



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Self tapping threaded studs
Hilti AG



EPD HUB, HUB-2538

Published on 08.05.2026, last updated on 08.05.2026, valid until 08.05.2031

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, CH
Contact details	Sustainability@hilti.com
Website	www.hilti.com

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	Elise Janssen
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	Self tapping threaded studs
Additional labels	Refer appendix
Product reference	2345767
Place(s) of raw material origin	Europe
Place of production	Schaan, Liechtenstein
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 (%)	50
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	83,9

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Self tapping threaded studs
Declared unit mass	1 kg
Mass of packaging	0,110 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3,51
GWP-total, A1-A3 (kgCO ₂ e)	3,38
Secondary material, inputs (%)	35,2
Secondary material, outputs (%)	85,25
Total energy use, A1-A3 (kWh)	16,4
Net freshwater use, A1-A3 (m ³)	0,01

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 33,000 team members in over 120 countries the company stands for direct customer relationships, quality and innovation. Hilti generated annual sales of more than CHF 6.3 billion in 2022. 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

Hilti Threaded Stud Portfolio consists of duplex coated carbon steel and stainless steel screws. M6/W6/M8/M10/W10 variants are included in 2 lengths. Based on the intended use of the product the threaded stud will come in the sales box with flange nuts, hex nuts + spring washers, conductivity discs or without elements. Typical application for threaded studs include fastening on steel for multipurpose fastening, grating fastening and electrical connections.

Further information can be found at www.hilti.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Germany
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	-
Biogenic carbon content in packaging, kg C	0,04

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Self tapping threaded studs
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	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 referenced product is threaded stud S-BT-GR M8/7, which is a threaded stud, used for fastening on steel. The reference threaded stud is made from stainless steel. The steel is EAF. The coils are cut and cold formed to form the blank in its final size and shape. The part is the rolled to form the thread and the heat treated to get the desired properties. The steel stud is coated and finally packaged and distributed. The manufacturing process requires electricity for powering the production equipment. A wooden pallet and cardboard are used as packaging materials for transporting the screw to the dedicated market places.

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.

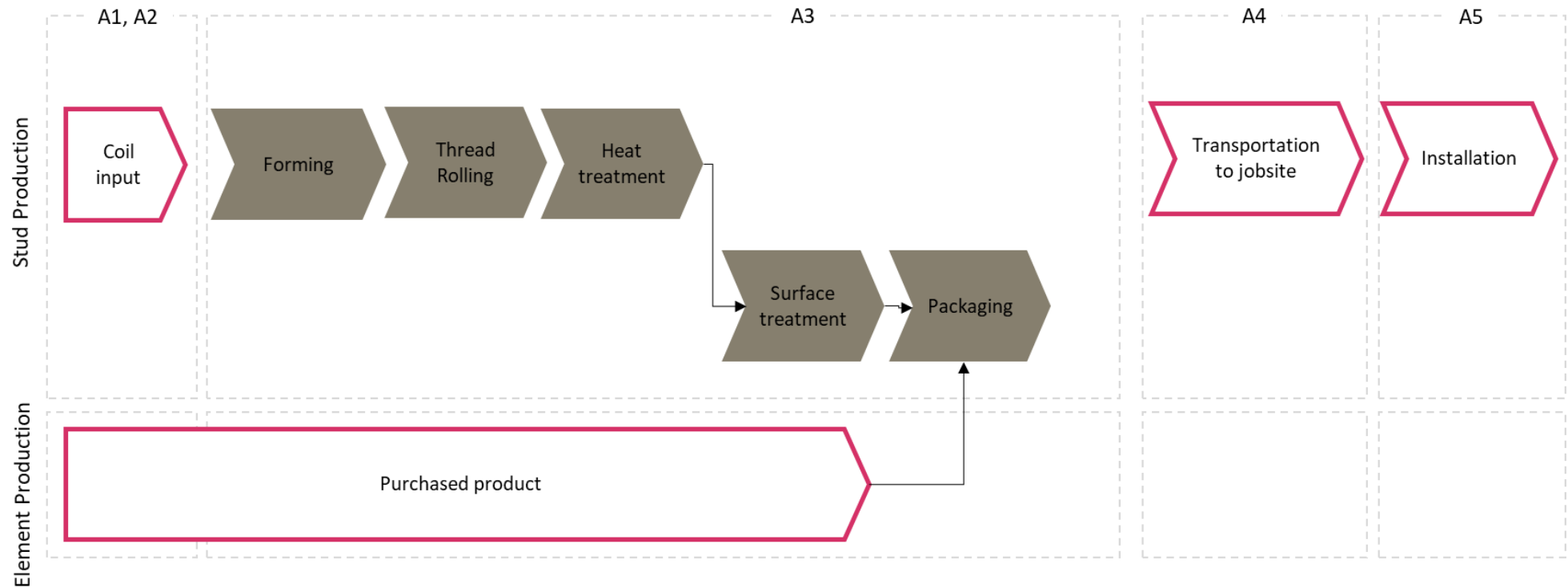
The transportation is calculated based on the distance travelled by lorry from the supplier to the warehouses in Hilti Liechtenstein which estimated distance of averaged 2km. Vehicle capacity utilization volume factor may vary but as role of transportation emissions in total results is small, the variety 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.

Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets/cardboard boxes. The impacts of material production, its processing and its disposal as installation waste are also assessed. Screws used in the installation process and electricity consumption for the assembly are considered, too. No installation losses happen in this stage if the installation process is carried out appropriately according to Hilti instructions.

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 50 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 rate of 85% in the calculation is based on world average. Actual recyclability may vary between regions.

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.

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.

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 raw material 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 EPD databases used and cannot be adjusted by the practitioner.

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	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	50

The representative product is threaded stud S-BT-GR M8/7 which is a stainless steel stud. The products included in the averaging are carbon steel or stainless steel, coated studs with different screw lengths, diameter, and/or components. They share the function of fastening on metal substructures.

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 ₂ e	2,92E+00	5,85E-02	4,03E-01	3,38E+00	3,08E-04	1,77E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-02	6,22E-02	7,43E-04	-4,47E+00
GWP – fossil	kg CO ₂ e	2,89E+00	5,85E-02	5,60E-01	3,51E+00	3,08E-04	1,72E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-02	6,22E-02	7,43E-04	-4,47E+00
GWP – biogenic	kg CO ₂ e	2,98E-02	1,32E-05	-1,60E-01	-1,30E-01	6,98E-08	1,60E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,01E-05	-4,52E-05	-3,95E-07	-1,45E-03
GWP – LULUC	kg CO ₂ e	2,41E-03	2,62E-05	2,19E-03	4,62E-03	1,38E-07	2,80E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,06E-05	2,63E-05	2,10E-07	-4,32E-03
Ozone depletion pot.	kg CFC-11e	5,62E-08	8,63E-10	2,11E-08	7,82E-08	4,55E-12	4,89E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,49E-10	2,97E-10	1,02E-11	-3,02E-08
Acidification potential	mol H ⁺ e	1,55E-02	1,99E-04	2,09E-03	1,78E-02	1,05E-06	1,84E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,55E-04	2,57E-04	2,56E-06	-2,51E-02
EP-freshwater ²⁾	kg Pe	8,32E-04	4,55E-06	1,95E-04	1,03E-03	2,40E-08	9,45E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,61E-06	1,37E-05	3,10E-08	-1,34E-03
EP-marine	kg Ne	3,10E-03	6,55E-05	4,91E-04	3,66E-03	3,45E-07	2,78E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,01E-05	5,80E-05	1,07E-05	-4,49E-03
EP-terrestrial	mol Ne	3,30E-02	7,13E-04	4,54E-03	3,83E-02	3,76E-06	6,40E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,46E-04	6,54E-04	1,06E-05	-4,79E-02
POCP (“smog”) ³⁾	kg NMVOCe	1,18E-02	2,94E-04	1,68E-03	1,38E-02	1,55E-06	2,33E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,16E-04	1,93E-04	3,86E-06	-1,53E-02
ADP-minerals & metals ⁴⁾	kg Sbe	7,81E-05	1,63E-07	7,97E-06	8,63E-05	8,60E-10	2,37E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,52E-07	1,50E-06	6,05E-10	-1,16E-04
ADP-fossil resources	MJ	4,95E+01	8,49E-01	5,81E+00	5,62E+01	4,47E-03	4,45E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,51E-01	2,90E-01	8,67E-03	-4,83E+01
Water use ⁵⁾	m ³ e depr.	8,56E-01	4,19E-03	1,94E-01	1,05E+00	2,21E-05	1,18E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,02E-03	7,24E-03	2,77E-05	-1,28E+00

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, 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	6,11E-09	5,86E-09	2,97E-08	4,16E-08	3,09E-11	2,83E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,69E-09	3,45E-09	5,78E-11	-3,57E-07
Ionizing radiation ⁶⁾	kBq 11235a CTUe	9,22E-03	7,39E-04	3,36E-02	4,35E-02	3,90E-06	2,11E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,27E-04	2,43E-03	5,97E-06	-1,88E-01
Ecotoxicity (freshwater)	CTUe	5,43E-01	1,20E-01	5,66E+00	6,32E+00	6,33E-04	1,02E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,03E-01	2,33E-01	1,69E-02	-1,27E+01
Human toxicity, cancer	CTUh	3,99E-11	9,65E-12	1,03E-09	1,08E-09	5,09E-14	2,96E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,89E-12	1,93E-11	1,09E-13	-4,02E-09
Human tox. non-cancer	CTUh	9,28E-10	5,49E-10	8,30E-09	9,78E-09	2,90E-12	1,47E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,08E-10	1,30E-09	1,18E-11	-8,91E-08
SQP ⁷⁾	-	4,07E-01	8,55E-01	1,24E+01	1,36E+01	4,50E-03	4,40E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,90E-01	5,54E-01	1,75E-02	-2,27E+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	4,27E+00	1,16E-02	1,28E+01	1,71E+01	6,13E-05	-1,56E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,93E-03	5,33E-02	9,19E-05	-1,15E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,30E+00	1,30E+00	0,00E+00	-1,30E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,29E-02
Total use of renew. PER	MJ	4,27E+00	1,16E-02	1,41E+01	1,84E+01	6,13E-05	-2,86E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,93E-03	5,33E-02	9,19E-05	-1,15E+01
Non-re. PER as energy	MJ	3,73E+01	8,49E-01	3,62E+00	4,18E+01	4,47E-03	-3,93E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,51E-01	-6,42E-02	-1,62E-01	-4,83E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	4,82E-01	4,82E-01	0,00E+00	-4,82E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,34E-02
Total use of non-re. PER	MJ	3,73E+01	8,49E-01	4,10E+00	4,23E+01	4,47E-03	-8,75E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,51E-01	-6,42E-02	-1,62E-01	-4,82E+01
Secondary materials	kg	3,52E-01	3,61E-04	5,04E-02	4,03E-01	1,90E-06	6,54E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,93E-04	3,53E-04	2,31E-06	5,24E-01
Renew. secondary fuels	MJ	2,49E-04	4,59E-06	2,08E-02	2,10E-02	2,42E-08	4,59E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,72E-06	1,63E-05	4,69E-08	-1,23E-03
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	8,55E-03	1,25E-04	4,82E-03	1,35E-02	6,61E-07	-8,13E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,63E-05	1,90E-04	-9,60E-06	-3,91E-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	1,65E-02	1,44E-03	7,52E-02	9,32E-02	7,58E-06	6,15E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,14E-03	3,13E-03	1,04E-05	-4,37E+00
Non-hazardous waste	kg	3,30E-01	2,66E-02	1,70E+00	2,06E+00	1,40E-04	1,53E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,13E-02	8,18E-02	2,36E-02	-9,08E+00
Radioactive waste	kg	2,70E-03	1,81E-07	8,50E-06	2,70E-03	9,54E-10	5,36E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-07	6,23E-07	1,46E-09	-4,61E-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	4,24E-03	0,00E+00	7,22E-03	1,15E-02	0,00E+00	7,24E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,36E-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	1,58E+04	0,00E+00	0,00E+00	1,58E+04	0,00E+00	9,50E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,26E-01	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-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,30E-02	0,00E+00	0,00E+00
Exported energy –	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,50E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,30E-02	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	2,74E+00	5,82E-02	5,68E-01	3,37E+00	3,07E-04	2,61E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,62E-02	6,21E-02	7,22E-04	-4,45E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1,78E-08	6,89E-10	2,12E-08	3,97E-08	3,63E-12	3,98E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,19E-10	2,45E-10	8,11E-12	-2,55E-08
Acidification	kg SO ₂ e	1,24E-02	1,52E-04	1,60E-03	1,42E-02	8,03E-07	1,39E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,18E-04	2,07E-04	1,90E-06	-2,08E-02
Eutrophication	kg PO ₄ ³ e	2,10E-03	3,71E-05	8,16E-04	2,96E-03	1,96E-07	1,51E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,88E-05	3,05E-05	1,01E-06	-2,86E-03
POCP ("smog")	kg C ₂ H ₄ e	7,72E-04	1,36E-05	1,36E-04	9,21E-04	7,15E-08	3,27E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,06E-05	1,23E-05	2,36E-07	-1,27E-03
ADP-elements	kg Sbe	6,47E-05	1,59E-07	6,10E-06	7,09E-05	8,39E-10	2,32E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,49E-07	1,50E-06	5,92E-10	-1,16E-04

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	2,86E+01	8,37E-01	5,26E+00	3,47E+01	4,41E-03	4,08E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,43E-01	2,48E-01	8,57E-03	-4,55E+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 ₂ e	2,89E+00	5,85E-02	5,62E-01	3,51E+00	3,08E-04	1,72E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,64E-02	6,22E-02	7,43E-04	-4,47E+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 production, photovoltaic, 3kWp facade installation, multi-Si, laminated, integrated, Switzerland, Ecoinvent, 0.12 kgCO₂e/kWh
2. Electricity production, wind, 1-3MW turbine, onshore, World, Ecoinvent, 0.0156 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO5, 2 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

1. Exported energy: Thermal, Ecoinvent, 0.018 MJ
2. Exported energy: Electricity, Ecoinvent, 0.013 MJ
3. Treatment of waste paperboard, unsorted, sorting, Ecoinvent, 0.065 kg
4. Treatment of waste packaging paper, municipal incineration, Ecoinvent, 0.0063 kg
5. Treatment of waste packaging paper, sanitary landfill, Ecoinvent, 0.0071 kg
6. Exported energy: Thermal, Ecoinvent, 0.037 MJ
7. Exported energy: Electricity, Ecoinvent, 0.027 MJ
8. Treatment of waste polyethylene, sanitary landfill, Ecoinvent, 0.0025 kg
9. Treatment of waste polyethylene, municipal incineration, Ecoinvent, 0.004 kg
10. Treatment of waste polyethylene, recycling, unsorted, sorting, Ecoinvent, 0.0043 kg
11. Exported energy: Thermal, Ecoinvent, 0 MJ
12. Exported energy: Electricity, Ecoinvent, 0 MJ
13. Treatment of waste wood, post-consumer, sorting and shredding, Ecoinvent, 0.0031 kg
14. Treatment of waste wood, untreated, municipal incineration, Ecoinvent, 0 kg
15. Treatment of waste wood, untreated, sanitary landfill, Ecoinvent, 0.017 kg

End of life (C1-C4) - Scenario documentation

1. Sorting and pressing of iron scrap, Ecoinvent, 0.92 kg
2. Treatment of waste steel, inert material landfill, Ecoinvent, 0.048 kg
3. Sorting and pressing of iron scrap, Ecoinvent, 0.016 kg
4. Treatment of waste steel, inert material landfill, Ecoinvent, 0.00086 kg
5. Exported Energy: Thermal, Ecoinvent, 0.073 MJ
6. Exported Energy: Electricity, Ecoinvent, 0.053 MJ
7. Treatment of waste rubber, unspecified, municipal incineration, Ecoinvent, 0.013 kg
8. Treatment of waste plastic, mixture, sanitary landfill, Ecoinvent, 0.0047 kg

Scenario information	Value
Scenario assumptions e.g. transportation (mode, km) & other	Transported 50 km by truck to local recycling station

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 08.05.2026



APPENDIX

PRODUCT PORTFOLIO INCLUDED IN SCOPE

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

Item number	Item designation	Weight [kg]
2346060	Threaded stud S-BT-MF M10/15 AN 6 HL	0.0247
2346061	Threaded stud S-BT-MF W10/15 AN 6 HL	0.0215
2350549	Threaded stud S-BT-MF MT M10/15 AN 6 HL	0.0247
2350880	Threaded stud S-BT-MF MT W10/15 AN 6 HL	0.0215
2346071	Elec. connector S-BT-EF M10/15 AN 6 HL	0.02933
2346072	Elec. connector S-BT-EF W10/15 AN 6 HL	0.0245
2346077	Elec. connector S-BT-EF M10 HC 120 HL	0.03593
2346078	Elec. connector S-BT-EF W10 HC 4/0 HL	0.0379
2345767	Threaded stud S-BT-GR M8/7 SN 6 HL	0.0062
2350548	Threaded stud S-BT-GR M8/7 SN 6 HL AL	0.0062
2346062	Threaded stud S-BT-MR M8/7 SN 6 HL	0.0132
2346063	Threaded stud S-BT-MR M8/15 SN 6 HL	0.0166
2346064	Threaded stud S-BT-MR M10/15 SN 6 HL	0.0251
2346065	Threaded stud S-BT-MR W10/15 SN 6 HL	0.0219
2346066	Threaded stud S-BT-MR M8/7 SN 6 HL AL	0.0126
2346067	Threaded stud S-BT-MR M8/15 SN 6 HL AL	0.0166
2346068	Threaded stud S-BT-MR M10/15 SN 6 HL AL	0.0251
2346069	Threaded stud S-BT-MR W10/15 SN 6 HL AL	0.0219
2346073	Elec. connector S-BT-ER M8/15 SN 6 HL	0.01705
2346074	Elec. connector S-BT-ER M10/15 SN 6 HL	0.02955
2346075	Elec. connector S-BT-ER W10/15 SN 6 HL	0.0257
2346079	Elec. connector S-BT-ER M10 HC 120 HL	0.03615
2346080	Elec. connector S-BT-ER W10 HC 4/0 HL	0.0381
2194344	Threaded stud X-BT-GR M8/7 SN 8	0.006163
2480863	Threaded stud X-BT-GR M8/7 SN 8 V3	0.006163
2252199	Threaded stud X-BT-MR M6/10 SN 8	0.01029
2480873	Threaded stud X-BT-MR M6/10 SN 8 V3	0.01029
2252470	Threaded stud X-BT-MR W6/10 SN 8	0.010435

Item number	Item designation	Weight [kg]
2480867	Threaded stud X-BT-MR W6/10 SN 8 V3	0.010435
2194339	Threaded stud X-BT-MR M8/14 SN 8	0.016336
2480866	Threaded stud X-BT-MR M8/14 SN 8 V3	0.016336
2194340	Threaded stud X-BT-MR M10/15 SN 8	0.024594
2480865	Threaded stud X-BT-MR M10/15 SN 8 V3	0.024594
2194341	Threaded stud X-BT-MR W10/15 SN 8	0.02257
2480874	Threaded stud X-BT-MR W10/15 SN 8 V3	0.02257
2217525	Threaded stud X-BT-MR0 M10/15 SN 8	0.013394
2480920	Threaded stud X-BT-MR0 M10/15 SN 8 V3	0.013394
2220460	Threaded stud X-BT-MR0 W10/15 SN 8	0.01217
2252195	Elec. connector X-BT-ER M6/3 SN 8	0.01225
2480625	Elec. connector X-BT-ER M6/3 SN 8 V3	0.01225
2252198	Elec. connector X-BT-ER W6/3 SN 8	0.012495
2480649	Elec. connector X-BT-ER W6/3 SN 8 V3	0.012495
2194351	Elec. connector X-BT-ER M8/7 SN 8	0.016486
2480626	Elec. connector X-BT-ER M8/7 SN 8 V3	0.016486
2194352	Elec. connector X-BT-ER M10/7 SN 8	0.02731
2480862	Elec. connector X-BT-ER M10/7 SN 8 V3	0.02731
2194353	Elec. connector X-BT-ER W10/7 SN 8	0.027994
2480864	Elec. connector X-BT-ER W10/7 SN 8 V3	0.027994