

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Standoff Coupler
Hilti AG



EPD HUB, HUB-6721
Published on 19.06.2026, last updated on 19.06.2026, valid until 18.06.2031

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, LI
Contact details	sustainability@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	Jessa Valencia, Hilti AG
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	Standoff Coupler
Additional labels	
Product reference	Refer appendix
Place(s) of raw material origin	Europe
Place of production	Kopřivnice, Czech Republic (city: commercially sensitive)
Place(s) of installation and use	Worldwide
Period for data	Calendar year 2025
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	9%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	2,3

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Standoff Coupler
Declared unit mass	1 kg
Mass of packaging	0,15 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,99
GWP-total, A1-A3 ($kgCO_2e$)	3,78
Secondary material, inputs (%)	39,3
Total energy use, A1-A3 (kWh)	14,3
Net freshwater use, A1-A3 (m^3)	0,03

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. The Hilti Group's purpose is making construction better, based on a passionate and inclusive global team and a caring and performance-oriented culture.

PRODUCT DESCRIPTION

The Hilti Standoff Coupler portfolio consists of carbon steel and stainless steel variants. The coupling nut is a steel fastening component designed for use with S-BT or X-BT threaded studs to secure MEP installation systems to structural steel members. The product functions as a mechanical connector enabling the safe transfer of loads from installation supports to steel I-beams.

Application:

- Fastening single pipe rings, trapeze rod, cantilever brackets and head rails to steel I-beams
- Fastening threaded rod to steel using S-BT screw-in threaded studs
- Installing piping, air ducts and cable supports in mildly corrosive environments

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Europe
Minerals	-	-
Fossil materials	-	-
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	0,0614

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Standoff Coupler
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 Standoff Coupler is available in multiple sizes made of carbon steel and stainless steel variants. The supplier of the steel raw material and the manufacturing facility are both located in Kopřivnice, Czech Republic, ensuring short transport distances for raw material delivery. Steel is supplied in the form of coil input. Both supplier and factory are based in the same city, transport distances are comparatively low. No additional intermediate transport stages occur prior to manufacturing. The production processes of machining and surface treatment are done in the same factory. The loss of material which occurs during the manufacturing process is considered. The waste, which occurs during the manufacturing process, goes for recycling. Final product is then packaged on-site using cardboard before distribution.

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.

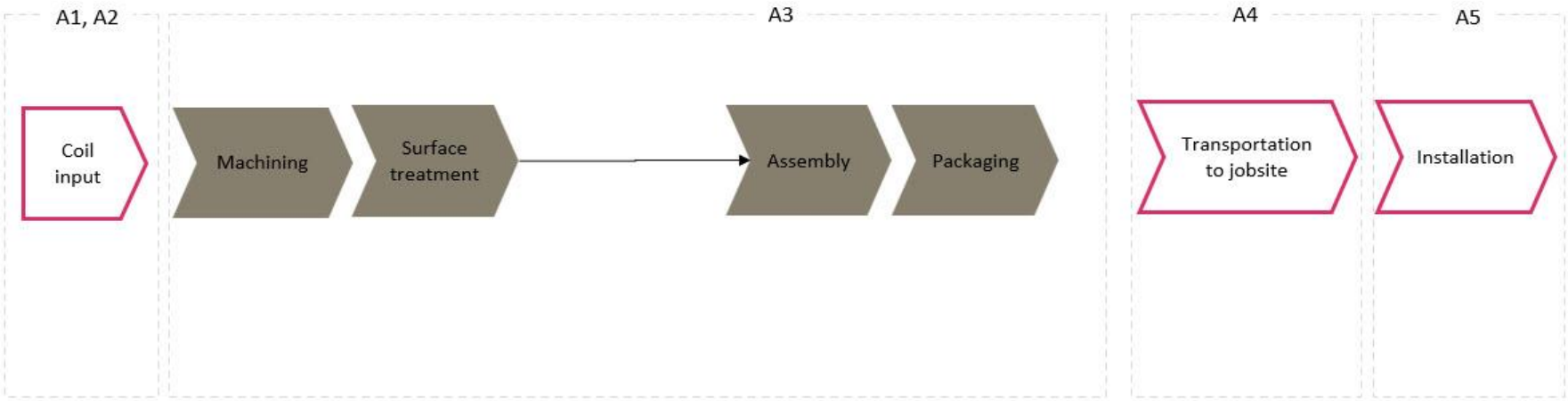
The transportation is calculated based on the distance traveled by lorry/ ship from the manufacturing facility to the Hilti distribution centers all over the world. The stated distances are weighted mean values based on 2025 sales figures. Vehicle capacity utilization volume factor may vary but as role 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 is packaged properly. Disposal of the packaging, including some residual product within, is accounted for in A5. Emissions due to installation are assumed to be negligible as they are typically performed using simple manual tools which do not consume energy.

PRODUCT END OF LIFE (C1-C4, D)

The product is considered to be dismantled by a power tool and with negligible energy use. It is assumed that the steel waste is collected separately and transported to the waste treatment facility. Transportation distance to waste treatment plant and to landfill is assumed to be 100 km, the transportation method is assumed to be lorry. Module C3 accounts for energy and resource inputs for sorting and treating of steel for recycling. Landfilled material is included in module C4. Due to the material recovery potential of the product and material and energy recovery potential of its packaging, recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module D.

Recycling rates for end-of-life modelling follow EN 50693 guidance. Steel and other ferrous metal waste are assigned an 80% recycling rate, consistent with typical recovery performance for ferrous scrap. Stainless steel is modelled with a 95% recycling rate, reflecting updated global recycling statistics reported by World Stainless (2024). The remaining fractions are considered to undergo residual waste treatment.

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.

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.

This LCA study includes the provision of all materials, transportation, energy, and emission flows, and end-of-life processing of product. All industrial processes from raw material acquisition, pre-processing, production, product distribution, installation and end-of-life management are included. Due to lack of data, some materials which are used in the product manufacturing only in very small amounts (less than 1% cut off criteria) and have a negligible impact on the emissions of the product. The production of capital equipment, construction activities, 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	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Physical Properties

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on worst-case results
Variation in GWP-fossil for A1-A3, %	9%

The Standoff Coupler is available in multiple sizes made of carbon steel and stainless steel variants with the raw material composition, manufacturing processes and locations remain identical in every case. The version in average results of product by total weight is used as the representative product for this EPD, and the variability in GWP-fossil for A1-A3 is within the allowed range. All product variants were assessed separately and in full in order to document this. The whole portfolio range is available in the Appendix.

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‘.

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_2e	3,77E+00	9,15E-02	-8,28E-02	3,78E+00	2,14E-01	4,30E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,42E-02	2,17E-02	7,80E-04	-2,61E+00
GWP – fossil	kg CO_2e	3,76E+00	9,14E-02	1,36E-01	3,99E+00	2,14E-01	5,38E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,42E-02	2,18E-02	7,80E-04	-2,61E+00
GWP – biogenic	kg CO_2e	3,83E-03	1,98E-05	-2,25E-01	-2,21E-01	4,24E-05	4,24E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,65E-06	-5,58E-05	-2,48E-07	-1,40E-03
GWP – LULUC	kg CO_2e	3,14E-03	4,09E-05	6,27E-03	9,45E-03	7,55E-05	2,95E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,96E-05	2,62E-05	4,46E-07	-2,14E-03
Ozone depletion pot.	kg CFC-$_{11}$e	2,49E-08	1,35E-09	3,93E-09	3,02E-08	4,25E-09	5,42E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,18E-10	2,63E-10	2,26E-11	-1,57E-08
Acidification potential	mol H^+e	1,89E-02	3,12E-04	6,44E-04	1,98E-02	6,68E-04	2,17E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,47E-04	2,46E-04	5,53E-06	-1,38E-02
EP-freshwater[2)]	kg Pe	1,36E-03	7,12E-06	8,03E-05	1,44E-03	1,42E-05	1,20E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,44E-06	1,29E-05	6,41E-08	-7,87E-04
EP-marine	kg Ne	3,61E-03	1,02E-04	3,45E-04	4,05E-03	2,25E-04	3,42E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,77E-05	5,45E-05	2,11E-06	-2,44E-03
EP-terrestrial	mol Ne	3,85E-02	1,11E-03	2,24E-03	4,19E-02	2,45E-03	6,87E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,19E-04	6,15E-04	2,30E-05	-2,74E-02
POCP ("smog")[3)]	kg NMVOCe	1,25E-02	4,60E-04	5,64E-04	1,35E-02	1,05E-03	2,61E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,05E-04	1,82E-04	8,25E-06	-8,69E-03
ADP-minerals & metals[4)]	kg Sbe	7,22E-05	2,55E-07	5,94E-07	7,30E-05	6,99E-07	3,48E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,45E-07	1,41E-06	1,24E-09	-6,41E-05
ADP-fossil resources	MJ	4,09E+01	1,33E+00	2,01E+00	4,43E+01	3,00E+00	4,90E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,20E-01	2,74E-01	1,91E-02	-2,72E+01
Water use[5)]	m^3e depr.	1,13E+00	6,55E-03	8,51E-02	1,22E+00	1,47E-02	1,35E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-03	4,64E-03	5,53E-05	-5,88E-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, 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	3,00E-07	9,16E-09	6,03E-09	3,16E-07	1,68E-08	2,91E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,51E-09	3,38E-09	1,26E-10	-2,04E-07
Ionizing radiation[6)]	kBq U235e	2,04E-01	1,16E-03	1,54E-02	2,20E-01	3,83E-03	3,22E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,02E-04	1,68E-03	1,20E-05	-8,96E-02
Ecotoxicity (freshwater)	CTUe	1,07E+01	1,88E-01	1,31E+00	1,22E+01	3,94E-01	1,71E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,80E-02	1,59E-01	1,61E-03	-3,98E+00
Human toxicity, cancer	CTUh	4,94E-09	1,51E-11	4,33E-11	5,00E-09	3,64E-11	3,90E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,51E-12	1,84E-11	1,44E-13	-1,84E-09
Human tox. non-cancer	CTUh	6,24E-08	8,59E-10	1,06E-09	6,43E-08	1,88E-09	2,06E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,88E-10	1,21E-09	3,30E-12	-1,61E-08
SQP[7)]	-	1,66E+01	1,34E+00	5,81E+00	2,38E+01	1,79E+00	3,60E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,70E-01	5,26E-01	3,77E-02	-1,29E+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	7,98E+00	1,82E-02	-7,76E-01	7,22E+00	5,19E-02	-2,37E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,50E-03	4,70E-02	1,85E-04	-6,26E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,92E+00	1,92E+00	0,00E+00	-1,92E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,30E-02
Total use of renew. PER	MJ	7,98E+00	1,82E-02	1,15E+00	9,14E+00	5,19E-02	-4,29E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,50E-03	4,70E-02	1,85E-04	-6,25E+00
Non-re. PER as energy	MJ	4,09E+01	1,33E+00	2,05E+00	4,43E+01	3,00E+00	4,90E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,20E-01	2,74E-01	1,92E-02	-2,72E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	6,28E-03	6,28E-03	0,00E+00	-6,28E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,20E-05
Total use of non-re. PER	MJ	4,09E+01	1,33E+00	2,06E+00	4,43E+01	3,00E+00	4,27E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,20E-01	2,74E-01	1,92E-02	-2,72E+01
Secondary materials	kg	3,93E-01	5,65E-04	1,49E-01	5,43E-01	1,37E-03	8,12E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,79E-04	3,26E-04	4,81E-06	5,11E-01
Renew. secondary fuels	MJ	8,39E-04	7,17E-06	1,39E-02	1,48E-02	1,74E-05	4,57E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,55E-06	1,50E-05	9,97E-08	-6,60E-04
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	m^3	3,22E-02	1,96E-04	2,04E-03	3,45E-02	4,04E-04	-2,60E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,21E-05	1,33E-04	1,99E-05	-3,16E-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	3,03E+00	2,25E-03	8,25E-03	3,04E+00	4,30E-03	8,35E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,08E-03	1,96E-03	2,12E-05	-2,42E+00
Non-hazardous waste	kg	8,25E+00	4,16E-02	2,16E-01	8,51E+00	9,08E-02	9,20E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,03E-02	6,25E-02	4,83E-04	9,69E-01
Radioactive waste	kg	5,10E-05	2,83E-07	3,93E-06	5,52E-05	9,51E-07	8,21E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,23E-07	4,26E-07	2,94E-09	-2,21E-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	1,50E-02	1,50E-02	0,00E+00	1,24E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,80E-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	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,90E-02	ND	ND	ND	ND	ND	ND	ND	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	2,40E-02	ND	ND	ND	ND	ND	ND	ND	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	3,50E-02	ND	ND	ND	ND	ND	ND	ND	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_2e	3,75E+00	9,09E-02	1,45E-01	3,98E+00	2,12E-01	2,00E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,40E-02	2,17E-02	7,73E-04	-2,59E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	2,16E-08	1,08E-09	3,21E-09	2,59E-08	3,38E-09	4,44E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,94E-10	2,17E-10	1,79E-11	-1,34E-08
Acidification	kg SO_2e	1,56E-02	2,38E-04	4,58E-04	1,63E-02	5,08E-04	1,66E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,13E-04	1,98E-04	4,10E-06	-1,15E-02
Eutrophication	kg PO_4^3e	2,29E-03	5,80E-05	2,77E-04	2,63E-03	1,29E-04	2,43E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,74E-05	2,84E-05	1,30E-06	-1,21E-03
POCP (“smog”)	kg C_2H_4e	1,24E-03	2,12E-05	4,24E-05	1,30E-03	4,84E-05	4,81E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,01E-05	1,17E-05	3,87E-07	-8,72E-04
ADP-elements	kg Sbe	7,19E-05	2,49E-07	6,01E-07	7,28E-05	6,83E-07	3,41E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,42E-07	1,41E-06	1,22E-09	-6,39E-05

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	3,76E+01	1,31E+00	1,73E+00	4,07E+01	2,94E+00	4,34E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,12E-01	2,46E-01	1,90E-02	-2,58E+01

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_2e	3,77E+00	9,15E-02	1,42E-01	4,00E+00	2,14E-01	5,39E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,42E-02	2,18E-02	7,81E-04	-2,61E+00

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. Electricity, medium voltage, European attribute mix, Europe, Ecoinvent, 0.000092 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry 16-32 metric ton, EURO5, 960,5 km

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	0,00E+00
Volume capacity utilization factor	1

Installation scenario documentation - A5 (Installation waste)

1. Treatment of waste paperboard, unsorted, sorting, Ecoinvent, Materials for recycling, 0.124 kg
2. Treatment of waste packaging paper, municipal incineration, Ecoinvent, 0.012 kg
3. Treatment of waste packaging paper, sanitary landfill, Ecoinvent, 0.013 kg
4. Exported Energy: Electricity, Ecoinvent, 0.024 MJ
5. Exported Energy: Thermal, Ecoinvent, 0.035 MJ

End-of-life scenario documentation - C1-C4 (Data source)

1. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.41 kg
2. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.1 kg
3. Treatment of scrap steel, inert material landfill, Ecoinvent, 0.025 kg
4. Sorting and pressing of iron scrap, Ecoinvent, Materials for recycling, 0.47 kg

Scenario information	Value
Scenario assumptions e.g. transportation	50 km

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 19.06.2026



APPENDIX

PRODUCT PORTFOLIO INCLUDED IN SCOPE

The following list of products are included in the scope of this declaration:

Item Number	Product name	Weight [kg]
2284786	Adapter RC-MF-M8 47/35	3.853
2284788	Adapter RC-MF-M10 47/35	3.502
2284787	Adapter RC-MR-M10 47/35	3.567
2284789	Adapter RC-MR-M8 47/35	3.923