 350mm load-bearing masonry cavity wall foundations below DPC
- Cavity widths from 125 mm minimum to 150 mm maximum; for cavities between 125 mm and 140 mm, the inner and outer leaf are to be equally brought in from the outer edges
- Building Regulations Part L 2021 compliant wall build-ups (e.g. brick outer, 50 mm low-emissivity cavity, 75 mm PIR insulation, 100 mm inner leaf blockwork achieving 0.18 W/m²K)
- Sites with sulphate soil conditions classified DS-1, DS-2 or DS-3 in accordance with BRE Special Digest 1 and PD 6697 Table 15
- NHBC-warranted housing developments (NHBC Accepts Reviewed System)

Stellar Foundation Block – Technical Specifications:

Compressive Strength	7.3 N/mm ²
Dry Density	1400 kg/m ³
Block Thickness	250 mm
Work Size (L × W × H)	350 × 250 × 140 mm
Unit Weight	~ 16 kg
Pack Coverage	(350 mm bed face) 25.6 blocks per m ²

<https://www.plasmor.co.uk/building-blocks/lightweight-blocks/stellar-foundation-350/>

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 m ² of aggregate concrete Stellar Foundation blocks, nominal dimensions 350 × 250 × 140 mm, mean compressive strength 7.3 N/mm ² , dry density of 1400 kg/m ³
Mass per declared unit	164.65 kg
Functional unit	1 m ² lightweight aggregate cellular concrete block wall foundation (STELLAR FOUNDATION, 250 mm thickness, 350 × 250 × 140 mm work size), with a mean compressive strength of 7.3 N/mm ² , laid on the 350 mm bed face with dry density of 1400 kg/m ³
Reference service life	100 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	ND	ND	ND	ND	ND	ND	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

Not declared = ND.

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 and rail freight. 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 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 back into the cycle. Once demoulded, the blocks are cured in specially designed curing chambers. Once cured, blocks are packaged into packs of 48 blocks, secured for loading with two vertical and 1 horizontal strap & stored on the yard awaiting release by quality control.

The electricity powering the (A3) manufacturing stage at Plasmor Great Heck comes from a 100% certified renewable supply rather than standard grid mix. Plasmor Limited holds a Renewable Electricity Certificate confirming its supply of UK certified renewable electricity. Natural gas for the curing chambers is taken from the grid. 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.

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.

Module A4 accounts for the transport of the finished goods to the wider market from Heck, Biggleswade & Bow depot, taking into account a 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 products are packaged properly.

Module A5 installation includes cement mortar at 7% per m² (11.52 kg), sourced from standard UK supply. No energy-consuming machinery is required for the installation of concrete masonry blocks as they are hand-laid. No significant energy consumption is associated with the installation of concrete masonry blocks. Blocks are hand-laid using standard masonry techniques and no mechanical lifting or specialist equipment is required.

A5 Waste assumptions: Installation waste is assumed at 3% material loss, based on a current industry study by MPA, CBA and APA.

Waste treatment assumptions are as follows:

Waste concrete (non-reinforced): 80% recycled, 20% to inert landfill

Packaging waste (polyethylene strapping): part recycled, part incinerated for energy recovery, remainder to sanitary landfill

Transport of A5 waste: Waste generated on site during installation is transported to the nearest construction waste treatment facility, assumed at 25 km by lorry (>32 metric ton, EURO6), consistent with the end-of-life transport assumption used in C2.

PRODUCT USE AND MAINTENANCE (B1-B7)

The reference service life (RSL) of Stellar Foundation Blocks, when installed as part of a permanent masonry structure is declared as 100 years.

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 (**B2–B7 are not declared**) of 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)

The end-of-life scenarios declared in this EPD are based on current UK waste management practice and are representative of the most likely scenario alternatives for concrete masonry blocks at end of life in the United Kingdom.

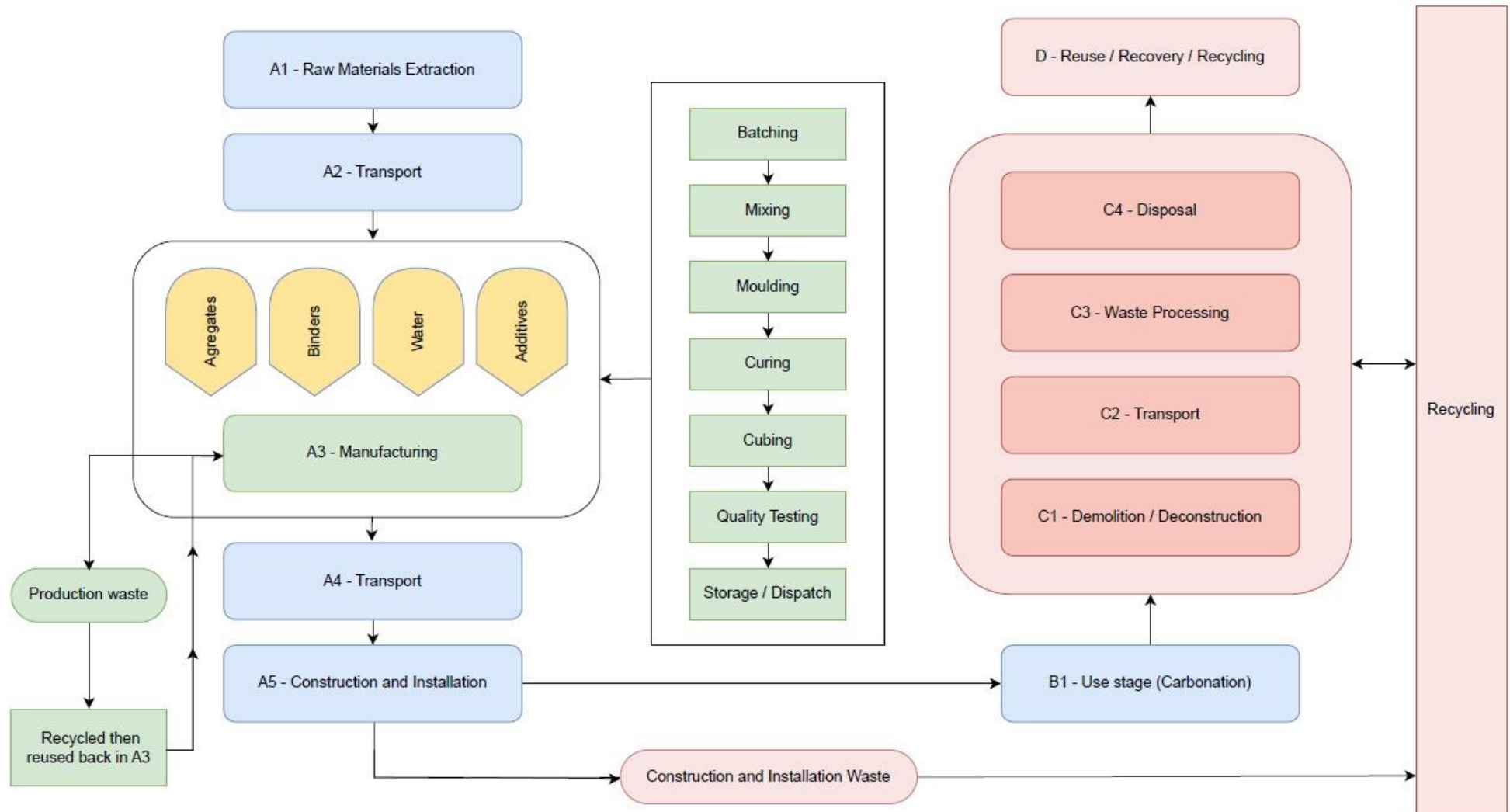
C1	At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition process consumes energy in the form of diesel fuel used by building machines. Energy consumption of a demolition process is on the average 10 kWh/m ² (Bozdağ, Ö & Seçer, M. 2007). Based on a Level(s) project, an average mass of a reinforced concrete building is about 1000 kg/m ² . 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.
C2	Demolished concrete block waste is transported by lorry (>32 metric ton) within the United Kingdom to the nearest construction waste treatment facility, assumed at a distance of 25 km from the project site. Reference: UK landfill site map (lovejunk.com/blog/trash-talk/uk-landfill-site-map).
C3	Waste Processing: The waste treatment plant is located in the United Kingdom. It is assumed that 100% of demolished concrete blocks are transported to a waste treatment plant where they are crushed and separated. 80% of concrete waste is sent for recycling as secondary aggregate, achieving end-of-waste status as recycled material (Betoniteollisuus ry, 2020). Process losses at the waste treatment plant are assumed to be negligible.
C4	The remaining 20% of concrete waste that cannot be recycled is sent to an inert material landfill within the United Kingdom.
Module D	Reuse, Recovery and Recycling Potential: 80% of concrete waste processed for recycling is converted into secondary raw material (recycled aggregate), which substitutes virgin primary gravel aggregate. The net benefit declared in Module D reflects the avoided production of primary gravel aggregate. These scenarios are currently in use in the UK construction industry and are representative of the most likely end-of-life pathway for concrete masonry blocks.

Concrete block recycling benefit: The 80% of demolished concrete 131.7 kg + 9.22 (80% mortar) – 3.09 kg (Secondary material already used in the mix) that is processed into recycled aggregate substitutes primary virgin gravel aggregate production. The substitution is based on Ecoinvent background data for gravel production in the United Kingdom.

Packaging recycling benefit: Polyethylene packaging waste from installation (A5) that is sent for recycling (0.023 kg per declared unit) generates a recycling benefit by substituting primary polyethylene production. Packaging waste sent to municipal incineration (0.023 kg) generates exported energy benefits — Thermal: 0.19 MJ and Electricity: 0.14 MJ — substituting average UK grid electricity and heat production.

Exclusions from Module D: No benefits are declared for the 20% concrete sent to inert landfill (C4), as no substitution potential is assumed for landfilled material. No energy recovery benefits are declared from concrete demolition waste itself. No loads or benefits from co-product allocation flows have been included in Module 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	Physical Properties
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

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.

Module C2: Transportation distance to the closest disposal area 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: Recycling benefit from replacing the primary gravel.

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 for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

C1: Demolition energy 0.01 kWh/kg diesel fuel (Bozdağ & Seçer, 2007)

C3: 80% concrete recycled as secondary aggregate, 20% to inert landfill (Betoniteollisuus ry, 2020)

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, EF 3.1

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 ₂ e	1.45E+01	3.28E+00	1.77E+00	1.95E+01	1.95E+00	3.71E+00	-3.71E+00	ND	ND	ND	ND	ND	ND	6.35E-01	8.27E-01	5.79E-01	2.20E-01	-1.41E+00
GWP – fossil	kg CO ₂ e	1.45E+01	3.28E+00	1.51E+00	1.93E+01	1.95E+00	3.67E+00	-3.71E+00	ND	ND	ND	ND	ND	ND	6.35E-01	8.27E-01	5.79E-01	2.20E-01	-1.41E+00
GWP – biogenic	kg CO ₂ e	-2.50E-03	8.10E-04	2.60E-01	2.58E-01	1.08E-03	3.55E-02	0.00E+00	ND	ND	ND	ND	ND	ND	6.48E-05	1.65E-04	1.45E-05	-5.89E-05	-2.81E-03
GWP – LULUC	kg CO ₂ e	4.20E-03	2.14E-03	6.32E-04	6.97E-03	1.70E-03	1.75E-03	0.00E+00	ND	ND	ND	ND	ND	ND	6.51E-05	2.95E-04	6.56E-05	1.26E-04	-1.32E-03
Ozone depletion pot.	kg CFC-11e	3.66E-07	4.82E-08	1.96E-07	6.10E-07	2.51E-08	1.65E-07	0.00E+00	ND	ND	ND	ND	ND	ND	9.72E-09	1.63E-08	8.86E-09	6.36E-09	-1.31E-08
Acidification potential	mol H ⁺ e	5.71E-02	6.27E-02	3.26E-03	1.23E-01	1.37E-02	1.65E-02	0.00E+00	ND	ND	ND	ND	ND	ND	5.73E-03	2.59E-03	5.21E-03	1.56E-03	-8.63E-03
EP-freshwater ²⁾	kg Pe	7.46E-04	2.14E-04	1.15E-04	1.07E-03	2.95E-04	7.11E-05	0.00E+00	ND	ND	ND	ND	ND	ND	1.83E-05	5.52E-05	1.87E-05	1.82E-05	-4.77E-04
EP-marine	kg Ne	8.24E-03	1.49E-02	1.02E-03	2.41E-02	5.22E-03	4.01E-03	0.00E+00	ND	ND	ND	ND	ND	ND	2.66E-03	8.74E-04	2.42E-03	5.94E-04	-2.04E-03
EP-terrestrial	mol Ne	1.68E-01	1.65E-01	1.08E-02	3.44E-01	5.68E-02	4.75E-02	0.00E+00	ND	ND	ND	ND	ND	ND	2.91E-02	9.51E-03	2.64E-02	6.49E-03	-2.46E-02
POCP (“smog”) ³⁾	kg NMVOCe	4.10E-02	4.75E-02	4.87E-03	9.33E-02	1.74E-02	1.29E-02	0.00E+00	ND	ND	ND	ND	ND	ND	8.68E-03	4.06E-03	7.88E-03	2.33E-03	-7.01E-03
ADP-minerals & metals ⁴⁾	kg Sbe	5.83E-06	5.62E-06	3.03E-06	1.45E-05	5.18E-06	2.10E-04	0.00E+00	ND	ND	ND	ND	ND	ND	2.28E-07	2.69E-06	2.12E-07	3.48E-07	-8.40E-06
ADP-fossil resources	MJ	5.92E+01	4.21E+01	2.47E+01	1.26E+02	2.59E+01	2.61E+01	0.00E+00	ND	ND	ND	ND	ND	ND	8.31E+00	1.16E+01	7.59E+00	5.40E+00	-1.85E+01
Water use ⁵⁾	m ³ e depr.	8.86E-01	1.96E-01	2.16E-01	1.30E+00	2.37E-01	5.25E-01	0.00E+00	ND	ND	ND	ND	ND	ND	2.08E-02	5.71E-02	2.02E-02	3.01E-02	-2.10E+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, EF 3.1

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	2.06E-07	1.82E-07	4.86E-08	4.37E-07	2.41E-07	1.87E-07	0.00E+00	ND	ND	ND	ND	ND	ND	1.63E-07	6.57E-08	1.13E-06	3.55E-08	-1.33E-07
Ionizing radiation ⁶⁾	kBq 11235e	2.33E-01	3.82E-02	3.30E-02	3.05E-01	6.13E-02	1.00E-01	0.00E+00	ND	ND	ND	ND	ND	ND	3.68E-03	1.46E-02	4.78E-03	3.38E-03	-1.24E-01
Ecotoxicity (freshwater)	CTUe	1.84E+01	4.95E+00	4.19E+00	2.75E+01	4.93E+00	3.93E+01	0.00E+00	ND	ND	ND	ND	ND	ND	4.57E-01	1.53E+00	4.73E-01	6.59E-01	-3.70E+01
Human toxicity, cancer	CTUh	3.46E-10	7.01E-10	2.08E-10	1.26E-09	4.37E-10	7.42E-10	0.00E+00	ND	ND	ND	ND	ND	ND	6.53E-11	1.41E-10	6.00E-11	4.05E-11	-3.80E-10
Human tox. non-cancer	CTUh	8.33E-09	1.60E-08	4.71E-09	2.90E-08	1.43E-08	2.53E-08	0.00E+00	ND	ND	ND	ND	ND	ND	1.03E-09	7.31E-09	9.74E-10	9.29E-10	-1.13E-08
SQP ⁷⁾	-	1.52E+01	1.57E+01	2.41E+00	3.33E+01	1.93E+01	3.58E+01	0.00E+00	ND	ND	ND	ND	ND	ND	5.82E-01	7.11E+00	5.36E-01	1.06E+01	-1.56E+01

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	4.12E+00	6.26E-01	1.94E+00	6.69E+00	1.00E+00	1.73E+00	0.00E+00	ND	ND	ND	ND	ND	ND	5.26E-02	1.99E-01	5.93E-02	5.20E-02	-1.63E+00
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	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renew. PER	MJ	4.12E+00	6.26E-01	1.94E+00	6.69E+00	1.00E+00	1.73E+00	0.00E+00	ND	ND	ND	ND	ND	ND	5.26E-02	1.99E-01	5.93E-02	5.20E-02	-1.63E+00
Non-re. PER as energy	MJ	6.30E+01	4.21E+01	2.27E+01	1.28E+02	2.59E+01	2.39E+01	0.00E+00	ND	ND	ND	ND	ND	ND	8.31E+00	1.16E+01	7.59E+00	5.40E+00	-1.85E+01
Non-re. PER as material	MJ	1.26E-01	0.00E+00	2.06E+00	2.19E+00	0.00E+00	-2.06E+00	0.00E+00	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-1.01E-01	-2.52E-02	9.30E-01
Total use of non-re. PER	MJ	6.31E+01	4.21E+01	2.47E+01	1.30E+02	2.59E+01	2.18E+01	0.00E+00	ND	ND	ND	ND	ND	ND	8.31E+00	1.16E+01	7.49E+00	5.37E+00	-1.76E+01
Secondary materials	kg	3.09E+00	2.61E-02	5.57E-03	3.12E+00	2.82E-02	9.54E-02	0.00E+00	ND	ND	ND	ND	ND	ND	3.45E-03	5.31E-03	3.16E-03	1.36E-03	4.49E-03
Renew. secondary fuels	MJ	5.84E-05	1.13E-04	1.77E-03	1.94E-03	1.34E-04	7.36E-05	0.00E+00	ND	ND	ND	ND	ND	ND	9.02E-06	6.71E-05	8.22E-06	2.81E-05	-1.37E-04
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	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	2.58E-02	4.87E-03	5.31E-03	3.60E-02	6.05E-03	6.59E-02	0.00E+00	ND	ND	ND	ND	ND	ND	5.49E-04	1.57E-03	5.30E-04	5.61E-03	-4.87E-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	1.02E-01	1.11E-01	2.98E-02	2.43E-01	9.94E-02	8.84E-02	0.00E+00	ND	ND	ND	ND	ND	ND	9.25E-03	1.68E-02	8.53E-03	5.97E-03	-1.37E-01
Non-hazardous waste	kg	2.32E+00	1.88E+00	2.84E+00	7.03E+00	1.72E+00	2.91E+00	0.00E+00	ND	ND	ND	ND	ND	ND	1.26E-01	3.53E-01	1.24E-01	1.37E-01	-3.03E+00
Radioactive waste	kg	9.84E-05	9.32E-06	8.17E-06	1.16E-04	1.49E-05	8.26E-05	0.00E+00	ND	ND	ND	ND	ND	ND	9.03E-07	3.64E-06	1.19E-06	8.25E-07	-3.01E-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	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.30E-02	0.00E+00	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.41E+02	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	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 ₂ e	1.36E+01	3.27E+00	1.52E+00	1.84E+01	1.94E+00	3.63E+00	-3.71E+00	ND	ND	ND	ND	ND	ND	6.32E-01	8.22E-01	5.76E-01	2.18E-01	-1.40E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1.35E-07	3.83E-08	1.38E-07	3.12E-07	2.01E-08	1.28E-07	0.00E+00	ND	ND	ND	ND	ND	ND	7.70E-09	1.30E-08	7.02E-09	5.05E-09	-1.10E-08
Acidification	kg SO ₂ e	4.51E-02	5.04E-02	2.52E-03	9.80E-02	1.02E-02	1.27E-02	0.00E+00	ND	ND	ND	ND	ND	ND	4.03E-03	1.97E-03	3.67E-03	1.15E-03	-6.71E-03
Eutrophication	kg PO ₄ ³ e	8.93E-03	5.59E-03	2.69E-03	1.72E-02	2.17E-03	3.14E-03	0.00E+00	ND	ND	ND	ND	ND	ND	9.42E-04	5.01E-04	8.56E-04	3.68E-04	-1.40E-03
POCP (“smog”)	kg C ₂ H ₄ e	2.18E-03	2.61E-03	3.57E-04	5.15E-03	7.78E-04	5.73E-04	0.00E+00	ND	ND	ND	ND	ND	ND	3.02E-04	1.88E-04	2.75E-04	1.09E-04	-5.91E-04
ADP-elements	kg Sbe	1.39E-05	5.52E-06	2.92E-06	2.23E-05	5.05E-06	2.10E-04	0.00E+00	ND	ND	ND	ND	ND	ND	2.21E-07	2.63E-06	2.06E-07	3.41E-07	-8.28E-06
ADP-fossil	MJ	6.55E+01	4.15E+01	2.42E+01	1.31E+02	2.49E+01	2.62E+01	0.00E+00	ND	ND	ND	ND	ND	ND	8.25E+00	1.14E+01	7.51E+00	5.34E+00	-1.65E+01

ADDITIONAL INDICATOR – GWP-GHG

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 ₂ e	1.45E+01	3.28E+00	1.51E+00	1.93E+01	1.95E+00	3.67E+00	-3.71E+00	ND	ND	ND	ND	ND	ND	6.35E-01	8.27E-01	5.79E-01	2.20E-01	-1.41E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO₂ is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Heat production, natural gas, at boiler fan burner non-modulating <100kW, Albania, Ecoinvent, 0.0801 kgCO₂e/MJ
2. Diesel, burned in building machine, World, Ecoinvent, 0.10 kgCO₂e/MJ
3. Electricity production, hydro, pumped storage, United Kingdom, Ecoinvent, 0.48 kgCO₂e/kWh
4. Heat and power co-generation, biogas, gas engine, United Kingdom, Ecoinvent, 0.81 kgCO₂e/kWh
5. Electricity production, wind, 1-3MW turbine, offshore, United Kingdom, Ecoinvent, 0.0165 kgCO₂e/kWh
6. Electricity production, wind, 1-3MW turbine, onshore, United Kingdom, Ecoinvent, 0.0141 kgCO₂e/kWh
7. Electricity production, photovoltaic, 570kWp open ground installation, multi-Si, United Kingdom, Ecoinvent, 0.0802 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight train, 161.5 km
2. Market for transport, freight, lorry >32 metric ton, EURO6, 32.0 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	1310
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	-
Water use (m ³)	-
Ancillary materials: type and mass (kg)	Cement mortar (One Click LCA) – 11.52 kg
Waste materials: type and mass (kg)	Polyethylene - 0.056 kg
Waste materials: output routes	Polyethylene - recycled (40 %), incinerated (37 %), landfilled (23 %). Source: EUROSTAT Distance: 50 km
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	-
Collection process: Mixed waste (kg)	164.65 kg concrete blocks 11.52 kg installation mortar
Recovery: re-use (kg)	-
Recovery: recycling (kg)	131.7 kg concrete blocks 9.22 kg installation mortar
Recovery: energy recovery (kg)	-
Disposal (kg)	32.93 kg concrete blocks 2.3 kg installation mortar
Scenario assumptions e.g. transportation (mode, km) & other	Disposal / Landfill area is estimated as 25 km

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 15804+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

Magaly Gonzalez Vazquez as an authorized verifier for EPD Hub Limited
14.08.2026

