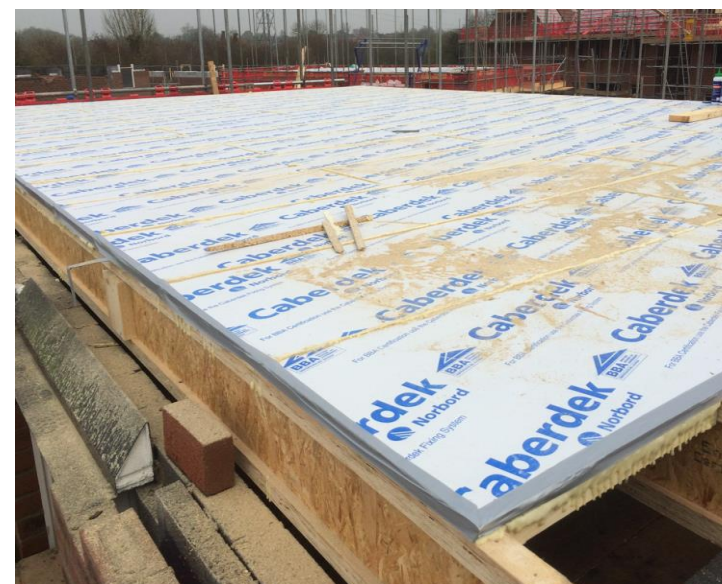


ENVIRONMENTAL PRODUCT DECLARATION

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

Chipboard Timber Flooring
Staircraft Group Ltd



EPD HUB, HUB-0940

Publishing date 15 December 2023, last updated date 18 May 2024, valid until 15 December 2028.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Staircraft Group Ltd
Address	Colliery Lane North, Bayton Road Industrial Estate, Exhall
Contact details	ben.humphries@staircraftgroup.com
Website	https://staircraftgroup.com/

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Ben Humphries, Environmental & Sustainability Analyst at Staircraft
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Chipboard timber flooring
Additional labels	N/A
Product reference	22mm chipboard flooring for a 4.38m x 8.16m rectangular domestic TFSi-joist timber floor
Place of production	Coventry, UK
Period for data	01/06/21 - 31/05/22
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of installed chipboard flooring
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3.31E-01
GWP-total, A1-A3 (kgCO ₂ e)	-1.64E-01
Secondary material, inputs (%)	28.3
Secondary material, outputs (%)	0.0
Total energy use, A1-A3 (kWh)	4.68
Total water use, A1-A3 (m ³ e)	1.18E-02

Note:

The declared unit was chosen as 1kg to enable the LCA data established for the chipboard flooring requirements necessary for the chosen reference timber floor in this EPD to be scaled to suit floors with any other geometries.

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Staircraft are the world's largest manufacturer of timber staircases, as well as supplying integrated timber floor and door-kit solutions to the UK residential housing sector. We operate from 4 manufacturing sites in the Midlands, covering over 405 000 sq. ft.

Our team are passionate about innovation and sustainability. Using the latest CNC technology our products are designed to minimise waste, and create efficient, hassle-free and safe solutions for tradespeople to install.

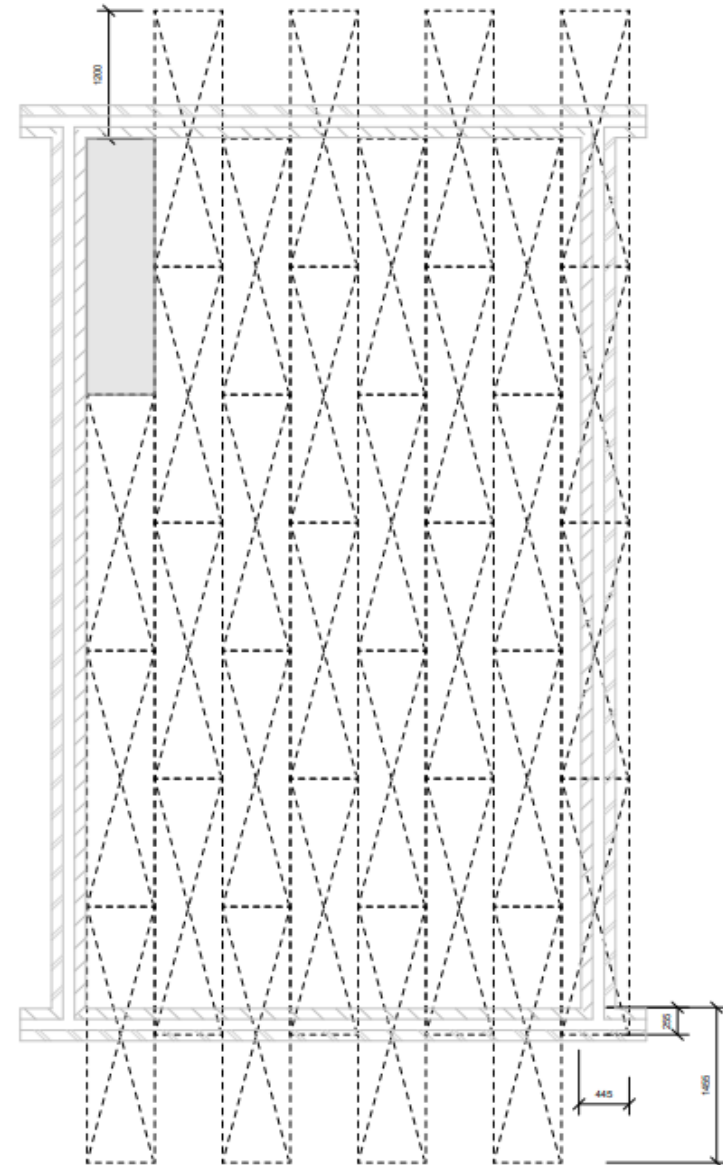
PRODUCT DESCRIPTION

Chipboard flooring for domestic floors can either be supplied as a pack of 0.6m wide x 2.4m long tongue & grooved boards sufficient to cover the floor area, or as a pre-cut pack of boards which are laid in accordance with a pre-designed flooring layout plan. The former is the most prevalent approach, where carpenters lay all the boards in a staggered pattern with the board ends initially oversailing the floor edges, then trim back the boards around the perimeter, with the offcuts being disposed of on site. A typical decking layout using this approach is shown opposite for a typical rectangular domestic floor plan. This reference floor plan is used in this EPD as the basis to derive LCA parameters for the chipboard flooring, on a per kg basis, so that they can be scaled to suit all other floor geometries where the floorboards are supplied as a site cut floor pack.

Staircraft also provide customers with an alternative floorboard supply option, where the perimeter boards are pre-cut to size in our factory to suit the floor plan, so that they can be laid on site to a pattern we provide, and with no cutting or offcuts being produced on site. LCA parameters for flooring supplied on this basis are also provided in this EPD in the Annex, on a per kg basis to enable them to be scaled to suit all other floor geometries.

LCA parameters can be found for the TFSi-joist floor kits which structurally support these chipboard flooring options in a separate EPD produced by Staircraft Group Ltd and published by EPD Hub #?????.

Comprehensive further information can be found on our timber floor system, and all other products we manufacture, at <https://staircraftgroup.com>



PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	N/A
Minerals	0	N/A
Fossil materials	0	N/A
Bio-based materials	100	Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.537
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of installed chipboard flooring
Mass per declared unit	1 kg
Functional unit	1 kg of installed chipboard flooring
Reference service life	60 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	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for this product stage cover the extraction, manufacture and transport of raw materials used in the production process, as well as packaging materials and other ancillary materials used. 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.

Our chipboard floorboard manufacturing and supply process is summarised in the flowchart overleaf. Chipboard sheets are procured and shipped to our factory. TFSi-joint floor layouts are then produced for the floor in question. If the customer requires a site cut floorboard pack to be supplied then the requisite number of boards required is calculated and these are assembled and stored ready for dispatch to site. If the customer requires a factory cut floorboard pack to be supplied, then the perimeter boards are cut to the required size and labelled to ensure they can be readily identified and installed in the correct position on site. These cut boards are then combined with the appropriate number of full boards required to complete the floor,

and a factory cut floor pack is then assembled and stored ready for dispatch to site. Waste minimisation is an integral part of the factory cut board supply process, whereby board offcuts are reused in other floor layouts. Any remaining small quantities of floorboard waste is then used to heat the factory.

TRANSPORT AND INSTALLATION (A4-A5)

Our chipboard flooring kits are delivered to the relevant construction sites using a mixture of vehicle sizes/types depending upon available site access, and delivery date requirements. Vehicle types and delivery sizes are chosen to optimise load size, fuel efficiency and mileage travelled. Transportation impacts incurred during delivery to site (A4) cover direct fuel exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Site installation (A5) of the chipboard flooring can be carried out using rechargeable nailing guns, drills and saws.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Our chipboard flooring kits are installed in single and multi-occupancy dwellings where the end-of-life process for demolition and waste removal/recycling is either unknown or unclear. We have therefore assumed a worse-case scenario whereby the products we have supplied are sent to landfill at the end-of-life.

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.

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 materials	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

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

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

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.8 and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	-1.64E+00	8.38E-05	4.39E-03	-1.64E+00	2.06E-06	4.78E-01	MND	MND	MND	MND	MND	MND	MND	9.19E-04	2.82E-03	0.00E+00	1.53E+00	0.00E+00
GWP – fossil	kg CO ₂ e	3.26E-01	8.38E-05	4.40E-03	3.31E-01	2.06E-06	2.81E-02	MND	MND	MND	MND	MND	MND	MND	9.19E-04	2.82E-03	0.00E+00	1.08E-02	0.00E+00
GWP – biogenic	kg CO ₂ e	-1.97E+00	2.98E-08	-9.51E-06	-1.97E+00	0.00E+00	4.50E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	1.52E+00	0.00E+00
GWP – LULUC	kg CO ₂ e	8.07E-04	3.09E-08	9.35E-07	8.08E-04	7.76E-10	1.31E-05	MND	MND	MND	MND	MND	MND	MND	9.15E-08	1.04E-06	0.00E+00	1.12E-05	0.00E+00
Ozone depletion pot.	kg CFC ₁₁ e	3.55E-13	1.93E-11	2.19E-09	2.21E-09	5.10E-13	1.62E-09	MND	MND	MND	MND	MND	MND	MND	1.97E-10	6.48E-10	0.00E+00	3.21E-09	0.00E+00
Acidification potential	mol H ⁺ e	1.24E-03	3.55E-07	4.10E-05	1.28E-03	6.50E-09	1.52E-04	MND	MND	MND	MND	MND	MND	MND	9.55E-06	1.19E-05	0.00E+00	9.08E-05	0.00E+00
EP-freshwater ²⁾	kg Pe	4.25E-07	6.86E-10	4.67E-08	4.72E-07	1.47E-11	9.59E-07	MND	MND	MND	MND	MND	MND	MND	3.05E-09	2.31E-08	0.00E+00	2.07E-07	0.00E+00
EP-marine	kg Ne	4.33E-04	1.05E-07	1.73E-05	4.50E-04	1.42E-09	4.19E-05	MND	MND	MND	MND	MND	MND	MND	4.23E-06	3.54E-06	0.00E+00	6.00E-05	0.00E+00
EP-terrestrial	mol Ne	4.82E-03	1.16E-06	1.90E-04	5.01E-03	1.58E-08	3.67E-04	MND	MND	MND	MND	MND	MND	MND	4.64E-05	3.91E-05	0.00E+00	3.38E-04	0.00E+00
POCP (“smog”) ³⁾	kg NMVOCe	1.35E-03	3.72E-07	5.32E-05	1.40E-03	6.20E-09	1.07E-04	MND	MND	MND	MND	MND	MND	MND	1.28E-05	1.25E-05	0.00E+00	1.21E-04	0.00E+00
ADP-minerals & metals ⁴⁾	kg Sbe	9.80E-08	1.96E-10	4.70E-09	1.03E-07	5.25E-12	3.66E-08	MND	MND	MND	MND	MND	MND	MND	4.66E-10	6.60E-09	0.00E+00	3.64E-08	0.00E+00
ADP-fossil resources	MJ	3.36E+00	1.26E-03	6.39E-02	3.43E+00	3.27E-05	3.41E-01	MND	MND	MND	MND	MND	MND	MND	1.24E-02	4.23E-02	0.00E+00	2.46E-01	0.00E+00
Water use ⁵⁾	m ³ e depr.	6.12E-02	5.63E-06	9.20E-04	6.21E-02	1.51E-07	3.31E-03	MND	MND	MND	MND	MND	MND	MND	3.32E-05	1.89E-04	0.00E+00	1.48E-03	0.00E+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.

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 ⁶⁾	MJ	1.04E+01	1.42E-05	7.85E-03	1.04E+01	4.27E-07	2.09E-02	MND	MND	MND	MND	MND	MND	MND	7.07E-05	4.76E-04	0.00E+00	4.56E-03	0.00E+00
Renew. PER as material	MJ	2.05E+01	0.00E+00	0.00E+00	2.05E+01	0.00E+00	-4.72E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-1.58E+01	0.00E+00
Total use of renew. PER	MJ	3.09E+01	1.42E-05	7.85E-03	3.09E+01	4.27E-07	-4.70E+00	MND	MND	MND	MND	MND	MND	MND	7.07E-05	4.76E-04	0.00E+00	-1.58E+01	0.00E+00
Non-re. PER as energy	MJ	5.84E+00	1.26E-03	5.97E-02	5.90E+00	3.27E-05	3.41E-01	MND	MND	MND	MND	MND	MND	MND	1.24E-02	4.23E-02	0.00E+00	2.46E-01	0.00E+00
Non-re. PER as material	MJ	1.72E+00	0.00E+00	1.00E-02	1.73E+00	0.00E+00	-4.04E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-1.32E+00	0.00E+00
Total use of non-re. PER	MJ	7.56E+00	1.26E-03	6.97E-02	7.63E+00	3.27E-05	-6.27E-02	MND	MND	MND	MND	MND	MND	MND	1.24E-02	4.23E-02	0.00E+00	-1.07E+00	0.00E+00

Secondary materials	kg	2.83E-01	3.49E-07	2.23E-05	2.83E-01	9.36E-09	4.93E-05	MND	MND	MND	MND	MND	MND	MND	MND	4.84E-06	1.17E-05	0.00E+00	8.80E-05	0.00E+00
Renew. secondary fuels	MJ	5.75E-01	3.52E-09	9.11E-06	5.75E-01	8.46E-11	1.19E-06	MND	MND	MND	MND	MND	MND	MND	MND	1.58E-08	1.18E-07	0.00E+00	3.38E-06	0.00E+00
Non-ren. secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m ³	2.96E-03	1.63E-07	8.79E-03	1.18E-02	4.32E-09	1.55E-04	MND	MND	MND	MND	MND	MND	MND	MND	7.51E-07	5.48E-06	0.00E+00	2.63E-04	0.00E+00

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	1.55E-07	1.67E-06	1.24E-04	1.26E-04	3.52E-08	2.29E-03	MND	MND	MND	MND	MND	MND	MND	1.66E-05	5.61E-05	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste	kg	1.06E-02	2.74E-05	2.19E-03	1.28E-02	6.14E-07	3.36E-01	MND	MND	MND	MND	MND	MND	MND	1.16E-04	9.21E-04	0.00E+00	1.00E+00	0.00E+00
Radioactive waste	kg	1.34E-04	8.42E-09	3.67E-07	1.35E-04	2.25E-10	3.89E-07	MND	MND	MND	MND	MND	MND	MND	8.71E-08	2.83E-07	0.00E+00	0.00E+00	0.00E+00

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	1.59E-04	0.00E+00	0.00E+00	1.59E-04	0.00E+00	0.00E+00	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

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

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

Why does verification transparency matter? [Read more online](#)

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

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

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

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

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
15.12.2023



Flooring Supply Type	GWP-Total (kg CO2e per kg)			GWP-Fossil (kg CO2e per kg)
	Cradle to Gate A1-A3	Cradle to Installation A1-A5	Cradle to Grave A1-C4	A1-A3
Site cut flooring <i>(EPD reference type)</i>	-1.64	-1.16	0.376	0.331
Factory cut flooring <i>(see diagram opposite)</i>	-1.23	-1.21	0.319	0.281

Annex

The LCA parameters of primary importance to specifiers, for the reference timber floor footprint included in the body of this EPD, but with floorboards supplied factory precut to size as illustrated opposite, are given in the table below on a per kg basis:

