



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Firestop Cable Collar
Hilti AG



EPD HUB, HUB-7039

Published on 23.07.2026, last updated on 23.07.2026, valid until 22.07.2031

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	Hilti AG
Address	Feldkircherstrasse 100, FL-9494, Schaan, Liechtenstein
Contact details	product.compliance-fire.protection@hilti.com
Website	www.hilti.group

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	Joan Berzosa Corbera (Knoell Iberia)
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Yazan Badour 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	Firestop Cable Collar
Additional labels	CFS-RCC, CFS-RCC-EXT, CFS-CC
Product reference	2065421, 2126526, 2126527
Place(s) of raw material origin	Europe, China
Place of production	Hilti Plant 5b, Romania and Hilti Plant 4a, Germany
Place(s) of installation and use	Global
Period for data	Calendar year 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+/- 2.62
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	6,04

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Firestop Cable Collar
Declared unit mass	1 kg
Mass of packaging	0,0406 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	4,78
GWP-total, A1-A3 (kgCO ₂ e)	4,82
Secondary material, inputs (%)	35,9
Total energy use, A1-A3 (kWh)	18,8
Net freshwater use, A1-A3 (m ³)	0,04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The Hilti Group supplies the worldwide construction and energy industries with technologically leading products, systems, software and services. With about 34,000 team members in over 120 countries the company stands for direct customer relationships, quality and innovation. The headquarters of the Hilti Group have been located in Schaan, Liechtenstein, since its founding in 1941. The company is privately owned by the Martin Hilti Family Trust, which ensures its long-term continuity.

PRODUCT DESCRIPTION

Solution for renovation of sealed cable-, tray- and mixed penetrations without removing existing, old firestop.

Rectangular Cable Collar:

- Dimensions (LxWxH): 200 x 200 x 85 mm
- Base materials: Concrete, Aerated concrete, Drywall, Masonry
- Broad approval range – cables, cable bundles up to 150 mm, trays, conduits and pipes (metal up to 114 mm and plastic up to 50 mm)
- Surface-mounted solution with 100% cable fill

Cable Collar:

- Solution for renovation of sealed cable penetrations with 100% fill
- Diameter: 5-29/32 in
- Suitable for new or existing single and bundled cables in floors and walls
- Re-penetrable to allow future increases in cable capacity
- Suitable for openings of max. 4" or 108 mm in diameter (sleeved or unsleeved)

Further information can be found at: www.hilti.group

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	56	Europe
Minerals	7	Europe, Asia
Fossil materials	37	Europe
Bio-based materials	0	-

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	0,008305

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Firestop Cable Collar
Mass per declared unit	1 kg
Functional unit	-
Reference service life	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	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.

The inner, PU Insulation component is manufactured at the Hilti Manufacturing Location 4a in Germany. The raw materials are dosed, mixed, moulded and cured to the required shape and form. This component is packed and transferred to the manufacturing site 5b in Romania. The steel collar is assembled here together with the inner insulating material to form the finished product. The collars are packed and transported to the Hilti logistics centre ready for transfer to customers.

The system boundaries regarding packaging consider the sales box. Due to variability, lack of data, potential deviations, and low contribution to the overall impacts, transport boxes are not considered in the system. Hence, the cardboard box present in the study as packaging is aimed at containing the product at direct sale point.

Transportation distances have been estimated based on location of the raw material supplier and manufacturer production site. The transportation distances via lorry have been estimated with Google Maps (www.google.com/maps) while those via container ship have been estimated with Sea Distances (<https://sea-distances.org/>).

For suppliers located in Europe, the transportation method is considered to be by lorry. For suppliers located in China, two transportation legs are considered: one from Hong Kong port to Hamburg port via container ship and another one from Hamburg port to the manufacturer production site via lorry.

The amounts of raw materials have been based on the bill of materials of the final product and already consider production losses. This product is composed mainly of two parts: an inner PU based insulation material and a steel-made collar. Hilti is producing the PU inner material at the plant in Germany which is then assembled in the inner part of the steel collar at the plant in Romania. In this line, all the inventory from production process is

valid as stated in the next paragraphs.

For the production process of the PU insulation material, there are two main energy requirements: electricity and natural gas. The electricity purchased is produced at wind power plants in Italy. Hence, for electricity modelling, the Ecoinvent dataset 'electricity production, wind, 1-3 MW turbine, onshore, IT' was selected. Distribution and transmission losses of 4.58% were added (Source: 2nd CEER Report on Power Losses, March 2020, Ref. C19-EQS-101-03. <https://www.ceer.eu/documents/104400/-/-/fd4178b4-ed00-6d06-5f4b-8b87d630b060>). The transmission network to the manufacturer production site, as well as associated emissions to air were also considered. Annual energy consumption for each production facility has been allocated per declared unit, with non-production consumption excluded.

The main ancillary material is lubricating oil. Manufacturing waste of the production line has been allocated to all the products produced therein. Therefore, generic market datasets have been added as ancillary material inputs for closing the mass balance with wastes, as necessary: Paper has been added to balance the wastes derived from paper and cardboard, brass has been added to balance the wastes derived from metals, and lubricating oil has been added to balance the wastes derived from liquid wastes.

Due to a lack of data on specific packaging and ancillary materials suppliers, market for datasets have been used, which already cover transportation distances and methods. In case of raw materials that might have different production routes, market for processes have been implemented in case of having no further information.

Manufacturing waste treatment has been assumed based on common practice in Germany: approx. 75% recycling; approx. 20% incineration with energy recovery, and approx. 5% other (landfill, backfilling, underground storage).

The steel components are manufactured via a bending process at the Hilti facility in Romania. To reflect this step, two processes were implemented: 1) stainless steel production: due to a lack of available data, a market process for stainless steel has been implemented; and 2) energy and auxiliary inputs consumption for the transformation of stainless steel into the required shape of the components, based on their total weight in the final product. The system considers additional transportation from Hilti Germany to the location in Romania (A2). The distance was estimated in the same way as other distances. The electricity consumption for the assembly of insulation material and steel components was modelled as the residual electricity mix of the country where the external supplier's facilities are located, according to the assumptions described in the background report.

Transportation distances of A3 waste have been assumed based on the closest recycling and incineration plants to the production site: 7 km to recycling plant, 32 km to incineration plant, 35 km to landfill, and 280 km to hazardous waste incineration.

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.

Transport to installation site considers both ship and road transport on an average assumption as explained in the assumptions paragraph. A5 stage includes packaging materials released as a waste.

PRODUCT END OF LIFE (C1-C4, D)

The energy needs during demolition are based on assumptions from Bozdag, Ö.; Seğer, M. 2007, detailed in the assumptions paragraph. This description covers not only C1 activities, but also the transport to treatment site (C2).

Assumptions for distance and transport method to waste processing are available in the Assumptions paragraph.

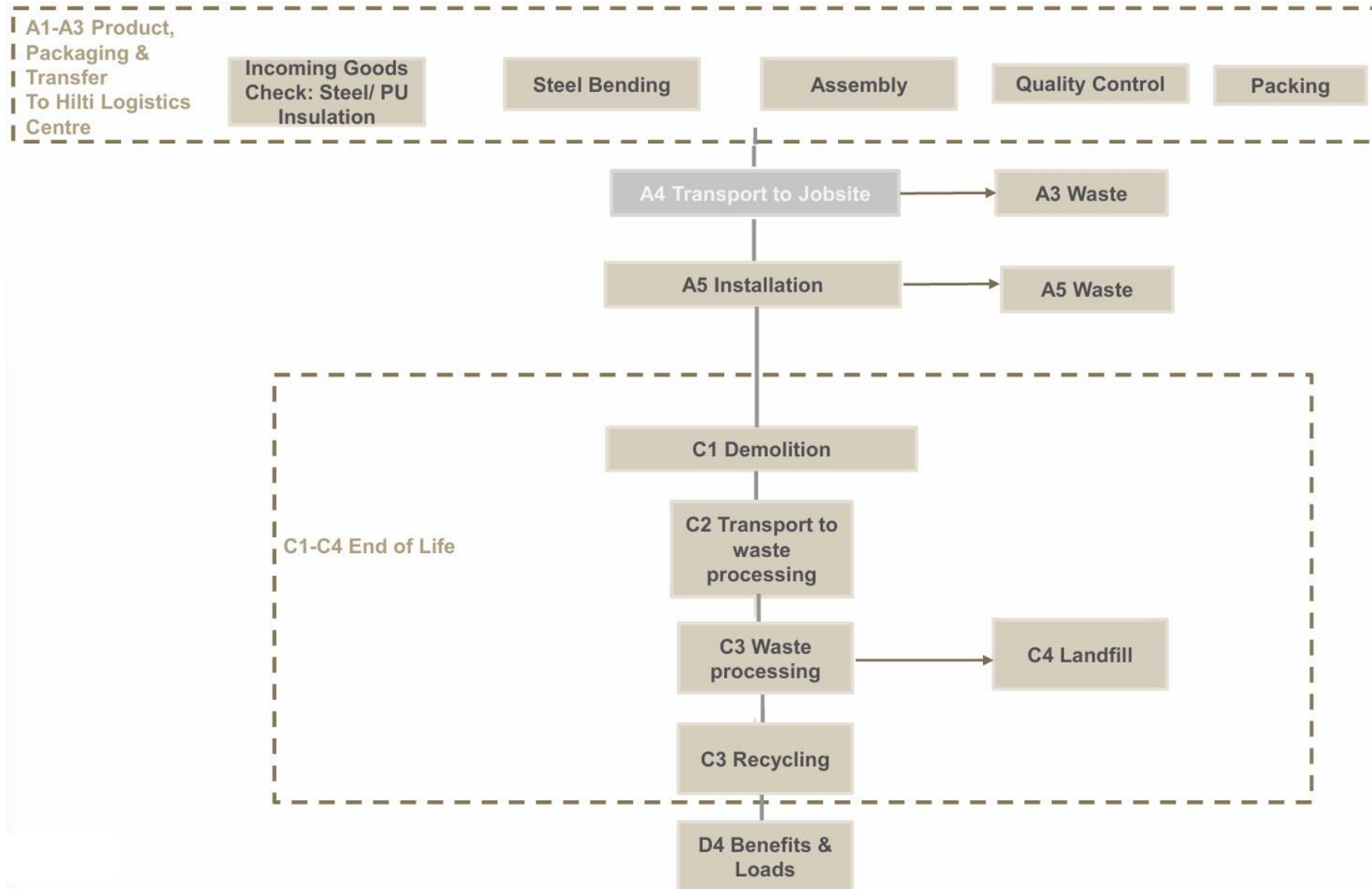
In the case of end of life of the product itself, two processes were considered corresponding to the two main product components: 1) polymer end of life scenario process: 73% in recycling and recovery (7.5% recycling rate, 65.5% incineration rate) (C3), and the remaining 27% is disposed of in a landfill (C4) according to Plastics Europe (<https://plasticseurope.org/knowledge-hub/plastics-the-facts-2020/>); and 2) steel end of life scenario process: 85% recycling rate and 15% landfill according to Worldsteel (<https://worldsteel.org/wp-content/uploads/Life-cycle-inventory-LCI-study-2020-data-release.pdf>).

Regarding end of life of packaging, end of life share from Eurostat for cardboard and paper has been adopted, considering 83% of cardboard and paper recycled, 8% incinerated, and 9% landfilled (https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519259/default/table?lang=en).

In relation to plastic packaging end of life, Eurostat states 40% of the plastic waste is recycled, 37% is incinerated, and 23% is landfilled (https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519242/default/table?lang=en).

The benefits and loads of incineration and recycling are included in Module D.

LIFE CYCLE FLOW DIAGRAM



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.

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	No allocation
Packaging material	Physical Properties
Ancillary materials	Physical Properties
Manufacturing energy and waste	Physical Properties

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on average results of product group - by total revenue
Variation in GWP-fossil for A1-A3, %	+/- 2.62

The declared unit of 1 kg of Firestop Cable Collar represents the weighted average of the product group, calculated by total revenue. Data has been consolidated from Hilti manufacturing facilities located in Germany and Romania, ensuring representativeness of the grouping in accordance with EN 15804+A2 and PCR requirements. The product group covers the full portfolio of Firestop Cable Collar. The product has identical manufacturing and chemical formulation with different in shape and size.

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'.

Note on indicator consistency: A technical inconsistency between PENRT (Total use of non-renewable primary energy) and ADP-fossil (Abiotic depletion potential for fossil resources) results in modules A1–A3 has been identified. Following an update of the dataset, a contribution analysis shows that the remaining discrepancy originates from the specific characterization factors in the background environmental profiles of the primary raw materials. These inconsistencies are inherent to the EI 3.10.1 databases used and cannot be adjusted by the practitioner.

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	4,39E+00	7,78E-02	3,53E-01	4,82E+00	1,71E-01	5,65E-02	ND	ND	ND	ND	ND	ND	ND	3,61E-03	3,41E-02	8,97E-01	1,34E-02	-5,65E-01
GWP – fossil	kg CO ₂ e	4,38E+00	7,78E-02	3,23E-01	4,78E+00	1,71E-01	2,61E-02	ND	ND	ND	ND	ND	ND	ND	3,60E-03	3,41E-02	8,97E-01	1,34E-02	-5,63E-01
GWP – biogenic	kg CO ₂ e	-4,18E-03	1,58E-05	2,93E-02	2,52E-02	3,24E-05	3,05E-02	ND	ND	ND	ND	ND	ND	ND	3,68E-07	7,19E-06	-8,55E-05	-8,96E-06	-3,72E-04
GWP – LULUC	kg CO ₂ e	1,72E-02	3,09E-05	1,06E-03	1,83E-02	7,48E-05	1,31E-06	ND	ND	ND	ND	ND	ND	ND	3,69E-07	1,40E-05	2,20E-05	2,17E-06	-9,86E-04
Ozone depletion pot.	kg CFC-11e	5,35E-08	1,51E-09	6,24E-09	6,12E-08	3,06E-09	1,94E-11	ND	ND	ND	ND	ND	ND	ND	5,52E-11	5,49E-10	9,32E-10	5,57E-11	-3,00E-09
Acidification potential	mol H ⁺ e	2,51E-02	5,11E-04	1,82E-03	2,74E-02	2,24E-03	9,02E-06	ND	ND	ND	ND	ND	ND	ND	3,25E-05	1,11E-04	1,04E-03	1,97E-05	-2,44E-03
EP-freshwater ²⁾	kg Pe	1,36E-03	4,89E-06	1,36E-04	1,51E-03	9,17E-06	3,50E-07	ND	ND	ND	ND	ND	ND	ND	1,04E-07	2,51E-06	1,07E-05	3,73E-07	-1,85E-04
EP-marine	kg Ne	4,28E-03	1,47E-04	4,42E-04	4,87E-03	5,89E-04	8,96E-06	ND	ND	ND	ND	ND	ND	ND	1,51E-05	3,65E-05	1,17E-03	2,69E-03	-3,62E-04
EP-terrestrial	mol Ne	4,46E-02	1,62E-03	3,30E-03	4,95E-02	6,52E-03	3,50E-05	ND	ND	ND	ND	ND	ND	ND	1,65E-04	3,97E-04	5,45E-03	7,92E-05	-5,32E-03
POCP (“smog”) ³⁾	kg NMVOCe	1,51E-02	5,76E-04	1,28E-03	1,69E-02	1,98E-03	1,10E-05	ND	ND	ND	ND	ND	ND	ND	4,93E-05	1,61E-04	1,31E-03	2,51E-05	-1,64E-03
ADP-minerals & metals ⁴⁾	kg Sbe	9,43E-05	1,97E-07	3,72E-06	9,82E-05	3,55E-07	1,10E-08	ND	ND	ND	ND	ND	ND	ND	1,29E-09	1,12E-07	7,88E-07	4,80E-09	-6,66E-06
ADP-fossil resources	MJ	5,80E+01	1,10E+00	4,88E+00	6,40E+01	2,33E+00	1,70E-02	ND	ND	ND	ND	ND	ND	ND	4,72E-02	4,78E-01	6,35E-01	5,06E-02	-6,65E+00
Water use ⁵⁾	m ³ e depr.	1,45E+00	5,38E-03	1,88E-01	1,64E+00	1,01E-02	9,29E-04	ND	ND	ND	ND	ND	ND	ND	1,18E-04	2,27E-03	6,56E-02	3,63E-04	-6,31E-03

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	3,16E-07	7,05E-09	4,33E-08	3,66E-07	1,24E-08	1,11E-10	ND	ND	ND	ND	ND	ND	ND	9,25E-10	2,70E-09	1,82E-08	3,57E-10	-3,81E-08
Ionizing radiation ⁶⁾	kBq 11235e	2,92E-01	1,24E-03	6,02E-02	3,53E-01	2,21E-03	8,65E-05	ND	ND	ND	ND	ND	ND	ND	2,09E-05	4,68E-04	1,57E-03	9,46E-05	-1,07E-01
Ecotoxicity (freshwater)	CTUe	3,97E+01	1,25E-01	4,50E+00	4,43E+01	2,39E-01	3,45E-02	ND	ND	ND	ND	ND	ND	ND	2,60E-03	7,10E-02	2,36E+00	6,04E-01	1,51E+00
Human toxicity, cancer	CTUh	6,20E-09	1,33E-11	3,53E-10	6,57E-09	3,12E-11	1,90E-12	ND	ND	ND	ND	ND	ND	ND	3,71E-13	5,80E-12	1,85E-10	1,69E-12	1,21E-10
Human tox. non-cancer	CTUh	8,23E-08	6,68E-10	5,90E-09	8,89E-08	1,19E-09	7,91E-11	ND	ND	ND	ND	ND	ND	ND	5,87E-12	3,00E-10	3,57E-09	3,20E-10	2,92E-08
SQP ⁷⁾	-	2,22E+01	1,00E+00	2,24E+00	2,54E+01	1,61E+00	1,76E-02	ND	ND	ND	ND	ND	ND	ND	3,30E-03	2,85E-01	3,45E-01	1,00E-01	-3,07E+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	1,02E+01	1,69E-02	6,95E-01	1,09E+01	3,10E-02	-3,23E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	7,18E-03	3,50E-02	1,32E-03	-1,36E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,60E-01	2,60E-01	0,00E+00	-2,60E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,90E-03
Total use of renew. PER	MJ	1,02E+01	1,69E-02	9,55E-01	1,12E+01	3,10E-02	-5,84E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	7,18E-03	3,50E-02	1,32E-03	-1,36E+00
Non-re. PER as energy	MJ	5,18E+01	1,10E+00	3,95E+00	5,68E+01	2,33E+00	-8,05E-01	ND	ND	ND	ND	ND	ND	ND	4,72E-02	4,78E-01	-1,03E+01	-3,94E+00	-6,68E+00
Non-re. PER as material	MJ	7,80E+00	0,00E+00	8,50E-01	8,65E+00	0,00E+00	-8,50E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-5,69E+00	-2,11E+00	2,25E-01
Total use of non-re. PER	MJ	5,95E+01	1,10E+00	4,80E+00	6,55E+01	2,33E+00	-1,66E+00	ND	ND	ND	ND	ND	ND	ND	4,72E-02	4,78E-01	-1,60E+01	-6,05E+00	-6,45E+00
Secondary materials	kg	3,59E-01	4,83E-04	2,16E-02	3,81E-01	1,04E-03	4,32E-05	ND	ND	ND	ND	ND	ND	ND	1,96E-05	2,16E-04	3,59E-04	1,59E-05	2,73E-01
Renew. secondary fuels	MJ	9,31E-04	5,49E-06	3,28E-03	4,22E-03	9,19E-06	3,21E-07	ND	ND	ND	ND	ND	ND	ND	5,12E-08	2,75E-06	1,41E-05	2,89E-07	-5,91E-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	m³	4,41E-02	1,53E-04	-2,30E-03	4,20E-02	2,80E-04	-1,36E-05	ND	ND	ND	ND	ND	ND	ND	3,12E-06	6,37E-05	1,34E-03	-4,67E-04	-1,55E-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	3,21E+00	1,58E-03	2,47E-02	3,23E+00	3,27E-03	3,94E-04	ND	ND	ND	ND	ND	ND	ND	5,25E-05	7,80E-04	1,67E-02	1,07E-04	-2,50E-01
Non-hazardous waste	kg	9,81E+00	3,07E-02	3,85E+00	1,37E+01	5,86E-02	4,67E-02	ND	ND	ND	ND	ND	ND	ND	7,15E-04	1,52E-02	4,39E-01	6,51E-01	5,54E+00
Radioactive waste	kg	7,41E-05	3,07E-07	1,79E-05	9,22E-05	5,44E-07	2,20E-08	ND	ND	ND	ND	ND	ND	ND	5,12E-09	1,15E-07	4,01E-07	2,31E-08	-2,30E-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	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	8,10E-04	8,10E-04	0,00E+00	2,51E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	4,67E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	1,70E-03	1,70E-03	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
Exported energy	MJ	1,89E-03	0,00E+00	0,00E+00	1,89E-03	0,00E+00	1,29E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,74E+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	5,42E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,57E+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	7,47E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,17E+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	4,38E+00	7,73E-02	3,84E-01	4,84E+00	1,70E-01	2,81E-02	ND	ND	ND	ND	ND	ND	ND	3,59E-03	3,39E-02	8,94E-01	1,29E-02	-5,59E-01
Ozone depletion Pot.	kg CFC ₁₁ e	4,57E-08	1,20E-09	5,78E-09	5,27E-08	2,43E-09	1,60E-11	ND	ND	ND	ND	ND	ND	ND	4,37E-11	4,38E-10	7,82E-10	4,46E-11	-2,77E-09
Acidification	kg SO ₂ e	2,09E-02	3,99E-04	1,51E-03	2,28E-02	1,78E-03	6,71E-06	ND	ND	ND	ND	ND	ND	ND	2,29E-05	8,48E-05	7,26E-04	1,41E-05	-1,99E-03
Eutrophication	kg PO ₄ ³ e	1,60E-02	6,76E-05	1,31E-03	1,74E-02	2,32E-04	4,74E-06	ND	ND	ND	ND	ND	ND	ND	5,34E-06	2,10E-05	3,38E-04	1,00E-04	-8,96E-05
POCP (“smog”)	kg C ₂ H ₄ e	1,39E-03	2,72E-05	1,54E-04	1,58E-03	9,96E-05	1,11E-06	ND	ND	ND	ND	ND	ND	ND	1,71E-06	7,77E-06	5,14E-05	2,72E-06	-3,14E-04
ADP-elements	kg Sbe	9,38E-05	1,93E-07	3,66E-06	9,76E-05	3,48E-07	1,07E-08	ND	ND	ND	ND	ND	ND	ND	1,26E-09	1,09E-07	7,66E-07	4,68E-09	-6,61E-06

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	5,32E+01	1,08E+00	4,11E+00	5,84E+01	2,29E+00	1,55E-02	ND	ND	ND	ND	ND	ND	ND	4,68E-02	4,71E-01	6,08E-01	4,91E-02	-5,14E+00

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	4,40E+00	7,78E-02	3,24E-01	4,80E+00	1,71E-01	2,61E-02	ND	ND	ND	ND	ND	ND	ND	3,61E-03	3,41E-02	8,97E-01	1,34E-02	-5,64E-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. Energy and auxilliary inputs, metal working factory, with heating from hard coal, World, Ecoinvent, 0.37 kgCO₂e/kg
2. Electricity, low voltage, residual mix, Romania, Ecoinvent, 0.38 kgCO₂e/kWh
3. Electricity production, wind, 1-3MW turbine, onshore, Italy, Ecoinvent, 0.0203 kgCO₂e/kWh
4. Heat and power co-generation, natural gas, 1MW electrical, lean burn, Albania, Ecoinvent, 0.63 kgCO₂e/kWh
5. Market for transmission network, electricity, high voltage direct current aerial line, Europe, Ecoinvent, 222932.68 kgCO₂e/km

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, sea, container ship, 6070,7 km
2. Market for transport, freight, lorry >32 metric ton, EURO5, 950.0 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	2840
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)	-
Waste materials: type and mass (kg)	Packaging: cardboard, 0.02 kg; plastic, 0.02 kg.
Waste materials: output routes	Cardboard: recycling 83%, incineration 8%, landfill 9%. Plastic: recycling 40%, incineration 37%, landfill 23%.
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	0
Collection process: Mixed waste (kg)	1
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,47
Recovery: energy recovery (kg)	0
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	The transport method to waste treatment was assumed to be by lorry, with the following transport distances: 250 km to recycling, 150 km to incineration, and 50 km to landfill

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

Yazan Badour as an authorized verifier for EPD Hub Limited 23.07.2026



Scaling Table

Reference	Product name	Product weight (kg)
2065421	CFS-CC 4"	0.95
2126526	CFS-RCC	3.35
2126527	CFS-RCC Extension Kit	2.65