

# ENVIRONMENTAL PRODUCT DECLARATION

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

**MDF Fire Door Linings**  
**Staircraft Group Ltd**



**EPD HUB, HUB-1358**

Publishing date 2 May 2024, last updated on 2 May 2024, valid until 2 May 2029.

## GENERAL INFORMATION

### MANUFACTURER

Manufacturer	Staircraft Group Ltd
Address	Colliery Lane North, Bayton Road Industrial Estate, Exhall, Coventry, UK
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
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <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	95x838mmx25mm MDF Fire Door Lining
Additional labels	79/88/95/157mm Door Linings for 610/686/762/838 mm Door Widths
Product reference	-
Place of production	Coventry, UK
Period for data	01/06/21 - 31/05/22
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-2% to +3%

### ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of installed Fire Door Lining
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)	1.02E+00
GWP-total, A1-A3 (kgCO <sub>2</sub> e)	-4.31E-02
Secondary material, inputs (%)	0.18
Secondary material, outputs (%)	0.0
Total energy use, A1-A3 (kWh)	12.7
Total water use, A1-A3 (m <sup>3</sup> e)	3.00E-02

#### Note:

The declared unit was chosen as 1kg to enable the LCA data established for the fixed size of representative door lining chosen in this EPD to be scaled to suit door linings of other widths to suit alternative door widths.

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

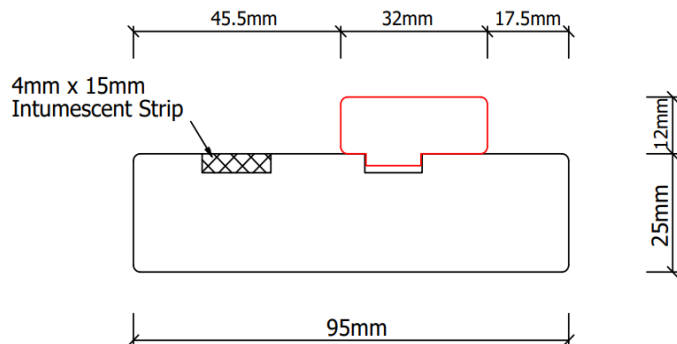
Staircraft are the world's largest manufacturer of timber staircases, as well as supplying integrated timber floors, internal door-kits and MDF profiles to the UK residential housing sector. We operate from 4 manufacturing sites in the Midlands, covering over 405 000 sq. ft.

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

Our Fire Door Linings are manufactured from MDF for use on internal fire door frames in domestic construction. The jambs and heads for both the fire door lining and doorstop are cut to size to fit the door frame dimensions before being dispatched to site for installation. The Fire Door Lining differs from the Non-Fire Door Lining as an intumescent strip is installed into the heads and jambs of the lining.

The reference product used in this EPD comprises a 95mm wide x 25mm thick fire door lining with a 32mm wide x 14.5mm thick door stop incorporated (illustrated below) to suit an 838mm wide door opening. This is the most common lining size we supply in this range. This is used to derive LCA parameters on a per kg basis, so that they can be scaled to suit linings with other widths or for alternative other door widths. The primary LCA parameters for the most popular alternative lining configurations we supply are included in the Annex to this EPD, on a per kg basis.



Comprehensive further information can be found on our Door Linings, as well as other products we manufacture, at <https://staircraftgroup.com>

## PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	3	UK
Fossil materials	1.3	UK
Bio-based materials	95.7	UK & Ireland

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.325
Biogenic carbon content in packaging, kg C	0

## FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of installed Fire Door Lining
Mass per declared unit	1 kg
Functional unit	-
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 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.

Our door lining and stop manufacturing process is summarised in the flowchart overleaf. MDF boards are procured and shipped to our factory and then stored in racking. The boards are then cut into strips on a rip saw; the number of strips determined by the width of the lining being produced. These strips of MDF are then transferred from our Ibstock Road Factory to our Bayton Road Factory where the intumescent strip is installed, and they are cut to length as door jambs or heads of the correct dimension using a crosscut saw. This is done for both the linings and the stops. The jambs then have door stop, hinge and latch plate recesses machined into them, while the heads have their door stop recesses machined separately. A door lining set comprising 1 head lining, 2 jamb linings (1 hinge side & 1 latch

side), 1 head stop and 2 jamb stops are then shrink wrapped together and labelled with frame type and size before being stacked ready for picking and dispatch.

Waste minimisation is an integral part of the process, and any waste generated is either recycled into our own biomass facility or recycled by external contractors, with a small minority going to landfill.

## TRANSPORT AND INSTALLATION (A4-A5)

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

Our door linings are delivered to distribution centres or customer sites using a mixture of vehicle sizes/types depending upon delivery date requirements. Vehicle types and delivery sizes are chosen to optimise load size, fuel efficiency and mileage travelled.

Site installation (A5) can be carried out using handheld equipment and a rechargeable drill.

## PRODUCT USE AND MAINTENANCE (B1-B7)

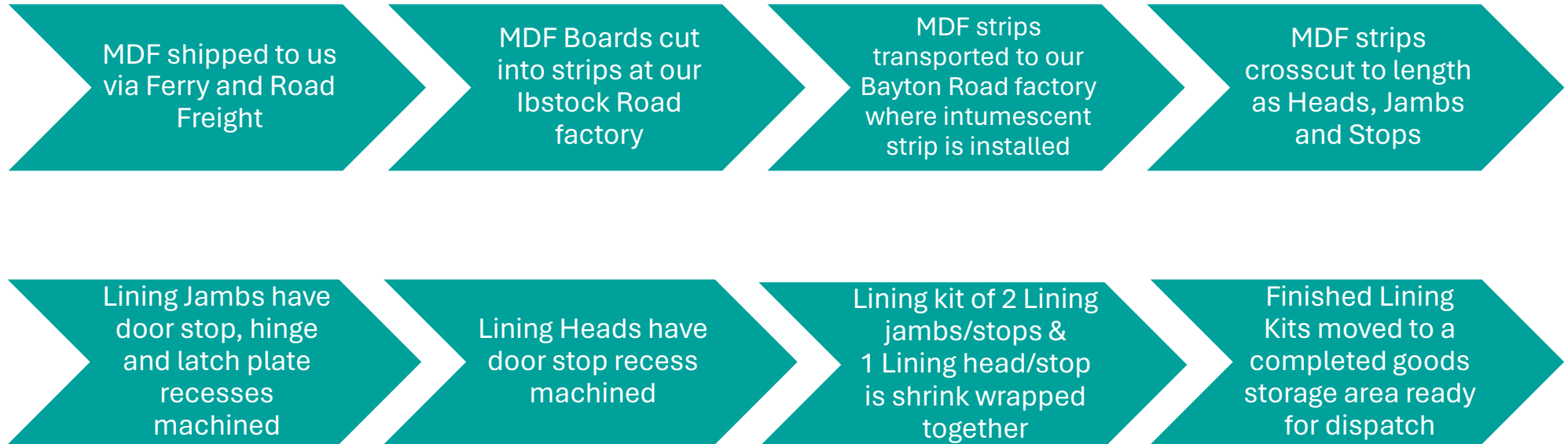
This EPD does not cover the use phase.

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

## PRODUCT END OF LIFE (C1-C4, D)

Our Linings 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	Multiple Products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	-2% to +3%

This EPD is based on a representative product with the highest sales volume. The variation for GWP Fossils for A1 - A3 for this group of products is -2% between the reference and the lowest product, and +3% between the reference and the highest product.

## 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 <sup>1)</sup>	kg CO <sub>2</sub> e	-4.67E-01	1.70E-03	5.08E-01	4.31E-02	5.08E-05	5.78E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.83E-03	0.00E+00	9.97E-01	0.00E+00
GWP – fossil	kg CO <sub>2</sub> e	7.15E-01	1.70E-03	2.99E-01	1.02E+00	5.07E-05	4.65E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.83E-03	0.00E+00	1.39E-02	0.00E+00
GWP – biogenic	kg CO <sub>2</sub> e	-1.19E+00	1.06E-08	2.09E-01	-9.83E-01	0.00E+00	1.13E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	9.83E-01	0.00E+00
GWP – LULUC	kg CO <sub>2</sub> e	1.06E-02	6.41E-07	3.33E-05	1.06E-02	2.03E-08	3.77E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.04E-06	0.00E+00	1.15E-05	0.00E+00
Ozone depletion pot.	kg CFC <sub>11</sub> e	1.02E-07	3.91E-10	4.36E-08	1.46E-07	1.18E-11	1.19E-11	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.51E-10	0.00E+00	3.36E-09	0.00E+00
Acidification potential	mol H <sup>+</sup> e	6.02E-03	7.96E-06	1.47E-03	7.49E-03	1.44E-07	3.18E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.20E-05	0.00E+00	9.28E-05	0.00E+00
EP-freshwater <sup>2)</sup>	kg Pe	1.81E-05	1.36E-08	2.41E-06	2.05E-05	3.62E-10	6.13E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.32E-08	0.00E+00	2.13E-07	0.00E+00
EP-marine	kg Ne	1.48E-03	2.28E-06	3.37E-04	1.82E-03	2.88E-08	1.84E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.56E-06	0.00E+00	5.93E-05	0.00E+00
EP-terrestrial	mol Ne	2.00E-02	2.52E-05	5.21E-03	2.52E-02	3.20E-07	1.16E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.93E-05	0.00E+00	3.41E-04	0.00E+00
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	5.42E-03	7.92E-06	1.03E-03	6.45E-03	1.23E-07	4.38E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.26E-05	0.00E+00	1.21E-04	0.00E+00
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1.04E-05	4.12E-09	6.58E-08	1.05E-05	1.84E-10	1.32E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	6.64E-09	0.00E+00	4.08E-08	0.00E+00
ADP-fossil resources	MJ	1.33E+01	2.55E-02	5.23E-01	1.39E+01	7.55E-04	8.89E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.25E-02	0.00E+00	2.53E-01	0.00E+00
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	1.98E+00	1.14E-04	2.49E-01	2.23E+00	3.54E-06	5.14E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.90E-04	0.00E+00	1.65E-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.

### ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	1.30E-07	1.89E-10	1.05E-08	1.41E-07	4.09E-12	6.60E-12	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.26E-10	0.00E+00	1.83E-09	0.00E+00
Ionizing radiation <sup>6)</sup>	kBq U235e	2.79E-02	1.22E-04	9.70E-02	1.25E-01	3.96E-06	4.28E-06	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.02E-04	0.00E+00	1.23E-03	0.00E+00
Ecotoxicity (freshwater)	CTUe	1.86E+01	2.27E-02	2.61E+00	2.12E+01	6.30E-04	9.30E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.82E-02	0.00E+00	3.37E-01	0.00E+00
Human toxicity, cancer	CTUh	2.26E-09	5.79E-13	5.52E-11	2.32E-09	1.94E-14	2.78E-14	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.40E-13	0.00E+00	8.29E-12	0.00E+00
Human tox. non-cancer	CTUh	1.42E-08	2.23E-11	1.70E-09	1.59E-08	6.17E-13	5.96E-13	MND	MND	MND	MND	MND	MND	MND	0.00E+00	3.79E-11	0.00E+00	2.72E-10	0.00E+00
SQP <sup>7)</sup>	-	1.30E+02	2.81E-02	2.39E-01	1.30E+02	5.36E-04	1.98E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.90E-02	0.00E+00	5.90E-01	0.00E+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 <sup>8)</sup>	MJ	2.50E+01	2.91E-04	9.99E-01	2.60E+01	1.10E-05	1.56E-05	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.79E-04	0.00E+00	4.75E-03	0.00E+00
Renew. PER as material	MJ	4.29E-02	0.00E+00	3.01E-04	4.32E-02	0.00E+00	-3.01E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-4.29E-02	0.00E+00
Total use of renew. PER	MJ	2.50E+01	2.91E-04	1.00E+00	2.60E+01	1.10E-05	-2.85E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.79E-04	0.00E+00	-3.81E-02	0.00E+00
Non-re. PER as energy	MJ	1.34E+01	2.55E-02	6.19E+00	1.96E+01	7.55E-04	8.89E-04	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.25E-02	0.00E+00	2.53E-01	0.00E+00
Non-re. PER as material	MJ	1.18E+00	0.00E+00	3.35E-02	1.21E+00	0.00E+00	-1.48E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	0.00E+00	0.00E+00	-1.06E+00	0.00E+00
Total use of non-re. PER	MJ	1.45E+01	2.55E-02	6.23E+00	2.08E+01	7.55E-04	-1.48E-01	MND	MND	MND	MND	MND	MND	MND	0.00E+00	4.25E-02	0.00E+00	-8.10E-01	0.00E+00
Secondary materials	kg	1.84E-03	7.25E-06	1.53E-04	2.00E-03	2.57E-07	3.07E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.18E-05	0.00E+00	1.01E-04	0.00E+00
Renew. secondary fuels	MJ	9.62E-04	7.25E-08	1.21E-04	1.08E-03	2.83E-09	1.08E-08	MND	MND	MND	MND	MND	MND	MND	0.00E+00	1.19E-07	0.00E+00	3.39E-06	0.00E+00
Non-ren. secondary fuels	MJ	3.88E-04	0.00E+00	0.00E+00	3.88E-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
Use of net fresh water	m <sup>3</sup>	2.29E-02	3.27E-06	2.62E-03	2.55E-02	9.63E-08	8.29E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.51E-06	0.00E+00	2.81E-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	4.81E-03	3.34E-05	4.08E-03	8.92E-03	8.59E-07	1.73E-07	MND	MND	MND	MND	MND	MND	MND	0.00E+00	5.64E-05	0.00E+00	1.25E-03	0.00E+00
Non-hazardous waste	kg	3.24E-01	5.47E-04	1.67E-01	4.92E-01	1.53E-05	3.08E-03	MND	MND	MND	MND	MND	MND	MND	0.00E+00	9.26E-04	0.00E+00	1.00E+00	0.00E+00
Radioactive waste	kg	3.01E-05	1.71E-07	3.92E-05	6.95E-05	5.20E-09	8.71E-10	MND	MND	MND	MND	MND	MND	MND	0.00E+00	2.84E-07	0.00E+00	5.79E-08	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	1.46E-01	1.46E-01	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	3.28E-04	0.00E+00	1.51E-06	3.30E-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
Materials for energy rec	kg	4.26E-04	0.00E+00	3.44E-02	3.48E-02	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	4.06E-03	0.00E+00	0.00E+00	4.06E-03	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  
02.05.2024



# ANNEX

The LCA parameters of primary importance to specifiers, for the other sizes of Fire Door Lining we manufacture as alternatives to the reference Fire Door Lining included in the body of this EPD, are given in the table below on a per kg basis:

Door width (mm)	Lining width (mm)	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
610	79	0.067	0.068	1.060	1.030
	88	0.031	0.032	1.030	1.000
	95	0.027	0.028	1.030	0.999
	157	0.019	0.019	1.030	1.010
686	79	0.077	0.077	1.070	1.040
	88	0.041	0.041	1.040	1.010
	95	0.037	0.038	1.040	1.010
	157	0.029	0.030	1.040	1.020
762	79	0.067	0.067	1.060	1.030
	88	0.031	0.031	1.030	1.000
	95	0.027	0.027	1.030	0.999
	157	0.017	0.018	1.030	1.010
838	79	0.083	0.083	1.080	1.050
	88	0.047	0.047	1.040	1.020
	95 (EPD reference Lining)	0.043	0.044	1.040	1.020
	157	0.037	0.037	1.050	1.020

