

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Lignacite ECO Medium Dense 7.3N 100
Lignacite Ltd



EPD HUB, HUB-7900
Published on 22.10.2026, last updated on 22.10.2026, valid until 21.10.2031

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	Lignacite Ltd
Address	Norfolk House, High Street, Brandon, Suffolk, United Kingdom, IP270AX
Contact details	brandonsales@lignacite.co.uk
Website	www.lignacite.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	Marvyn Candler, Lignacite Ltd
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Ipek Goktas as an authorized verifier for EPD Hub

This EPD is intended for business-to-business 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	Lignacite ECO Medium Dense 7.3N 100
Additional labels	E1007 - 440x100x215
Product reference	E1007
Place(s) of raw material origin	UK
Place of production	Nazeing, Essex, United Kingdom / Brandon, Suffolk, United Kingdom
Place(s) of installation and use	UK
Period for data	01/01/2025 to 31/12/2025
Averaging in EPD	Multiple factories
Variation in GWP-fossil for A1-A3 (%)	0.61
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	98.4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1m2
Declared unit mass	149 kg
Mass of packaging	0.023 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	16.4
GWP-total, A1-A3 ($kgCO_2e$)	5.6
Secondary material, inputs (%)	85.1
Total energy use, A1-A3 (kWh)	26
Net freshwater use, A1-A3 (m^3)	0.02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Lignacite Ltd is a UK manufacturer of concrete masonry products, operating production facilities in Brandon, Suffolk and Nazeing, Essex. The company supplies a wide range of concrete and wood-concrete blocks to the construction industry and promotes the use of recycled and secondary materials in its manufacturing processes.
This EPD represents one product manufactured at two production sites. Environmental impacts are calculated as a weighted average based on production volumes. Site-specific differences include raw material transport distances, energy supply, and waste generation.

PRODUCT DESCRIPTION

Medium density fine textured concrete blocks available in paint grade finish. Suitable for use in commercial, industrial and leisure projects.
The declared unit is 1 m² of product with a nominal thickness of 100 mm, corresponding to a volume of 0.10 m³ per declared unit and a mass of approximately 149 kg.
• Robust and durable
• Excellent sound reduction
• High periods of fire resistance
• Low air permeability resulting in thermally efficient buildings
• Strong background for heavy duty fixings
Lignacite blocks are medium grey in colour with a fine textured surface. Lignacite blocks are suitable for use in commercial, industrial and leisure projects. Fair-Faced blocks are recommended for internal use. They can be used in the following locations:
• External cavity walls
• Internal partitions
• Fire break walls
• Separating walls
A revolutionary eco-friendly block, guaranteed to contain at least 90% recycled material, delivering performance without compromising the environment.

Further information can be found at:
www.lignacite.co.uk

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	96	UK
Fossil materials	0	-
Bio-based materials	4	UK

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	3
Biogenic carbon content in packaging, kg C	0

1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1m2
Mass per declared unit	149 kg
Functional unit	1m2 of concrete block with a service life of 100 years (BS EN 1996-1-2 2024 - Eurocode 6 — Design of masonry structures)
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

A5 is not fully declared. Waste processing (from collection through to end-of-waste or final disposal) and full energy and biogenic carbon balancing are accounted for. Storage, product wastage, and installation into the building are excluded.

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 Concrete block production starts by transporting the binders, aggregates and additives to silos, from where they are dosed onto a conveyor and into a mixer. Cement is then added to the ingredients, after which the material is mixed dry. Water is then added to the mixture, followed by wet mixing. The wet mass is filled into molds and vibrated to its final shape. The blocks are then transported on an automatic line to a dryer. From the dryer, the ingots go to the packaging line, where they are banded and taken for storage.
The study also considers the material losses occurring during the manufacturing processes. The average distance of 50 kilometres is considered for transferring waste to the waste processing centre. Energy is provided from both renewable energy sources and the UK grid.Plastic strapping is used for packaging the product.
Specific data percentage is calculated automatically by the One Click LCA EPD Generator. EPD-based datasets are treated as 100% specific data within this calculation, irrespective of the proportion of primary or manufacturer-specific data reported in the underlying EPD. Consequently, the reported percentage may overestimate the actual proportion of primary data used within the assessment.
Secondary materials
Recycled silica sand and recycled foamed glass are used as secondary materials. These are sourced from recovered industrial or post-consumer waste streams and processed into usable construction materials.
Following recovery and processing, these materials are considered to have reached end-of-waste status and are modelled in accordance with the cut-off approach. Only impacts associated with processing and transport are included.
Energy balance
The energy content of materials has been considered in accordance with EN 15804+A2. The product contains biogenic material (sawdust), contributing renewable energy content, while packaging materials include fossil-based energy.
Energy inputs and stored energy are consistently accounted for across the life cycle stages and reflected in the primary energy indicators. Energy content is transferred through Modules C and D where applicable, in line with the mass balance principle.
Biogenic carbon
Biogenic carbon associated with the sawdust content of the product is accounted for in accordance with EN 15804+A2. CO_2 uptake during biomass growth is included in Modules A1–A3 and is balanced by emissions at end-of-life.
Biogenic carbon from HVO fuel is released during combustion and is reported under GWP-biogenic.
All biogenic carbon flows are modelled in accordance with the mass balance principle.

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.
A5 is not in scope. Only packaging waste is accounted for in this module.

The transportation distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as 89.7 km and the transportation method is assumed to be lorry. A load factor of 50% has been applied to reflect realistic transport conditions for heavy construction products, where volume and weight constraints limit full capacity utilisation.In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty return trips are included in the transport datasets used in the model. Therefore, no additional modelling or exclusion of empty returns

has been applied. Transportation does not cause losses as product are packaged properly. Also, volume capacity utilisation factor is assumed to be 50 % for the nested packaged products, which includes empty returns. Products are transported as strapped packs without pallets. Typical transport pack configurations comprise 72 blocks (100 mm products). The resulting transported product density is approximately 1,570 kg/m³ and has therefore been used as the bulk density for the transport scenario.
All packaging waste is assumed to be sent for recycling.Transportation distance to the closest disposal area is estimated as 50 km and the transportation method is lorry which is the most common.
All the packaging waste will be transferred 50 kilometres to the waste processing centre. Installation of the product is a manual process and no energy is consumed at this stage.

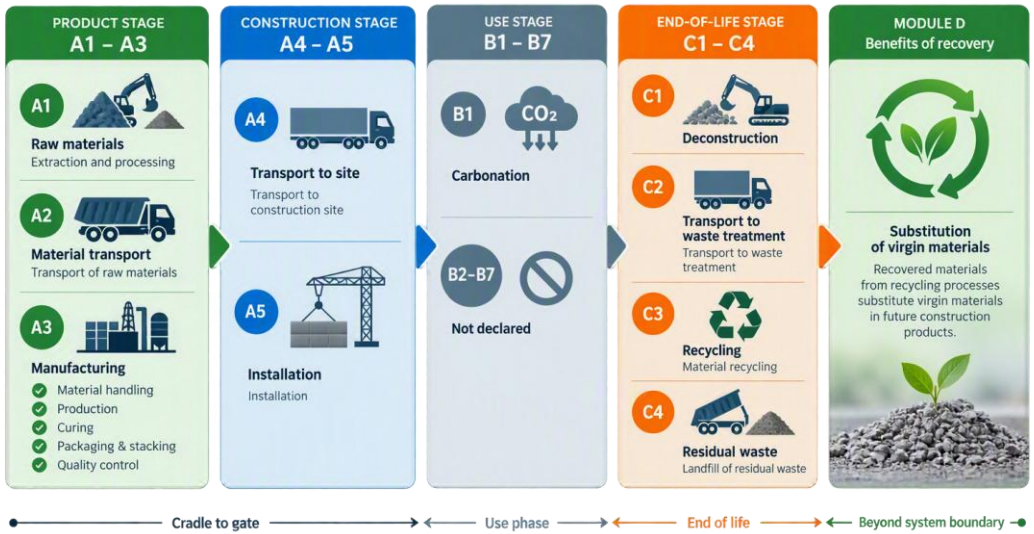
PRODUCT USE AND MAINTENANCE (B1-B7)

The reference service life (RSL) is assumed to be 100 years, based on typical use conditions for concrete products and relevant standards.
Carbonation of concrete has been considered in accordance with EN 16757. CO_2 uptake is estimated based on product composition, service life, and exposure conditions.
Use stage (Modules B1–B7)
Module B1 (use phase) includes potential carbonation of concrete, which has been considered where relevant.
Modules B2–B7 (maintenance, repair, replacement, refurbishment, operational energy use, and operational water use) are not relevant for the declared product, as it does not require maintenance, does not consume energy or water during use, and does not undergo replacement within the reference service life.
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 90% of the waste is assumed to be collected as separate construction waste and recycled, with just 10% expected to landfill. 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. It is assumed the mass of the waste blocks per m2 will be the same as the declared value. 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 50 km and the transportation method is lorry which is the most common. It is assumed that the end of life stage is for the UK only. None of our blocks are exported outside of the UK.
Secondary materials are considered to reach end-of-waste status after undergoing processing (e.g. crushing and grading) that enables their use as construction products. These processing steps are included within modules A1–A3. Prior to this point, materials are treated as waste and carry no upstream burden.

LIFE CYCLE FLOW DIAGRAM



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 end-of-life management are included. Water used for cleaning and maintenance of the equipment are also included.
Module A5 includes the processing and transport of packaging waste. Installation activities, product wastage and storage are excluded in accordance with the cut-off criteria applied in this study.
Up to 15kg of mass per m2 of product are lost due to moisture evaporation as part of the curing process. This is reflected in the mass balancing calculations.
Co-products
No co-products are generated within the system boundary. Therefore, no co-product allocation has been applied, and all environmental impacts are assigned entirely to the declared product.

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	Physical Properties
Packaging material	Physical Properties
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

Secondary materials and co-product inputs
The product includes secondary materials. Where these are classified as waste, they are modelled without upstream environmental burdens in accordance with the cut-off approach.
For materials originating from industrial processes, any allocation of impacts between co-products has already been accounted for in the background datasets used.

No additional co-product allocation is required within the system boundary. The data quality assessment considers technological, geographical, and temporal representativeness. Overall, data quality is assessed as good to very good.
EN 15804+A2 is the current applicable standard and is used as the basis for the main environmental impact results presented in this EPD.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple factories
Grouping method	Based on average results of product group - by total volume
Variation in GWP-fossil for A1-A3, %	0.61

Differences between sites include transport distances, energy consumption, and operational efficiencies. These have been incorporated through parameter averaging. Based on internal assessment, variability between sites is considered [low/moderate], and the averaged dataset is representative of overall production.

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‘.

EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations.
ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines.
BS EN 1996-1-2 2024 - Eurocode 6 — Design of masonry structures
Ecoinvent v3.10.1 and Ecoinvent 3.12 database.
EN 16757
One Click LCA database, accessed 2026.
Lignacite production data
Lignacite energy consumption data
Supplier material composition data

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_2e	3.25E+00	1.84E+00	5.09E-01	5.60E+00	1.33E+00	1.46E-02	-1.31E+00	ND	ND	ND	ND	ND	ND	7.21E-01	7.64E-01	7.43E+00	1.09E+00	-1.01E-01
GWP – fossil	kg CO_2e	1.41E+01	1.83E+00	5.11E-01	1.64E+01	1.90E+00	1.45E-02	-1.31E+00	ND	ND	ND	ND	ND	ND	7.21E-01	7.63E-01	5.90E-01	3.30E-01	-1.01E-01
GWP – biogenic	kg CO_2e	-1.08E+01	4.24E-04	-2.85E-03	-1.08E+01	-5.88E-01	1.23E-04	0.00E+00	ND	ND	ND	ND	ND	ND	1.17E-04	3.86E-04	6.84E+00	7.60E-01	-1.16E-04
GWP – LULUC	kg CO_2e	1.82E-03	8.55E-04	2.23E-04	2.90E-03	2.72E-02	1.24E-05	0.00E+00	ND	ND	ND	ND	ND	ND	7.29E-05	2.86E-04	5.96E-05	8.06E-04	-9.31E-05
Ozone depletion pot.	kg $CFC\text{-}_{11}e$	2.88E-07	2.95E-08	1.53E-08	3.33E-07	4.74E-08	5.09E-10	0.00E+00	ND	ND	ND	ND	ND	ND	1.11E-08	1.74E-08	9.07E-09	8.64E-09	-8.39E-10
Acidification potential	mol H^+e	3.46E-02	4.67E-03	1.33E-03	4.05E-02	1.58E-02	3.99E-05	0.00E+00	ND	ND	ND	ND	ND	ND	6.44E-03	1.82E-03	5.27E-03	2.53E-03	-6.32E-04
EP-freshwater[2)]	kg Pe	8.32E-04	1.47E-04	1.54E-04	1.13E-03	2.61E-04	4.41E-06	0.00E+00	ND	ND	ND	ND	ND	ND	2.31E-05	5.93E-05	1.89E-05	3.27E-04	-3.36E-05
EP-marine	kg Ne	3.43E-04	1.19E-03	3.99E-04	1.93E-03	1.18E-02	1.08E-05	0.00E+00	ND	ND	ND	ND	ND	ND	3.02E-03	5.02E-04	2.47E-03	6.99E-04	-1.53E-04
EP-terrestrial	mol Ne	1.16E-01	1.28E-02	3.58E-03	1.32E-01	6.27E-02	7.12E-05	0.00E+00	ND	ND	ND	ND	ND	ND	3.30E-02	5.41E-03	2.70E-02	7.38E-03	-1.84E-03
POCP ("smog")[3)]	kg NMVOCe	2.94E-02	7.08E-03	1.18E-03	3.77E-02	7.56E-03	2.36E-05	0.00E+00	ND	ND	ND	ND	ND	ND	9.90E-03	3.16E-03	8.10E-03	2.72E-03	-5.07E-04
ADP-minerals & metals[4)]	kg Sbe	3.76E-06	5.31E-06	8.82E-07	9.95E-06	6.67E-06	9.39E-08	0.00E+00	ND	ND	ND	ND	ND	ND	2.62E-07	2.29E-06	2.14E-07	7.60E-07	-6.13E-07
ADP-fossil resources	MJ	5.55E+01	2.76E+01	1.06E+01	9.37E+01	2.58E+01	1.20E-01	0.00E+00	ND	ND	ND	ND	ND	ND	9.35E+00	1.15E+01	7.65E+00	6.48E+00	-1.25E+00
Water use[5)]	m^3e depr.	6.88E-01	1.36E-01	1.00E-01	9.24E-01	9.58E-01	4.12E-03	0.00E+00	ND	ND	ND	ND	ND	ND	2.34E-02	6.63E-02	1.92E-02	2.11E-01	-1.57E-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, 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	2.88E-07	1.80E-07	9.64E-09	4.78E-07	2.22E-07	2.60E-10	0.00E+00	ND	ND	ND	ND	ND	ND	1.84E-07	7.54E-08	1.15E-06	3.72E-08	-1.01E-08
Ionizing radiation[6)]	kBq U235e	4.01E-01	2.40E-02	2.07E-01	6.32E-01	3.76E-02	2.14E-03	0.00E+00	ND	ND	ND	ND	ND	ND	3.91E-03	1.21E-02	3.20E-03	4.41E-02	-8.36E-03
Ecotoxicity (freshwater)	CTUe	2.21E+00	3.88E+00	9.13E-01	7.00E+00	2.14E+01	6.32E-02	0.00E+00	ND	ND	ND	ND	ND	ND	9.49E-01	1.63E+00	7.76E-01	2.60E+00	-3.52E-01
Human toxicity, cancer	CTUh	2.86E-08	3.06E-10	5.74E-11	2.89E-08	7.05E-10	1.10E-11	0.00E+00	ND	ND	ND	ND	ND	ND	6.92E-11	1.22E-10	5.66E-11	1.08E-10	-2.58E-11
Human tox. non-cancer	CTUh	9.17E-07	1.78E-08	2.42E-09	9.38E-07	6.15E-08	2.18E-09	0.00E+00	ND	ND	ND	ND	ND	ND	1.23E-09	7.11E-09	1.00E-09	5.21E-09	-8.22E-10
SQP[7)]	-	1.64E+02	2.78E+01	1.05E+00	1.93E+02	7.40E+01	4.61E-02	0.00E+00	ND	ND	ND	ND	ND	ND	6.45E-01	1.16E+01	5.28E-01	1.05E+02	-1.17E+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	-2.36E+01	3.78E-01	2.20E-01	-2.30E+01	2.91E+00	2.55E-02	0.00E+00	ND	ND	ND	ND	ND	ND	5.85E-02	1.77E-01	4.78E-02	-3.02E+01	-1.15E-01
Renew. PER as material	MJ	1.40E+01	0.00E+00	0.00E+00	1.40E+01	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	-9.60E+00	3.78E-01	2.20E-01	-9.00E+00	2.91E+00	2.55E-02	0.00E+00	ND	ND	ND	ND	ND	ND	5.85E-02	1.77E-01	4.78E-02	-3.02E+01	-1.15E-01
Non-re. PER as energy	MJ	5.55E+01	2.76E+01	9.78E+00	9.29E+01	2.52E+01	-7.40E-01	0.00E+00	ND	ND	ND	ND	ND	ND	9.35E+00	1.15E+01	7.65E+00	6.48E+00	-1.25E+00
Non-re. PER as material	MJ	0.00E+00	0.00E+00	7.54E-01	7.54E-01	0.00E+00	-7.54E-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
Total use of non-re. PER	MJ	5.55E+01	2.76E+01	1.05E+01	9.36E+01	2.52E+01	-1.49E+00	0.00E+00	ND	ND	ND	ND	ND	ND	9.35E+00	1.15E+01	7.65E+00	6.48E+00	-1.25E+00
Secondary materials	kg	1.27E+02	1.17E-02	1.13E-03	1.27E+02	1.18E-02	3.62E-05	0.00E+00	ND	ND	ND	ND	ND	ND	3.87E-03	4.86E-03	3.17E-03	2.27E-03	-1.41E-03
Renew. secondary fuels	MJ	1.45E+01	1.49E-04	6.31E-04	1.45E+01	1.57E-04	9.61E-07	0.00E+00	ND	ND	ND	ND	ND	ND	1.02E-05	6.42E-05	8.32E-06	4.21E-05	-1.03E-05
Non-ren. secondary fuels	MJ	9.44E+00	0.00E+00	0.00E+00	9.44E+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	2.21E-02	4.15E-03	-1.30E-03	2.49E-02	2.30E-02	8.90E-05	0.00E+00	ND	ND	ND	ND	ND	ND	5.62E-04	1.53E-03	4.60E-04	-3.99E-02	-3.63E-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	2.23E-02	4.65E-02	5.34E-02	1.22E-01	1.52E-01	2.72E-03	0.00E+00	ND	ND	ND	ND	ND	ND	3.03E-02	6.57E-02	2.48E-02	3.59E-02	-2.50E-02
Non-hazardous waste	kg	5.72E-01	8.61E-01	4.87E+00	6.30E+00	1.10E+00	4.33E-02	0.00E+00	ND	ND	ND	ND	ND	ND	1.51E-01	1.36E+00	1.24E-01	4.89E+01	-2.02E-01
Radioactive waste	kg	1.01E-05	5.87E-06	4.71E-05	6.31E-05	8.99E-06	5.39E-07	0.00E+00	ND	ND	ND	ND	ND	ND	9.18E-07	2.91E-06	7.51E-07	1.10E-05	-2.00E-06

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	2.22E-02	0.00E+00	0.00E+00	2.22E-02	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.34E+02	6.00E+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	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 – Electricity	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
Exported energy – Heat	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

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	1.87E-01	1.82E+00	5.09E-01	2.52E+00	1.91E+00	1.44E-02	-1.31E+00	ND	ND	ND	ND	ND	ND	7.17E-01	7.58E-01	5.86E-01	3.28E-01	-1.01E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acidification	kg SO_2e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eutrophication	kg PO_4^3e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP (“smog”)	kg C_2H_4e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-elements	kg Sbe	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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_2e	1.41E+01	1.84E+00	5.11E-01	1.64E+01	1.92E+00	1.45E-02	-1.31E+00	ND	ND	ND	ND	ND	ND	7.21E-01	7.63E-01	5.90E-01	3.30E-01	-1.01E-01

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. Electricity, medium voltage, residual mix, United Kingdom, Ecoinvent, 0.51 kgCO2e/kWh
2. Market for diesel, low-sulfur, europeWithoutSwitzerland, Ecoinvent, 0.99 kgCO2e/kg
3. Esterification of rape oil, europeWithoutSwitzerland, Ecoinvent, -0.724731 kgCO2e/kg
4. Direct emission to air: Carbon dioxide, fossil, World, One Click LCA, 1.00 kgCO2e/kg
5. Direct emission to air: Carbon dioxide, non-fossil, World, One Click LCA, 1.00 kgCO2e/kg
6. Direct emission to air: Carbon monoxide, fossil, World, One Click LCA
7. Direct emission to air: Hydrocarbons, aliphatic, unsaturated, World, One Click LCA
8. Direct emission to air: Nitrogen oxides, World, One Click LCA
9. Direct emission to air: Particulate Matter, < 2.5 um, World, One Click LCA
10. Electricity, medium voltage, residual mix, United Kingdom, Ecoinvent, 0.51 kgCO2e/kWh
11. Market for diesel, low-sulfur, europeWithoutSwitzerland, Ecoinvent, 0.99 kgCO2e/kg
12. Esterification of rape oil, europeWithoutSwitzerland, Ecoinvent, -0.724731 kgCO2e/kg
13. Direct emission to air: Carbon dioxide, fossil, World, One Click LCA, 1.00 kgCO2e/kg
14. Direct emission to air: Carbon dioxide, non-fossil, World, One Click LCA, 1.00 kgCO2e/kg
15. Direct emission to air: Carbon monoxide, fossil, World, One Click LCA
16. Direct emission to air: Hydrocarbons, aliphatic, unsaturated, World, One Click LCA
17. Direct emission to air: Nitrogen oxides, World, One Click LCA
18. Direct emission to air: Particulate Matter, < 2.5 um, World, One Click LCA

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO6, 89.7 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	149
Volume capacity utilization factor	<1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	Not declared
Water use (m^3)	Not declared
Ancillary materials: type and mass (kg)	Not declared
Waste materials: type and mass (kg)	Plastic strapping: 0.023 kg
Waste materials: output routes	100% recycling
Direct emissions (kg)	Not declared

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	149 Kg
Collection process: Mixed waste (kg)	0 Kg
Recovery: re-use (kg)	0
Recovery: recycling (kg)	140
Recovery: energy recovery (kg)	0
Disposal (kg)	14.9
Scenario assumptions e.g. transportation (mode, km) & other	50 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

Ipek Goktas as an authorized verifier for EPD Hub Limited 22.10.2026



