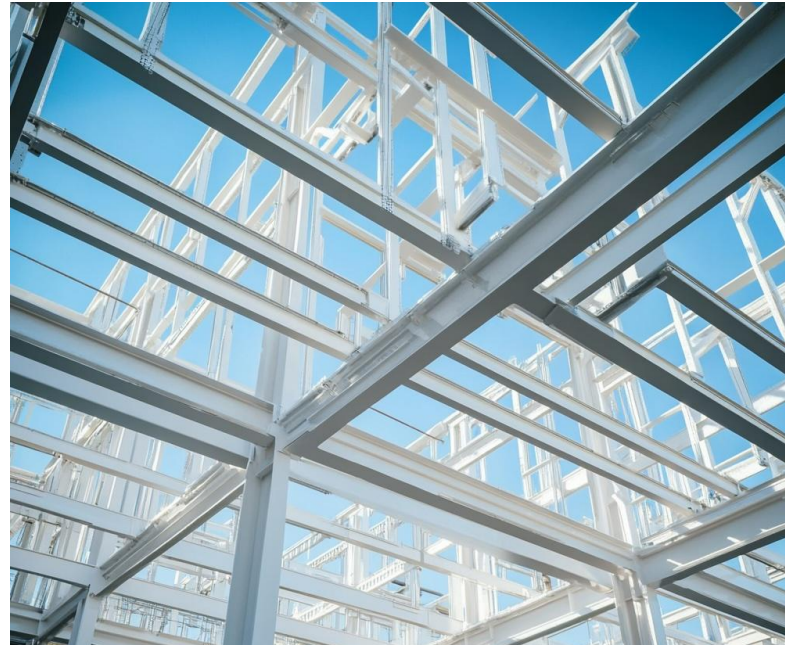




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Welded and surface treated steel products
ISM OÜ



EPD HUB, HUB-3454

Published on 12.06.2025, last updated on 12.06.2025, valid until 12.06.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	ISM OÜ
Address	Harju maakond, Jõelähtme vald, Liivamäe küla, Linnuka tee 5, 74207
Contact details	info@ismconstruction.eu
Website	www.ismconstruction.eu

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	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	German Belov EPD Consultant OÜ
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	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

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.

PRODUCT

Product name	Welded and surface treated steel products
Additional labels	
Product reference	UN CPC code: 421 Structural metal products and parts thereof
Place(s) of raw material origin	
Place of production	Estonia, Harju maakond, Jõelähtme vald, Liivamäe küla, Linnuka tee 5, 74207
Place(s) of installation and use	
Period for data	Calendar year 2024
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3 (%)	

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Steel structure
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1,95E+00
GWP-total, A1-A3 (kgCO ₂ e)	1,93E+00
Secondary material, inputs (%)	93
Secondary material, outputs (%)	84,3
Total energy use, A1-A3 (kWh)	8,24
Net freshwater use, A1-A3 (m ³)	0,12

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

ISM OÜ is a reliable and quality driven subcontractor specialized in the manufacturing of steel and non-ferrous metal products of any complexity. Ability to complete typical and non-standard projects based on customer drawings.

We offer a wide range of services from manufacturing of metal structures to welding and painting services, product installation and delivery.

We are based in Tallinn, Estonia. Our workshop has a total space of 3300 sq. meters. Product-related or management system-related certifications: EN ISO 3834-2, EN 1090-2 EXC3.

PRODUCT DESCRIPTION

Painted steel structures such as columns, trusses, beams, bracings, supports and secondary steel structures. Steel structures are used for private, public, and industrial buildings. Products are assembled on the construction site with help of heavy lifting equipment and are joined together by locking mechanism, bolt connections etc. The steel structures are welded and painted at ISM OÜ factory.

Further information can be found at www.ismconstruction.eu.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	97	EU
Minerals	-	-
Fossil materials	3	EU
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0,005

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Steel structure
Mass per declared unit	1 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	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 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 steel materials are blasted to the required surface conditions using cast iron steel shots and cut to required shapes. Hydraulic oils, cutting emulsions

and other lubrication oils are used during the process to reduce the wear of machines and to ensure stable cutting conditions. The product assembled by welding the different steel components. The welding process consumes welding fillers as well as gases used as shielding. The products are painted and then packaged for shipping. The manufacturing process requires electricity and fuels for the different equipment as well as heating. The steel waste produced at the plant is directed to recycling. The loss of material is considered. A wooden beams and steel strips is used as a packaging material for transporting the product from the factory gate. Geographical scope: module A3 represents country of manufacturing plant, i.e. Estonia, while End-of-life and Construction stages has been modelled for destination countries (Finland, Estonia) and Product stage's raw materials (module A1) has been modelled for countries of origin (EU). Representation of all stages and modules of LCA is presented in geographical scope.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

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.

Distance of transportation from production plant to building site in Finland - 120 km, Estonia - 50 km and the transportation method is ferry and lorry. Vehicle capacity utilization volume factor is assumed to be 100% which means full load. 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. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints.

Transportation does not cause losses as product are packaged properly. Installation consumes 10 kWh of energy for assembling 1 ton of product. This means that 0.01 kWh is required to assemble 1 kilogram of steel beam. Further, steel for bolts and fasteners is included in the modelling.

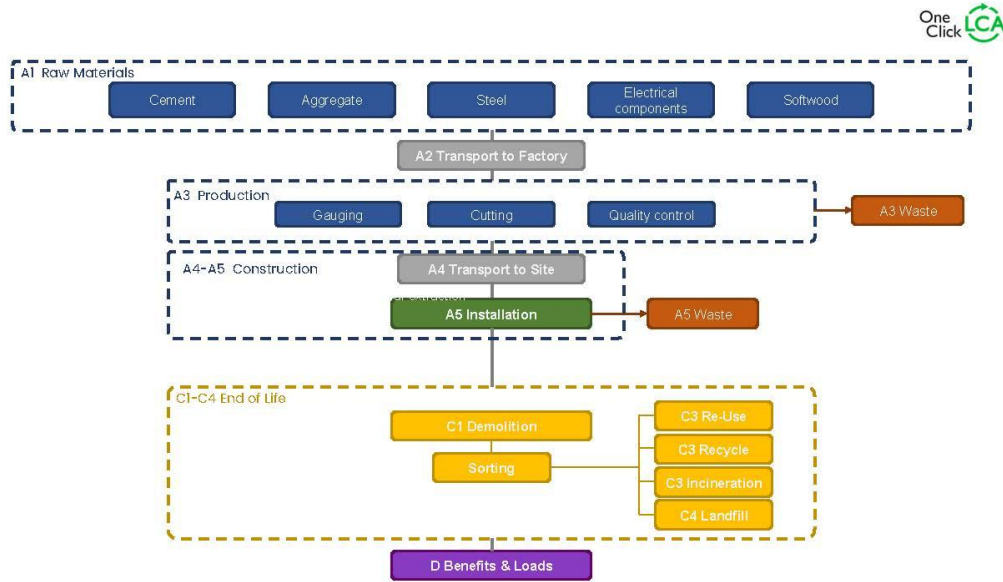
PRODUCT USE AND MAINTENANCE (B1-B7)

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)

Demolition is assumed to consume 0,01 kWh/kg of product. The source of energy is diesel fuel and electricity used by construction machines (C1). It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 85% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 15% of steel is taken to landfill for final disposal (C4). Benefits and loads from replacing virgin steel production due to the recycling at EoL, and also from incineration of wooden pallet with energy recovery are assessed in module D.

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.

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/AC2021 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	Allocated by mass or volume
Packaging material	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 (%)	

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

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 v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

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	2,19E-01	8,18E-02	1,94E+00	1,22E-02	3,66E-02	MND	MND	MND	MND	MND	MND	MND	5,45E-03	6,05E-03	2,26E-02	9,12E-04	-1,40E+00
GWP – fossil	kg CO ₂ e	1,64E+00	2,19E-01	9,03E-02	1,95E+00	1,22E-02	1,62E-02	MND	MND	MND	MND	MND	MND	MND	5,43E-03	6,05E-03	2,26E-02	9,11E-04	-1,40E+00
GWP – biogenic	kg CO ₂ e	-3,22E-04	4,47E-05	-8,58E-03	-8,86E-03	2,25E-06	2,04E-02	MND	MND	MND	MND	MND	MND	MND	5,66E-06	1,40E-06	-6,74E-05	-2,90E-07	-6,05E-05
GWP – LULUC	kg CO ₂ e	1,08E-03	8,26E-05	1,01E-04	1,26E-03	5,05E-06	5,57E-05	MND	MND	MND	MND	MND	MND	MND	7,39E-06	2,77E-06	2,66E-05	5,21E-07	-1,67E-04
Ozone depletion pot.	kg CFC-11e	7,87E-08	4,16E-09	2,42E-09	8,53E-08	2,09E-10	6,74E-10	MND	MND	MND	MND	MND	MND	MND	5,28E-11	8,81E-11	2,43E-10	2,64E-11	-4,62E-09
Acidification potential	mol H ⁺ e	7,75E-03	1,38E-03	5,57E-04	9,69E-03	1,44E-04	8,25E-05	MND	MND	MND	MND	MND	MND	MND	3,51E-05	2,05E-05	2,41E-04	6,46E-06	-5,54E-03
EP-freshwater ²⁾	kg Pe	6,65E-04	1,46E-05	4,29E-05	7,22E-04	6,86E-07	2,44E-06	MND	MND	MND	MND	MND	MND	MND	1,70E-06	4,82E-07	1,22E-05	7,49E-08	-6,00E-04
EP-marine	kg Ne	1,44E-03	4,89E-04	7,88E-05	2,01E-03	3,85E-05	2,25E-05	MND	MND	MND	MND	MND	MND	MND	1,11E-05	6,64E-06	5,37E-05	2,46E-06	-1,23E-03
EP-terrestrial	mol Ne	1,55E-02	5,35E-03	1,03E-03	2,19E-02	4,26E-04	2,25E-04	MND	MND	MND	MND	MND	MND	MND	1,19E-04	7,23E-05	6,05E-04	2,69E-05	-1,35E-02
POCP (“smog”) ³⁾	kg NMVOCe	6,65E-03	1,78E-03	2,58E-04	8,68E-03	1,29E-04	8,22E-05	MND	MND	MND	MND	MND	MND	MND	3,54E-05	2,97E-05	1,78E-04	9,64E-06	-4,59E-03
ADP-minerals & metals ⁴⁾	kg Sbe	5,51E-06	6,98E-07	3,13E-07	6,52E-06	3,06E-08	2,44E-07	MND	MND	MND	MND	MND	MND	MND	2,14E-08	1,81E-08	1,33E-06	1,45E-09	-1,36E-05
ADP-fossil resources	MJ	2,16E+01	3,07E+00	1,37E+00	2,61E+01	1,65E-01	1,92E-01	MND	MND	MND	MND	MND	MND	MND	7,06E-02	8,70E-02	2,67E-01	2,24E-02	-1,27E+01
Water use ⁵⁾	m ³ e depr.	1,21E+00	1,48E-02	1,67E+00	2,89E+00	6,87E-04	8,55E-03	MND	MND	MND	MND	MND	MND	MND	9,74E-04	4,32E-04	4,22E-03	6,45E-05	-2,34E-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

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	1,05E-07	2,08E-08	2,58E-09	1,29E-07	7,66E-10	1,47E-09	MND	MND	MND	MND	MND	MND	MND	6,24E-10	5,74E-10	3,37E-09	1,47E-10	-9,27E-08
Ionizing radiation ⁶⁾	kBq 11235e	6,80E-02	3,66E-03	1,88E-02	9,04E-02	1,53E-04	1,67E-03	MND	MND	MND	MND	MND	MND	MND	5,06E-04	7,68E-05	9,61E-04	1,41E-05	5,23E-02
Ecotoxicity (freshwater)	CTUe	3,19E+01	4,00E-01	4,89E-01	3,28E+01	1,95E-02	4,26E-01	MND	MND	MND	MND	MND	MND	MND	1,10E-02	1,30E-02	1,54E-01	1,88E-03	-3,42E+00
Human toxicity, cancer	CTUh	1,52E-08	7,08E-11	2,42E-11	1,53E-08	2,23E-12	8,94E-11	MND	MND	MND	MND	MND	MND	MND	8,31E-13	1,01E-12	1,81E-11	1,68E-13	-2,24E-10
Human tox. non-cancer	CTUh	1,18E-06	2,18E-09	7,58E-10	1,18E-06	8,42E-11	4,59E-10	MND	MND	MND	MND	MND	MND	MND	3,78E-11	5,59E-11	1,15E-09	3,86E-12	-1,10E-08
SQP ⁷⁾	-	2,46E+00	1,85E+00	2,05E-01	4,52E+00	7,27E-02	5,80E-02	MND	MND	MND	MND	MND	MND	MND	1,01E-02	8,13E-02	5,04E-01	4,40E-02	-4,05E+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	1,38E+00	5,07E-02	2,54E-01	1,69E+00	2,23E-03	-6,51E-02	MND	MND	MND	MND	MND	MND	MND	7,26E-03	1,23E-03	4,14E-02	2,16E-04	-8,65E-01
Renew. PER as material	MJ	1,14E-03	0,00E+00	1,60E-01	1,61E-01	0,00E+00	-1,60E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,03E-03	0,00E+00	5,02E-03
Total use of renew. PER	MJ	1,38E+00	5,07E-02	4,14E-01	1,85E+00	2,23E-03	-2,25E-01	MND	MND	MND	MND	MND	MND	MND	7,26E-03	1,23E-03	4,04E-02	2,16E-04	-8,60E-01
Non-re. PER as energy	MJ	2,37E+01	3,07E+00	1,19E+00	2,80E+01	1,65E-01	1,92E-01	MND	MND	MND	MND	MND	MND	MND	7,06E-02	8,70E-02	-2,65E-01	2,24E-02	-1,27E+01
Non-re. PER as material	MJ	1,08E-01	0,00E+00	-9,79E-03	9,79E-02	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-9,79E-02	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	2,38E+01	3,07E+00	1,18E+00	2,81E+01	1,65E-01	1,92E-01	MND	MND	MND	MND	MND	MND	MND	7,06E-02	8,70E-02	-3,63E-01	2,24E-02	-1,27E+01
Secondary materials	kg	9,30E-01	1,40E-03	8,80E-04	9,32E-01	7,41E-05	1,90E-03	MND	MND	MND	MND	MND	MND	MND	1,65E-05	3,82E-05	3,08E-04	5,62E-06	7,72E-01
Renew. secondary fuels	MJ	3,97E-05	1,67E-05	2,20E-06	5,86E-05	7,15E-07	1,37E-06	MND	MND	MND	MND	MND	MND	MND	6,82E-08	4,86E-07	1,40E-05	1,16E-07	-1,15E-04
Non-ren. secondary fuels	MJ	5,23E-07	0,00E+00	0,00E+00	5,23E-07	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	1,13E-01	4,08E-04	1,93E-03	1,16E-01	1,86E-05	1,52E-04	MND	MND	MND	MND	MND	MND	MND	2,72E-05	1,28E-05	1,16E-04	2,33E-05	-3,08E-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	6,10E-02	4,53E-03	7,05E-03	7,26E-02	2,35E-04	4,93E-03	MND	MND	MND	MND	MND	MND	MND	3,42E-04	1,51E-04	2,08E-03	2,47E-05	-4,63E-01
Non-hazardous waste	kg	5,10E-01	9,24E-02	2,19E-01	8,22E-01	4,38E-03	4,23E-02	MND	MND	MND	MND	MND	MND	MND	8,32E-03	2,82E-03	5,85E-02	5,65E-04	-3,60E+00
Radioactive waste	kg	5,75E-05	9,09E-07	5,19E-06	6,36E-05	3,79E-08	5,46E-07	MND	MND	MND	MND	MND	MND	MND	1,24E-07	1,88E-08	2,37E-07	3,43E-09	1,36E-05

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	3,69E-05	0,00E+00	9,70E-02	9,70E-02	0,00E+00	2,90E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,56E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	2,15E-13	0,00E+00	0,00E+00	2,15E-13	0,00E+00	1,80E-03	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	1,04E-02	0,00E+00	0,00E+00	1,04E-02	0,00E+00	9,50E-03	MND	MND	MND	MND	MND	MND	MND	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	4,00E-03	MND	MND	MND	MND	MND	MND	MND	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	5,50E-03	MND	MND	MND	MND	MND	MND	MND	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 ₂ e	1,63E+00	2,18E-01	9,08E-02	1,94E+00	1,22E-02	1,59E-02	MND	MND	MND	MND	MND	MND	MND	5,41E-03	6,01E-03	2,25E-02	9,03E-04	-1,39E+00
Ozone depletion Pot.	kg CFC ₋₁₁ e	1,01E-07	3,31E-09	1,99E-09	1,06E-07	1,66E-10	6,42E-10	MND	MND	MND	MND	MND	MND	MND	4,34E-11	7,03E-11	2,01E-10	2,10E-11	-5,11E-09
Acidification	kg SO ₂ e	6,97E-03	1,04E-03	4,61E-04	8,47E-03	1,14E-04	6,55E-05	MND	MND	MND	MND	MND	MND	MND	2,71E-05	1,57E-05	1,94E-04	4,78E-06	-4,46E-03
Eutrophication	kg PO ₄ ³ e	1,41E-03	2,18E-04	9,74E-05	1,73E-03	1,55E-05	2,87E-05	MND	MND	MND	MND	MND	MND	MND	4,50E-06	3,82E-06	2,77E-05	1,52E-06	-8,23E-04
POCP (“smog”)	kg C ₂ H ₄ e	7,76E-04	7,85E-05	2,35E-05	8,78E-04	6,53E-06	6,46E-06	MND	MND	MND	MND	MND	MND	MND	1,71E-06	1,39E-06	1,15E-05	4,52E-07	-7,03E-04
ADP-elements	kg Sbe	1,96E-04	6,83E-07	3,11E-07	1,97E-04	2,99E-08	2,42E-07	MND	MND	MND	MND	MND	MND	MND	2,13E-08	1,76E-08	1,32E-06	1,42E-09	-1,35E-05
ADP-fossil	MJ	1,62E+03	3,01E+00	1,05E+00	1,62E+03	1,62E-01	1,73E-01	MND	MND	MND	MND	MND	MND	MND	6,25E-02	8,58E-02	2,52E-01	2,21E-02	-1,37E+01

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

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	1,64E+00	2,19E-01	9,04E-02	1,95E+00	1,22E-02	1,62E-02	MND	MND	MND	MND	MND	MND	MND	5,44E-03	6,05E-03	2,26E-02	9,12E-04	-1,40E+00

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

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 15802+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

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
12.06.2025

