



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Ash flooring
Grosvenor TimberWorks



EPD HUB, HUB-6545

Published on 29.05.2026, last updated on 29.05.2026, valid until 28.05.2031

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	Grosvenor TimberWorks
Address	Hatton Heath Mill Platts Lane, Hatton Heath, Chester, CH3 9AN, United Kingdom
Contact details	ruralestates.enquiries@grosvenor.com
Website	https://www.grosvenor.com/rural-estates/grosvenor-timberworks-9bf3c3847dadb6b87ea26b8cc19ef608

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.

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
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Georgia Maryon, Grosvenor Rural Estates
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Vera Durão, as an authorised verifier acting for EPD Hub Limited

PRODUCT

Product name	Ash flooring
Additional labels	Ash (hardwood)
Product reference	-
Place(s) of raw material origin	United Kingdom
Place of production	Hatton Heath Mill Platts Lane, Hatton Heath, Chester, CH3 9AN, United Kingdom
Place(s) of installation and use	United Kingdom
Period for data	01-01-2024 to 31-12-2024
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 (%)	56.4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m ² of ash flooring
Declared unit mass	13.4 kg
Mass of packaging	0.0147 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1.09
GWP-total, A1-A3 (kgCO ₂ e)	-20.5
Secondary material, inputs (%)	0.02
Total energy use, A1-A3 (kWh)	36.6
Net freshwater use, A1-A3 (m ³)	-0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

From our state-of-the art facility in Cheshire, England, Grosvenor Timberworks manufacture a range of specialist, high-quality products only using timbers which are sustainably sourced from British woodlands:

- We are the UK's only producer of British C24+ graded spruce, structural timbers which can bear the heaviest loads
- Garden and landscaping materials
- Solid hardwood flooring and worktops
- Sustainable fuels including firewood and biomass

We're set apart by our ability to access a wide variety of wood species whose provenance, can be demonstrated to within a hectare of British woodland. This, combined with our bespoke sawmilling service, gives us the ability to provide more choice of textures, finishes and sizes.

PRODUCT DESCRIPTION

This hardwood flooring is sourced from sustainable forest management from Scotland, Wales and England regions. They can be installed both as glueless floating floors for residential buildings or glued-down floors for commercial areas with heavy load and foot traffic. Available in 20 mm thickness and a variety of color. No finishing occurs at Hatton Heath sawmill, therefore this flooring is to be finished on site. Provide outstanding strength, durability and stability. Certification to FSC® standard.

Further information can be found at:

<https://www.grosvenor.com/rural-estates/grosvenor-timberworks-9bf3c3847dadb6b87ea26b8cc19ef608>

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	5.98
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m ² of ash flooring
Mass per declared unit	13.4 kg
Functional unit	-
Reference service life	-

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	ND	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.

Sawn logs are sourced from Grosvenor's own sustainably managed forests within the United Kingdom. Transport of raw materials (A2) is modelled using typical road haulage distances assumed based on known operational data and One Click LCA default datasets.

The manufacturing process takes place at Hatton Heath sawmill, where logs are cut into cants, air dried, and kiln dried using biomass heat. The dried timber is graded and machined into tongue-and-groove boards, then finished by filing and sanding. Products are wrapped in plastic and secured with banding for distribution.

Production losses are accounted for during sawing, drying, and machining processes. These losses consist primarily of sawdust. This sawdust is then transferred to Grosvenor Farms Limited to be used as animal bedding. In line with the cut-off approach, these flows are treated as waste leaving the system at the end-of-waste state, with no additional burdens or benefits allocated beyond this point.

Energy use in manufacturing includes electricity for machinery and lighting and biomass heat for kiln drying. The electricity supply is modelled using the UK residual grid mix. On site solar panels have been represented through the incorporation of photovoltaic electricity within the model.

For manufacturing waste (A3), it is assumed that 100% of wood-based process residues are separately collected. A proportion is reused as secondary material (e.g. bedding applications), while remaining fractions follow generic waste treatment routes consistent with EN 15804+A2 modelling principles and Ecoinvent datasets. Transport of manufacturing waste is modelled using standard assumptions for local waste handling, with distances aligned to typical UK waste management practices and default database values.

Overall, the modelling of raw material transport, production losses, energy use, and waste treatment is consistent with EN 15804+A2, the applicable PCR.

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.

Transport to the installation site (A4) is modelled using road freight transport (lorry >32 tonnes, EURO 6) with the distance used being based on known operational data. Variations in transport distances and load factors are considered to have a minor influence on overall results; return trips are conservatively assumed to be empty in accordance with generic Ecoinvent transport datasets.

Installation (A5) of the flooring product does not require significant energy consumption or the use of auxiliary materials at the point of installation, as processes such as finishing (e.g. sealing or coating) are carried out separately on-site and are excluded from the declared product system boundary. Therefore, no direct energy use or consumables are included for installation.

Installation losses are estimated at 15% due to cutting and fitting, based on standard construction practice assumptions. This waste, together with packaging materials, is assumed to be separately collected and transported to local waste treatment facilities within a 100 km radius. Approximately 24% of the waste is sent to landfill, while the remaining 76% is directed to recycling or incineration with energy recovery. Transport of A5 waste is modelled using representative UK road transport scenarios aligned with generic database values.

PRODUCT END OF LIFE (C1-C4, D)

End-of-life scenarios are modelled assuming 100% separate collection of the product at deconstruction, in line with EN 15804+A2 requirements.

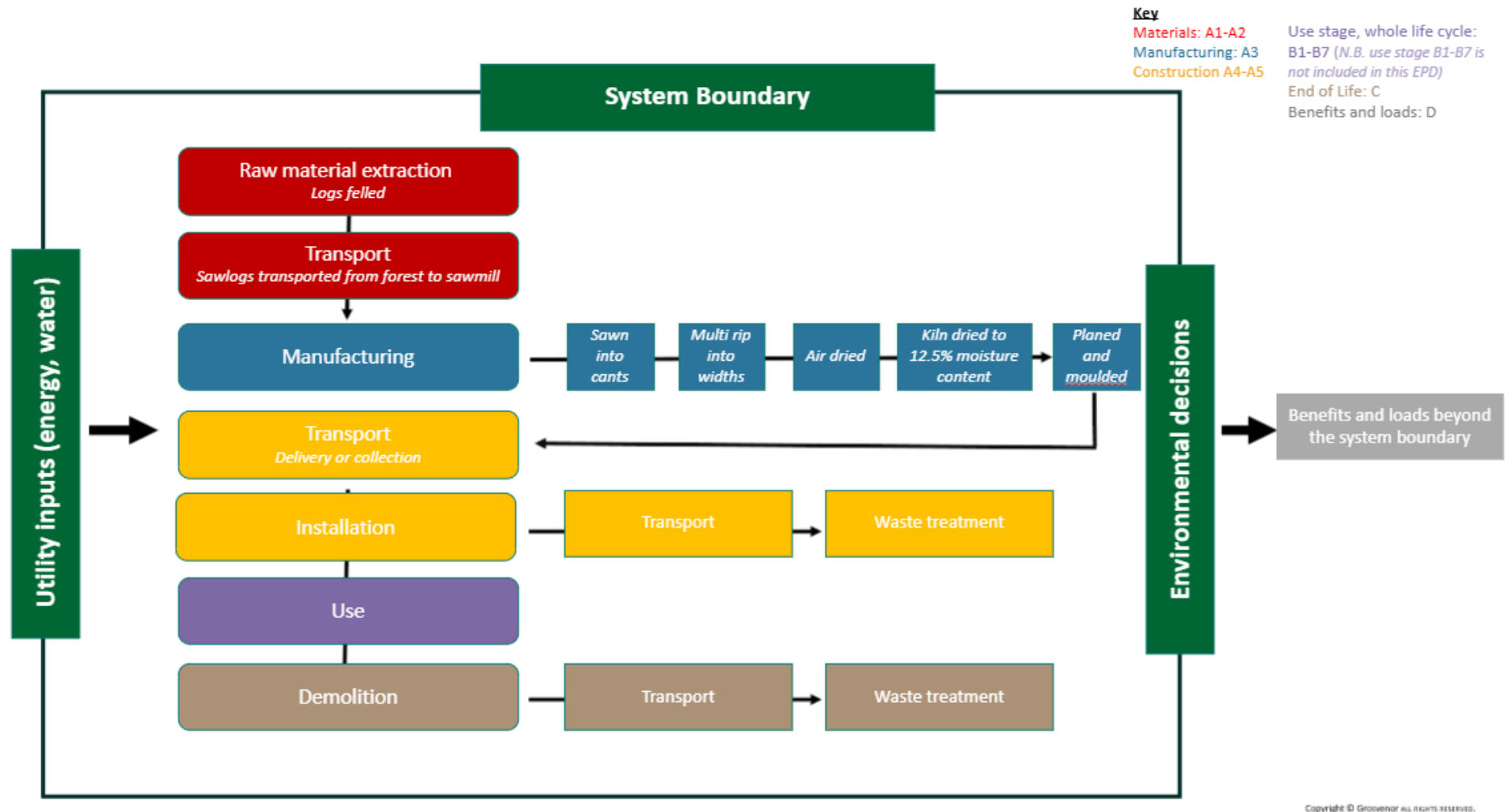
Demolition (C1) is assumed to involve mechanical removal processes with low energy demand; energy consumption for deconstruction activities is considered minimal and is modelled using representative default datasets for comparable construction products.

The system boundary for stages C1–C4 includes all processes from deconstruction, transport, waste processing, and final disposal. Transport to waste processing facilities (C2) is modelled assuming a 100 km distance using standard road freight transport scenarios. Waste processing (C3) and disposal (C4) are based on the Eurostat & BuildLCA (2020) dataset for hardwood, applied consistently in the LCA model, whereby approximately 50% of the product is directed to incineration with energy recovery, 26% to recycling, and 24% to landfill. All associated loads from these processes (including transport, sorting, shredding, incineration, and disposal) are fully attributed to the product system up to the end-of-waste state.

The end-of-waste state is defined as the point at which processed wood waste (e.g. sorted and shredded) and packaging materials meet technical and quality requirements to be used as secondary materials or fuels. Beyond this system boundary, Module D accounts for potential benefits and loads associated with reuse, recycling, and energy recovery in accordance with EN 15804+A2.

In Module D, recycled wood and packaging materials are assumed to substitute equivalent virgin materials on a mass basis, while energy recovered from wood incineration is assumed to substitute conventional heat and/or electricity production. The substituted processes are modelled using representative datasets from Ecoinvent and One Click LCA databases, consistent with the “allocation, cut-off” system model. The net benefits reported in Module D reflect the avoided burdens from primary material production and fossil-based energy generation.

SYSTEM DIAGRAM



Copyright © GROSVENOR ALL RIGHTS RESERVED.

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.

No modules or processes required under EN 15804:2012+A2:2019 and the applicable PCR have been excluded.

Excluded processes are limited to capital goods, infrastructure, and personnel-related, administrative, and office activities. These have been quantified in accordance with the cut-off criteria and are estimated to contribute less than 5% of total environmental impacts. The dataset achieves an overall data representativity of 57.8% based on primary, site-specific data.

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

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution, and end-of-life stages.

PRODUCT & MANUFACTURING SITES GROUPING

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

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'.

Inventory data of wooden raw materials has been collected for the total sourced wooden materials. Since the percentage of weight loss across wood processing stages varies, volumetric analysis was applied based on the quantity of sawdust and woodchip sold alongside the mass of the final product. Primary data relating to wood (oak) density has been derived from manufacturer-specific knowledge (Grosvenor Timberworks, 2024). National Grid electricity residual mix has been sourced from the OCL Ecoinvent database. One Click LCA (2024).

Residual mix of electricity data production. Available at: <https://oneclicklca.com/en/resources/articles/lca-dataresidual-mix-of-electricity-data-production>

The Life Cycle Assessment has been conducted in accordance with EN 15804:2012+A2:2019/AC:2021, ISO 14025, and ISO 14040/14044, and follows the requirements of the EPD Hub Core PCR v1.2 (2025). Background data and environmental impact modelling are based on Ecoinvent database (v3.10.1/3.11/3.12) and One Click LCA databases, applying the 'allocation, cut-off, EN 15804+A2' methodology and JRC Environmental Footprint (EF 3.1) characterisation factors.

Additional reference data have been used to support specific assumptions. Lubricating oil density has been derived from Shell Global (n.d.) Shell Tellus Lubricating Oil – Safety Data Sheets (typical density range 0.86–0.89 g/cm³). Biomass energy content and supply assumptions are informed by International Renewable Energy Agency (IRENA, 2019) and Forest Research (typical calorific value of 870 kWh/m³). Packaging material density assumptions for LDPE are based on Mark, J. (ed.) (1999) Polymer Data Handbook.

End-of-life modelling assumptions are based on EN 17213:2018 (Annex B), supplemented by literature values for demolition energy. The energy required for deconstruction has been assumed as 0.323 MJ/kg for wood structures, based on Athena Sustainable Materials Institute (1997) Demolition Energy Analysis of Office Building Systems, as referenced in Gervasio, H. and Dimova, S. (2018) JRC Technical Report: Model for Life Cycle Assessment (LCA) of buildings. Transport and process datasets (including EURO6 lorry transport and fuel combustion) are sourced from Ecoinvent datasets, with UK-specific electricity mixes applied where relevant.

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	-2.38E+01	7.77E-02	3.29E+00	-2.05E+01	3.65E-01	2.95E-01	ND	ND	ND	ND	ND	ND	ND	4.34E-01	2.19E-01	1.65E+01	5.21E+00	-7.10E+00
GWP – fossil	kg CO ₂ e	3.11E-01	7.76E-02	7.01E-01	1.09E+00	3.65E-01	2.93E-01	ND	ND	ND	ND	ND	ND	ND	4.34E-01	2.19E-01	1.28E-01	3.65E-02	-9.37E-01
GWP – biogenic	kg CO ₂ e	-2.42E+01	1.70E-05	2.59E+00	-2.16E+01	7.97E-05	-6.79E-07	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.64E+01	5.18E+00	-6.16E+00
GWP – LULUC	kg CO ₂ e	1.23E-02	3.02E-05	3.23E-04	1.27E-02	1.42E-04	1.96E-03	ND	ND	ND	ND	ND	ND	ND	4.44E-05	9.81E-05	9.98E-05	2.31E-05	-3.43E-03
Ozone depletion pot.	kg CFC-11e	4.79E-09	1.62E-09	2.44E-08	3.08E-08	7.61E-09	6.62E-09	ND	ND	ND	ND	ND	ND	ND	6.64E-09	3.24E-09	1.57E-09	9.28E-10	-2.66E-08
Acidification potential	mol H ⁺ e	1.68E-03	1.83E-04	5.25E-03	7.11E-03	8.61E-04	1.53E-03	ND	ND	ND	ND	ND	ND	ND	3.91E-03	7.48E-04	1.20E-03	2.54E-04	-5.80E-03
EP-freshwater ²⁾	kg Pe	2.29E-04	5.42E-06	7.39E-05	3.08E-04	2.55E-05	6.67E-05	ND	ND	ND	ND	ND	ND	ND	1.25E-05	1.71E-05	6.57E-05	2.79E-05	-8.04E-04
EP-marine	kg Ne	7.08E-04	4.80E-05	2.61E-03	3.36E-03	2.26E-04	8.44E-04	ND	ND	ND	ND	ND	ND	ND	1.82E-03	2.46E-04	5.95E-04	1.18E-03	-1.37E-03
EP-terrestrial	mol Ne	6.96E-03	5.19E-04	2.37E-02	3.12E-02	2.44E-03	6.48E-03	ND	ND	ND	ND	ND	ND	ND	1.99E-02	2.67E-03	5.70E-03	1.05E-03	-1.35E-02
POCP (“smog”) ³⁾	kg NMVOCe	5.72E-03	3.18E-04	7.42E-03	1.35E-02	1.50E-03	2.69E-03	ND	ND	ND	ND	ND	ND	ND	5.93E-03	1.10E-03	1.45E-03	4.26E-04	-4.15E-03
ADP-minerals & metals ⁴⁾	kg Sbe	7.71E-07	2.22E-07	1.38E-06	2.37E-06	1.04E-06	6.61E-07	ND	ND	ND	ND	ND	ND	ND	1.55E-07	6.12E-07	2.72E-07	8.07E-08	-2.41E-06
ADP-fossil resources	MJ	4.26E+00	1.16E+00	1.00E+01	1.55E+01	5.48E+00	3.96E+00	ND	ND	ND	ND	ND	ND	ND	5.67E+00	3.18E+00	1.47E+00	7.97E-01	-2.18E+01
Water use ⁵⁾	m ³ e depr.	8.55E-02	5.97E-03	1.09E+00	1.18E+00	2.81E-02	2.20E-01	ND	ND	ND	ND	ND	ND	ND	1.42E-02	1.57E-02	2.33E-01	3.81E-03	-5.81E-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	2.08E-08	7.56E-09	1.19E-07	1.47E-07	3.56E-08	3.35E-08	ND	ND	ND	ND	ND	ND	ND	1.11E-07	2.20E-08	1.26E-08	5.78E-09	-1.41E-07
Ionizing radiation ⁶⁾	kBq 11235e	6.65E-03	1.40E-03	8.72E-02	9.52E-02	6.60E-03	1.82E-02	ND	ND	ND	ND	ND	ND	ND	2.51E-03	2.77E-03	1.60E-02	7.80E-04	-5.81E-01
Ecotoxicity (freshwater)	CTUe	2.13E+00	1.40E-01	1.73E+00	4.00E+00	6.46E-01	9.44E-01	ND	ND	ND	ND	ND	ND	ND	3.12E-01	4.50E-01	7.68E-01	3.81E-01	-2.67E+00
Human toxicity, cancer	CTUh	4.04E-10	1.29E-11	1.39E-10	5.57E-10	6.08E-11	1.31E-10	ND	ND	ND	ND	ND	ND	ND	4.46E-11	3.62E-11	2.00E-10	1.09E-11	-3.38E-10
Human tox. non-cancer	CTUh	1.73E-09	7.53E-10	4.64E-09	7.13E-09	3.54E-09	4.06E-09	ND	ND	ND	ND	ND	ND	ND	7.06E-10	2.06E-09	1.33E-08	8.54E-10	-1.24E-08
SQP ⁷⁾	-	1.32E+03	1.17E+00	1.69E+01	1.34E+03	5.52E+00	2.02E+02	ND	ND	ND	ND	ND	ND	ND	3.97E-01	3.20E+00	3.55E-01	1.86E+00	-2.54E+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	1.41E+02	1.90E-02	-2.32E+01	1.18E+02	8.92E-02	-7.39E+00	ND	ND	ND	ND	ND	ND	ND	3.59E-02	4.36E-02	-1.13E+02	-5.45E+01	1.89E+01
Renew. PER as material	MJ	1.21E+02	0.00E+00	-1.29E+01	1.08E+02	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-8.18E+01	-2.58E+01	3.07E+01
Total use of renew. PER	MJ	2.62E+02	1.90E-02	-3.61E+01	2.26E+02	8.92E-02	-7.39E+00	ND	ND	ND	ND	ND	ND	ND	3.59E-02	4.36E-02	-1.95E+02	-8.03E+01	4.95E+01
Non-re. PER as energy	MJ	4.28E+00	1.17E+00	8.25E+00	1.37E+01	5.48E+00	3.13E+00	ND	ND	ND	ND	ND	ND	ND	5.67E+00	3.18E+00	1.47E+00	7.97E-01	-2.18E+01
Non-re. PER as material	MJ	0.00E+00	0.00E+00	6.24E-01	6.24E-01	0.00E+00	-6.24E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E-01
Total use of non-re. PER	MJ	4.28E+00	1.17E+00	8.88E+00	1.43E+01	5.48E+00	2.51E+00	ND	ND	ND	ND	ND	ND	ND	5.67E+00	3.18E+00	1.47E+00	7.97E-01	-2.15E+01
Secondary materials	kg	2.41E-03	5.04E-04	6.14E-03	9.05E-03	2.37E-03	2.34E-03	ND	ND	ND	ND	ND	ND	ND	2.36E-03	1.35E-03	2.40E-03	2.88E-04	3.06E-03
Renew. secondary fuels	MJ	2.43E-05	6.36E-06	4.61E-04	4.92E-04	2.99E-05	8.27E-05	ND	ND	ND	ND	ND	ND	ND	6.16E-06	1.72E-05	5.48E-06	5.41E-06	-2.21E-05
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	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	2.03E-03	1.72E-04	-3.42E-03	-1.21E-03	8.09E-04	-1.50E-03	ND	ND	ND	ND	ND	ND	ND	3.75E-04	4.70E-04	1.80E-03	-1.19E-02	-1.76E-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	1.33E-02	1.69E-03	1.35E-02	2.85E-02	7.93E-03	1.34E-02	ND	ND	ND	ND	ND	ND	ND	6.31E-03	5.39E-03	4.50E-02	1.39E-03	-5.10E-02
Non-hazardous waste	kg	4.51E-01	3.38E-02	8.46E+00	8.94E+00	1.59E-01	4.83E+00	ND	ND	ND	ND	ND	ND	ND	8.60E-02	9.97E-02	6.98E+00	1.60E+01	-4.20E+00
Radioactive waste	kg	1.63E-06	3.47E-07	1.08E-05	1.28E-05	1.63E-06	2.91E-06	ND	ND	ND	ND	ND	ND	ND	6.16E-07	6.78E-07	4.10E-06	1.91E-07	-1.49E-04

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	ND	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	3.25E-14	3.25E-14	0.00E+00	5.26E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	3.48E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	1.70E-22	1.70E-22	0.00E+00	2.55E-23	ND	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	3.46E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	2.25E+01	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	1.46E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	9.51E+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	2.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	1.30E+01	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	3.22E-01	7.71E-02	7.90E-01	1.19E+00	3.62E-01	3.34E-01	ND	ND	ND	ND	ND	ND	ND	4.31E-01	2.18E-01	1.27E-01	2.21E-01	-9.39E-01
Ozone depletion Pot.	kg CFC ₁₁ e	3.96E-09	1.29E-09	2.40E-08	2.92E-08	6.06E-09	5.99E-09	ND	ND	ND	ND	ND	ND	ND	5.26E-09	2.58E-09	1.30E-09	7.42E-10	-2.59E-08
Acidification	kg SO ₂ e	1.24E-03	1.45E-04	3.75E-03	5.13E-03	6.83E-04	1.12E-03	ND	ND	ND	ND	ND	ND	ND	2.75E-03	5.71E-04	8.57E-04	1.88E-04	-4.71E-03
Eutrophication	kg PO ₄ ³ e	1.22E-03	3.62E-05	1.50E-03	2.76E-03	1.71E-04	5.29E-04	ND	ND	ND	ND	ND	ND	ND	6.43E-04	1.39E-04	3.04E-04	1.48E-04	-9.03E-04
POCP ("smog")	kg C ₂ H ₄ e	7.53E-04	1.48E-05	3.16E-04	1.08E-03	6.96E-05	1.99E-04	ND	ND	ND	ND	ND	ND	ND	2.06E-04	5.09E-05	6.60E-05	5.53E-05	-4.11E-04
ADP-elements	kg Sbe	7.61E-07	2.17E-07	1.36E-06	2.34E-06	1.02E-06	6.44E-07	ND	ND	ND	ND	ND	ND	ND	1.51E-07	5.96E-07	2.35E-07	7.84E-08	-2.38E-06
ADP-fossil	MJ	4.16E+00	1.14E+00	9.83E+00	1.51E+01	5.37E+00	3.85E+00	ND	ND	ND	ND	ND	ND	ND	5.63E+00	3.14E+00	1.19E+00	7.84E-01	-1.15E+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	3.23E-01	7.76E-02	7.01E-01	1.10E+00	3.65E-01	2.95E-01	ND	ND	ND	ND	ND	ND	ND	4.34E-01	2.19E-01	1.28E-01	3.65E-02	-9.41E-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. Heat and power co-generation, wood chips, 6667 kW, state-of-the-art 2014, United Kingdom, Ecoinvent, 0.0026 kgCO₂e/MJ
2. Diesel, burned in building machine, World, Ecoinvent, 0.10 kgCO₂e/MJ
3. Electricity, United Kingdom, residual mix, 2024, United Kingdom, One Click LCA, 0.61 kgCO₂e/kWh
4. Electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted, United Kingdom, Ecoinvent, 0.12 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry >32 metric ton, EURO6, 263 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	702
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)	Assumption total volume of lubrication used based on the following reference: Shell Global. (n.d.) Shell Tellus Lubricating Oil – Safety Data Sheets. Typical density range 0.86–0.89 g/cm ³ . Available via Shell Global SDS Library.
Waste materials: type and mass (kg)	An installation loss of 15% has been assumed for the product to account for cutting, trimming, fitting tolerances and on-site handling losses during installation. This value is based on operational experience from Grosvenor Timberworks and associated installation teams, reflecting typical wastage encountered when fitting solid hardwood flooring products with variable board dimensions and natural material characteristics. In the absence of project-specific measured data, this assumption follows a conservative approach and is considered representative of industry practice for timber flooring installations.
Waste materials: output routes	-
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	13.4kg
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	3.48
Recovery: energy recovery (kg)	0
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	-

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

Vera Durão, as an authorised verifier acting for EPD Hub Limited

29.05.2026

