

ENVIRONMENTAL PRODUCT DECLARATION

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

FCE - Fire damper
Halton Marine Oy



EPD HUB, HUB-1433

Published on 23.05.2024, last updated on 23.05.2024, valid until 23.05.2029

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Halton Marine Oy
Address	Pulttikatu 2 15700 Lahti, Finland
Contact details	-
Website	www.halton.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 1.1, 5 Dec 2023
Sector	Manufactured 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	Sofia Malin, Halton Marine Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Imane Uald Iamkaddam, 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	FCE - Fire damper
Additional labels	FCE - Fire damper
Product reference	ITM009586
Place of production	Lahti, Finland
Period for data	Calendar year, 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of FCE fire damper with electric actuator
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3,36E+00
GWP-total, A1-A3 (kgCO ₂ e)	2,95E+00
Secondary material, inputs (%)	47.5
Secondary material, outputs (%)	89
Total energy use, A1-A3 (kWh)	24.9
Net fresh water use, A1-A3 (m ³)	0.27

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Halton Group is family-owned, global technology leader in indoor air solutions for demanding spaces. Our mission is to enable peoples wellbeing in these environments. We design, manufacture and deliver indoor environment solutions for

- Commercial and public buildings-Healthcare institutions and laboratories
- Professional kitchens and restaurants
- Energy production and heavy industry environments
- Marine vessels

We work in close cooperation with our customers and partners to meet their special needs and even exceed expectations. We enable safe, comfortable and productive indoor environments that are energy-efficient and comply with sustainable principles.

PRODUCT DESCRIPTION

Halton FCE fire damper are CE-marked according EN 15650:2010 and tested according to EN 1366-2 standard. Halton FCE fire dampers are used as safety-related components in ventilation systems to prevent fire and smoke spreading through ducting. The FCE fire damper can be installed in rectangular duct in solid walls, ceiling and lightweight partition wall. During normal operation, the fire damper is in the open position and not cause significant pressure loss, noise or flow disturbance.

Further information can be found at www.halton.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	96.1	EU
Minerals	0.6	EU
Fossil materials	3.3	EU
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	
Biogenic carbon content in packaging, kg C	0.11

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of FCE fire damper with electric actuator
Mass per declared unit	1 kg
Functional unit	
Reference service life	25 years

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
The product contains lead more than 1000 ppm (lead in alloy in electric actuator).		7439-92-1

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	Deconstr./demol.	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 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.

The reference product is made of acid proof steel and contains electric actuator. Different sizes are available. The production stage covers raw material supply for steel plates and purchased parts, laser cutting, steel bending, surface treatment, pre-assembly (supplier components), final assembly and packing. After that, product will be transported to client. The fire damper is manufactured at the Lahti factory in Finland

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.

Energy use of the installation process was assumed to be insignificant since there is no need of heavy machineries that would use electricity, fuels or heat. Waste materials generated by product installation are packaging materials of the product. The average distance to the installation site is from Lahti to Helsinki. The product is transported via truck. It is assumed that customers responsibly recycle 100% of packaging waste. Additionally, the management of packaging waste entails transport from average customer, located in Helsinki, to the nearest recycling facility.

PRODUCT USE AND MAINTENANCE (B1-B7)

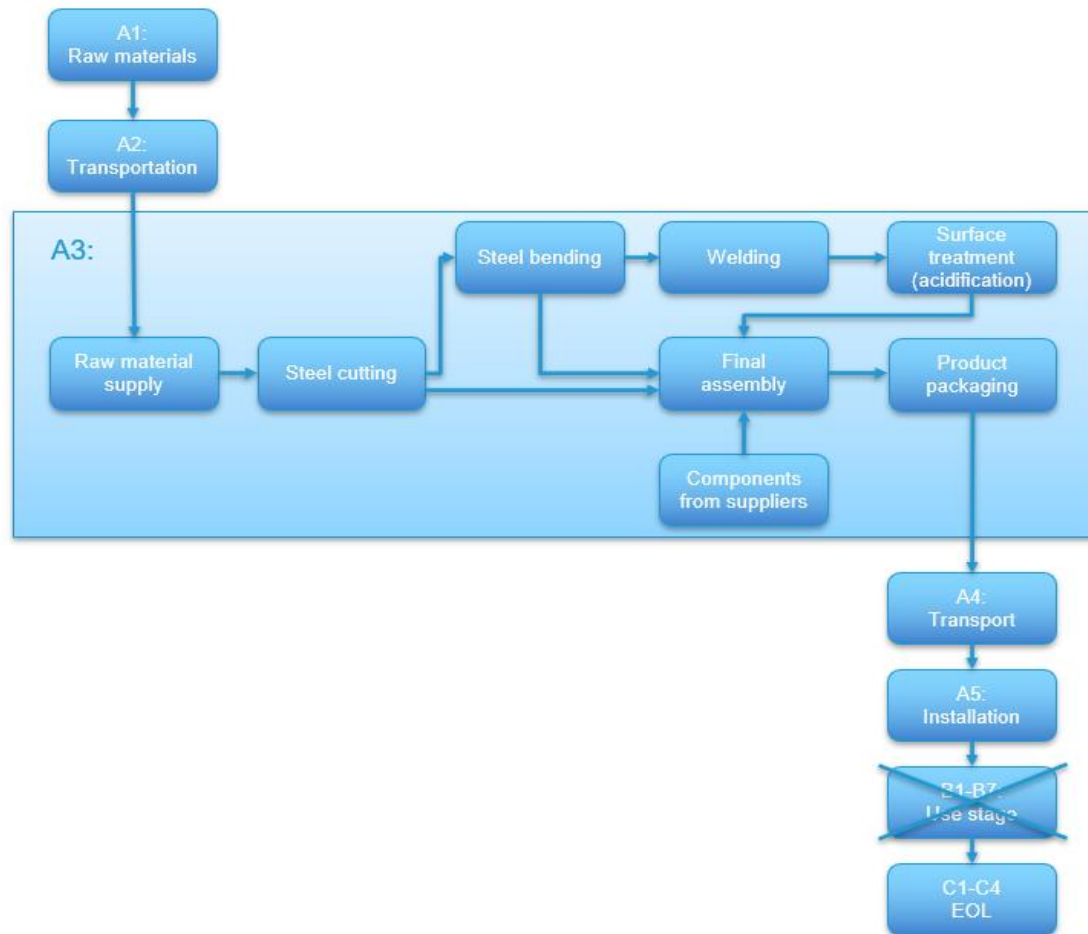
This EPD does not cover the use phase.

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

PRODUCT END OF LIFE (C1-C4, D)

According to waste handling companies, fire damper products are collected separately for recycling in the end-of-life stage. It can be assumed that there are no significant environmental impacts caused by demolition phase and hence it is not declared. The study consider the advantages and environmental impacts of recycling as a benefit, replacing the use of virgin materials. Additionally, the study accounts for the benefits derived from the incineration of materials for energy generation. Transportation distance is 75 km by road, driving by lorry (SYKE 2021).

SYSTEM BOUNDARIES



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. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE 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
GWP – total ¹⁾	kg CO ₂ e	3,14E+00	1,01E-01	-2,97E-01	2,95E+00	1,21E-02	4,42E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,18E-03	8,21E-02	5,48E-04	-1,67E-02
GWP – fossil	kg CO ₂ e	3,14E+00	1,01E-01	1,20E-01	3,36E+00	1,21E-02	2,43E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,17E-03	8,20E-02	5,48E-04	-1,73E-02
GWP – biogenic	kg CO ₂ e	0,00E+00	5,91E-06	-4,18E-01	-4,18E-01	0,00E+00	4,18E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO ₂ e	3,04E-03	3,74E-05	4,29E-04	3,51E-03	4,47E-06	1,80E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,65E-06	3,46E-05	5,17E-07	5,46E-04
Ozone depletion pot.	kg CFC ₁₁ e	1,93E-07	2,33E-08	1,40E-08	2,31E-07	2,79E-09	6,25E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,65E-09	2,51E-09	2,22E-10	1,23E-08
Acidification potential	mol H ⁺ e	1,73E-02	4,29E-04	2,16E-03	1,99E-02	5,13E-05	4,59E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,04E-05	2,63E-04	5,15E-06	8,58E-05
EP-freshwater ²⁾	kg Pe	1,72E-04	8,29E-07	7,50E-06	1,81E-04	9,92E-08	6,20E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,87E-08	1,22E-06	5,74E-09	5,48E-06
EP-marine	kg Ne	3,63E-03	1,27E-04	9,53E-04	4,71E-03	1,52E-05	2,05E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,03E-06	5,80E-05	1,78E-06	2,40E-04
EP-terrestrial	mol Ne	3,31E-02	1,41E-03	1,01E-02	4,47E-02	1,68E-04	2,18E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,96E-05	6,63E-04	1,96E-05	3,06E-04
POCP (“smog”) ³⁾	kg NMVOCe	1,43E-02	4,50E-04	2,60E-03	1,73E-02	5,38E-05	5,53E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,19E-05	1,79E-04	5,70E-06	1,39E-04
ADP-minerals & metals ⁴⁾	kg Sbe	1,52E-04	2,37E-07	1,82E-06	1,54E-04	2,84E-08	1,43E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,68E-08	2,41E-06	1,26E-09	-6,02E-06
ADP-fossil resources	MJ	3,51E+01	1,52E+00	4,65E+01	8,31E+01	1,82E-01	5,48E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-01	3,16E-01	1,50E-02	8,97E-01
Water use ⁵⁾	m ³ e depr.	1,78E+00	6,81E-03	5,16E-01	2,30E+00	8,14E-04	1,50E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,82E-04	8,26E-03	4,77E-05	3,95E-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, 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	2,50E-07	1,17E-08	2,25E-08	2,84E-07	1,40E-09	5,72E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,27E-10	3,20E-09	1,04E-10	1,51E-08
Ionizing radiation ⁶⁾	kBq U235e	2,15E-01	7,24E-03	3,78E+00	4,01E+00	8,67E-04	1,82E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,13E-04	3,40E-03	6,79E-05	1,27E-02
Ecotoxicity (freshwater)	CTUe	1,30E+02	1,37E+00	9,37E+00	1,41E+02	1,64E-01	1,13E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,69E-02	1,34E+00	9,80E-03	4,45E-01
Human toxicity, cancer	CTUh	7,44E-02	3,36E-11	5,27E-10	7,44E-02	4,02E-12	1,15E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,38E-12	4,14E-11	2,45E-13	3,03E-09
Human tox. non-cancer	CTUh	1,96E-01	1,35E-09	3,40E-09	1,96E-01	1,62E-10	5,32E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,59E-11	1,85E-09	6,41E-12	1,56E-08
SQP ⁷⁾	-	1,18E+01	1,75E+00	3,13E+01	4,48E+01	2,10E-01	3,70E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,24E-01	4,98E-01	3,21E-02	-1,95E-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	3,37E+00	1,71E-02	2,64E+00	6,03E+00	2,05E-03	1,08E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-03	5,04E-02	1,30E-04	-2,05E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,56E+00	3,56E+00	0,00E+00	-3,56E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	3,37E+00	1,71E-02	6,20E+00	9,59E+00	2,05E-03	-3,56E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,21E-03	5,04E-02	1,30E-04	-2,05E-01
Non-re. PER as energy	MJ	3,54E+01	1,52E+00	4,64E+01	8,34E+01	1,82E-01	5,48E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-01	3,16E-01	1,50E-02	8,99E-01
Non-re. PER as material	MJ	4,62E-01	0,00E+00	5,99E-01	1,06E+00	0,00E+00	-5,99E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-4,62E-01	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	3,59E+01	1,52E+00	4,70E+01	8,44E+01	1,82E-01	-5,44E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-01	-1,46E-01	1,50E-02	8,99E-01
Secondary materials	kg	4,75E-01	4,22E-04	1,24E-02	4,88E-01	5,05E-05	7,63E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,99E-05	2,87E-04	3,16E-06	1,40E-01
Renew. secondary fuels	MJ	4,53E-04	4,26E-06	1,07E-01	1,08E-01	5,10E-07	3,36E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,02E-07	1,69E-05	8,25E-08	-9,64E-06
Non-ren. secondary fuels	MJ	3,18E-04	0,00E+00	0,00E+00	3,18E-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 ³	3,14E-02	1,97E-04	2,38E-01	2,70E-01	2,36E-05	-1,29E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,40E-05	2,64E-04	1,64E-05	1,85E-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	1,12E+00	2,02E-03	1,92E-02	1,14E+00	2,41E-04	3,09E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,43E-04	2,06E-03	0,00E+00	-7,29E-02
Non-hazardous waste	kg	6,50E+00	3,31E-02	2,34E-01	6,76E+00	3,96E-03	2,21E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,35E-03	8,77E-02	1,04E-01	-2,60E-01
Radioactive waste	kg	9,57E-05	1,02E-05	7,87E-04	8,93E-04	1,22E-06	1,56E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,21E-07	1,61E-06	0,00E+00	7,22E-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	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	2,08E-04	0,00E+00	0,00E+00	2,08E-04	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,90E-01	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,21E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,60E-01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

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	3,02E+00	1,00E-01	1,18E-01	3,24E+00	1,20E-02	2,41E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,10E-03	8,16E-02	5,37E-04	-1,23E-02
Ozone depletion Pot.	kg CFC ₁₁ e	1,96E-07	1,84E-08	1,17E-08	2,26E-07	2,21E-09	5,16E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,31E-09	2,04E-09	1,75E-10	8,11E-09
Acidification	kg SO ₂ e	1,44E-02	3,33E-04	1,54E-03	1,62E-02	3,99E-05	3,27E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,36E-05	2,12E-04	3,89E-06	7,04E-05
Eutrophication	kg PO ₄ ³ e	6,98E-03	7,59E-05	6,16E-04	7,67E-03	9,08E-06	3,16E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,37E-06	7,61E-05	8,39E-07	1,09E-04
POCP ("smog")	kg C ₂ H ₄ e	1,43E-03	1,30E-05	5,34E-05	1,50E-03	1,56E-06	1,07E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,21E-07	7,94E-06	1,63E-07	-6,31E-05
ADP-elements	kg Sbe	1,51E-04	2,30E-07	1,91E-06	1,54E-04	2,75E-08	1,27E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,63E-08	2,40E-06	1,24E-09	-6,02E-06
ADP-fossil	MJ	3,57E+01	1,52E+00	4,71E+01	8,43E+01	1,82E-01	5,48E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-01	3,16E-01	1,50E-02	9,12E-01

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 compliance 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.

Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited

23.05.2024



ANNEX I – SCALING TABLE

Fire damper size (mm)	150x150x1	150x150x3	500x500x1	500x500x3	1000x1000x1	1000x1000x3
Weight (kg)	10.3	13.9	28.3	39.4	59.1	80.8
Impact Category kg/CO2e	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3	A1-A3
GWP - total	30.19	40.3	82.77	114.92	172.79	237.16
GWP - fossil	34.63	46.3	95	131.95	198.34	272.1
GWP - biogenic	-4.49	-6.06	-12.33	-17.16	-25.75	-35.2
GWP - LULUC	0.04	0.05	0.1	0.13	0.19	0.26