

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

HIT-Z-R
Hilti AG



EPD HUB, HUB-3511
Published on 20.06.2025, last updated on 08.10.2026, valid until 20.06.2030

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+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	Ege Oguzhan Parlak
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ 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	HIT-Z-R
Additional labels	
Product reference	2018433
Place of production	Schaan, Liechtenstein
Period for data	2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	1,27

ENVIRONMENTAL DATA

SUMMARY Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5,25E+00
GWP-total, A1-A3 ($kgCO_2e$)	5,23E+00
Secondary material, inputs (%)	59
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	20,8
Net freshwater use, A1-A3 (m^3)	0,05

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

Ultimate-performance anchor rod for injectable hybrid anchors (A4 stainless steel) with the following features:

- Very high loads in cracked concrete and seismic applications according to ICC-ES and ETA C2 approvals
- No hole cleaning required (above 5°C / 41°F) with HIT-HY 200
- More reliable and productive solution thanks to elimination of the hole cleaning process when used with HIT-HY 200 adhesive mortars
- Variable depth of embedment to fully utilise the anchor capacity
- Head marking for easy verification of rod length, even after installation

100% of the declared product derives from electric arc furnace (arc) produced steel and carries secondary material (recycled material) content of 80%. Based on the most comprehensive market information and internal evaluations available, the pre-consumer share is on average approximately 30% (out of 80%), which means a 24% share of the steel components, while the post-consumer share is on average approximately 70% (out of 80%), which means a 56% share of the steel components.

Applications:
- Fastenings in cracked and uncracked concrete made with Hilti HIT-HY 200
- Seismic anchoring applications (e.g. bracing of reinforced concrete buildings)
- Anchoring structural steel connections (e.g. steel columns, beams)
- Outdoor applications or fastenings in corrosive environments with HIT-Z-R

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	0	
Fossil materials	0	
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	0,038

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
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.

A market-based approach is used in modelling the electricity mix utilized in the factory.

For module A1, transport of raw materials to the manufacturing site is modeled using >32 metric ton EURO 5 lorries over distances ranging from 600 to 670 km. A production loss of 1% is considered during processing. The manufacturing process includes sheet rolling and wire drawing, representative of typical metalworking operations. Electricity is required to power the production equipment, and the energy used is covered by green electricity certificates, sourced from wind energy. A cardboard box is used as packaging for transporting products to points of sale. Ancillary materials include wax coating and compressed air. Transport of packaging and ancillary materials is modeled using >32 metric ton EURO 5 lorries, with distances reflecting typical point-to-point logistics within Europe.

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.

For module A4, transportation to the installation site is modeled in two legs: 825 km by road using a 16–32 metric ton EURO 5 lorry, and 3540 km by sea using a container ship. For module A5, no material loss occurs during installation, no additional installation materials are used, and no energy consumption is required. End-of-life (EoL) assumptions for installation waste consider 83% recycled, 8% incinerated, and 9% landfilled. Transport of A5 waste is modeled as 50 km by road using a 16–32 metric ton EURO 5 lorry.

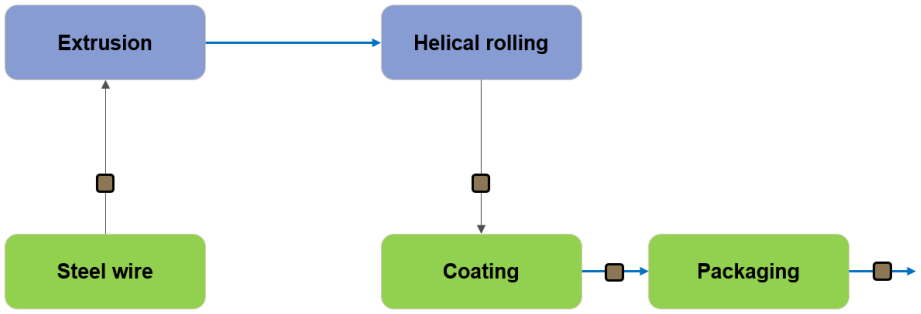
PRODUCT USE AND MAINTENANCE (B1-B7)

Emissions due to installation are excluded as they are considered negligible: a manual hand tool or a handheld cordless power tool is operated for a very short amount of time to complete the installation. The product is embedded within the building structure and therefore undergoes no routine maintenance.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

In a commensurate global average scenario, it is assumed that 85% of the steel within the product is recycled with the remaining 15% dispatched to landfill. Actual recyclability may vary by region.

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.

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	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	

This EPD is product and factory specific.

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'.

- Manufacturing energy use (A3):
  CEER
  https://www.ceer.eu/wp-content/uploads/2024/04/C19-EQS-101-03_Report_on_Power_Losses_3.pdf
- Construction (A4-A5):
  EUROSTAT
  https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519259/default/table?lang=en
- Construction (A4-A5):
  Debunking Efficient Recovery: The Performance of EU Incineration Facilities
  https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf
- End of Life (C1-C4):
  World Steel Organization fact sheet
  https://worldsteel.org/wp-content/uploads/Life-cycle-inventory-LCI-study-2020-data-release.pdf

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

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	5,16E+00	6,60E-02	3,26E-03	5,23E+00	2,02E-01	5,97E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,37E-02	2,31E-02	9,37E-04	-1,59E-01
GWP – fossil	kg CO_2e	5,15E+00	6,60E-02	3,38E-02	5,25E+00	2,02E-01	7,45E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,37E-02	2,31E-02	9,36E-04	-1,59E-01
GWP – biogenic	kg CO_2e	6,79E-03	1,39E-05	-3,15E-02	-2,47E-02	4,17E-05	5,90E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,36E-06	-6,90E-05	-2,98E-07	-7,92E-05
GWP – LULUC	kg CO_2e	5,83E-03	2,48E-05	9,21E-04	6,78E-03	9,29E-05	4,09E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,06E-05	2,72E-05	5,35E-07	7,04E-06
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	3,90E-08	1,33E-09	8,10E-10	4,12E-08	2,83E-09	7,54E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,50E-10	2,48E-10	2,71E-11	-2,75E-10
Acidification potential	mol H^+e	2,81E-02	2,13E-04	1,82E-04	2,85E-02	1,64E-03	3,02E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,07E-05	2,47E-04	6,64E-06	-5,61E-04
EP-freshwater[2)]	kg Pe	1,76E-03	4,45E-06	2,46E-05	1,79E-03	1,40E-05	1,66E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,84E-06	1,25E-05	7,70E-08	-5,00E-05
EP-marine	kg Ne	5,01E-03	7,24E-05	6,26E-05	5,15E-03	4,48E-04	4,94E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,65E-05	5,49E-05	2,53E-06	-8,39E-05
EP-terrestrial	mol Ne	5,32E-02	7,87E-04	4,46E-04	5,44E-02	4,94E-03	9,60E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,89E-04	6,19E-04	2,76E-05	-1,48E-03
POCP ("smog")[3)]	kg NMVOCe	1,69E-02	3,47E-04	1,23E-04	1,74E-02	1,58E-03	3,67E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,19E-04	1,82E-04	9,90E-06	-4,38E-04
ADP-minerals & metals[4)]	kg Sbe	1,27E-04	1,82E-07	3,51E-07	1,28E-04	5,76E-07	4,79E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,61E-08	1,36E-06	1,49E-09	-2,43E-06
ADP-fossil resources	MJ	5,90E+01	9,56E-01	6,29E-01	6,06E+01	2,76E+00	6,80E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,44E-01	2,73E-01	2,30E-02	-1,30E+00
Water use[5)]	m^3e depr.	1,72E+00	4,90E-03	2,11E-02	1,74E+00	1,20E-02	1,88E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,70E-03	4,31E-03	6,63E-05	2,33E-02

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	4,20E-07	6,57E-09	1,27E-09	4,28E-07	1,41E-08	4,05E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,37E-09	3,45E-09	1,51E-10	-1,10E-08
Ionizing radiation[6]	kBq U235e	4,24E-01	1,15E-03	1,09E-02	4,36E-01	2,07E-03	4,44E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,99E-04	9,79E-04	1,44E-05	1,70E-03
Ecotoxicity (freshwater)	CTUe	1,54E+01	1,13E-01	2,43E-01	1,58E+01	3,98E-01	2,47E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,86E-02	1,58E-01	1,93E-03	1,00E+00
Human toxicity, cancer	CTUh	7,18E-09	1,09E-11	1,22E-11	7,21E-09	3,58E-11	5,44E-13	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,91E-12	1,85E-11	1,73E-13	7,71E-11
Human tox. non-cancer	CTUh	1,03E-07	6,21E-10	4,72E-10	1,05E-07	1,55E-09	2,91E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,22E-10	1,18E-09	3,97E-12	1,21E-08
SQP[7]	-	2,63E+01	9,63E-01	8,98E-01	2,82E+01	1,41E+00	5,03E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,46E-01	5,16E-01	4,52E-02	-6,53E-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	1,42E+01	1,56E-02	2,99E-02	1,43E+01	3,51E-02	-3,27E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,71E-03	4,24E-02	2,22E-04	-1,99E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,69E-01	2,69E-01	0,00E+00	-2,69E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,83E-03
Total use of renew. PER	MJ	1,42E+01	1,56E-02	2,99E-01	1,45E+01	3,51E-02	-5,96E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,71E-03	4,24E-02	2,22E-04	-1,96E-01
Non-re. PER as energy	MJ	5,90E+01	9,56E-01	6,24E-01	6,06E+01	2,76E+00	6,80E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,44E-01	2,73E-01	2,30E-02	-1,30E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	8,80E-04	8,80E-04	0,00E+00	-8,80E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,77E-07
Total use of non-re. PER	MJ	5,90E+01	9,56E-01	6,25E-01	6,06E+01	2,76E+00	5,92E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,44E-01	2,73E-01	2,30E-02	-1,30E+00
Secondary materials	kg	5,90E-01	4,14E-04	2,08E-02	6,11E-01	1,25E-03	1,12E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,46E-04	3,16E-04	5,78E-06	1,06E-01
Renew. secondary fuels	MJ	1,43E-03	5,22E-06	1,95E-03	3,39E-03	1,37E-05	6,32E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,86E-06	1,43E-05	1,20E-07	-2,10E-05
Non-ren. secondary fuels	MJ	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
Use of net fresh water	m^3	5,31E-02	1,41E-04	5,71E-04	5,39E-02	3,36E-04	-3,98E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,08E-05	1,19E-04	2,39E-05	-5,13E-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	5,11E+00	1,38E-03	2,20E-03	5,11E+00	4,62E-03	1,17E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,82E-04	2,13E-03	2,54E-05	-9,38E-02
Non-hazardous waste	kg	1,12E+01	2,77E-02	9,57E-02	1,13E+01	8,35E-02	1,33E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-02	5,98E-02	5,80E-04	2,34E+00
Radioactive waste	kg	1,07E-04	2,85E-07	2,80E-06	1,10E-04	5,07E-07	1,13E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,33E-08	2,41E-07	3,52E-09	3,84E-07

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	0,00E+00	0,00E+00	1,00E-02	1,00E-02	0,00E+00	1,70E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,20E-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	3,40E-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	4,80E-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_2e	5,13E+00	6,55E-02	3,51E-02	5,23E+00	2,00E-01	2,87E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,36E-02	2,30E-02	9,28E-04	-1,57E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	3,28E-08	1,06E-09	6,67E-10	3,45E-08	2,26E-09	6,17E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,79E-10	2,06E-10	2,15E-11	-3,08E-10
Acidification	kg SO_2e	2,34E-02	1,62E-04	1,43E-04	2,37E-02	1,29E-03	2,31E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,17E-05	1,99E-04	4,91E-06	-4,46E-04
Eutrophication	kg PO_4^3e	3,29E-03	4,08E-05	4,88E-05	3,38E-03	1,98E-04	3,51E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,50E-05	2,83E-05	1,56E-06	9,25E-05
POCP (“smog”)	kg C_2H_4e	1,46E-03	1,52E-05	1,03E-05	1,49E-03	8,07E-05	6,88E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,50E-06	1,18E-05	4,65E-07	-1,02E-04
ADP-elements	kg Sbe	1,27E-04	1,78E-07	3,52E-07	1,27E-04	5,63E-07	4,69E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,44E-08	1,36E-06	1,46E-09	-2,43E-06
ADP-fossil	MJ	5,20E+01	9,37E-01	4,36E-01	5,34E+01	2,73E+00	6,03E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,39E-01	2,57E-01	2,28E-02	-1,33E+00

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_2e	5,16E+00	6,60E-02	3,48E-02	5,26E+00	2,02E-01	7,45E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,37E-02	2,31E-02	9,37E-04	-1,59E-01

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.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, wind, 1-3MW turbine, onshore, renewable energy products (Reference product: electricity, high voltage, renewable energy products)
Electricity CO2e / kWh	0,0245
District heating data source and quality	
District heating CO2e / kWh	

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type. Eg, electric truck, diesel powered truck	Lorry 16-32 metric to, EURO5; Sea, container ship
Average transport distance, km	825; 3540
Capacity utilization (including empty return) %	100
Bulk density of transported products kg/m3	90
Volume capacity utilization factor	<1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m^3	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0,021
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	0,021
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	1
Collection process – kg collected with mixed waste	0
Recovery process – kg for re-use	0
Recovery process – kg for recycling	0,85
Recovery process – kg for energy recovery	0
Disposal (total) – kg for final deposition	0,15
Scenario assumptions e.g. transportation	Typical distance in Europe: 250km for recycling, 50km for landfilling with lorry >32 metric ton, EURO5

THIRD-PARTY VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub



APPENDIX

PRODUCTS COVERED BY THIS EPD

The following list of products are included in the scope of this declaration, as represented by HIT-Z-R M12x196 (item number 2018433).

Item Number	Product name
2287565	Anchor rod HIT-Z-R M10x160
2149588	Anchor rod HIT-Z-R 3/8" x 3 3/8"
2018456	Anchor rod HIT-Z-R 1/2" x 7 3/4"
2018451	Anchor rod HIT-Z-R 3/8" x 4 3/8"
2094851	Anchor rod HIT-Z-R-D TP M16x205
2094850	Anchor rod HIT-Z-R-D TP M16x175
2287625	Anchor rod HIT-Z-R M8x120
2018439	Anchor rod HIT-Z-R M20x250
2018437	Anchor rod HIT-Z-R M16x240
2018436	Anchor rod HIT-Z-R M16x205
2287624	Anchor rod HIT-Z-R M8x100
2018460	Anchor rod HIT-Z-R 3/4" x 8 1/2"
2149589	Anchor rod HIT-Z-R 3/4" x 6 1/2"
2018435	Anchor rod HIT-Z-R M16x175
2287623	Anchor rod HIT-Z-R M8x80
2018455	Anchor rod HIT-Z-R 1/2" x 6 1/2"
2018458	Anchor rod HIT-Z-R 5/8" x 8"
2094852	Anchor rod HIT-Z-R-D TP M16x240
2018438	Anchor rod HIT-Z-R M20x215
2287626	Anchor rod HIT-Z-R M10x95
2018453	Anchor rod HIT-Z-R 3/8" x 6 3/8"
2018452	Anchor rod HIT-Z-R 3/8" x 5 1/8"
2018430	Anchor rod HIT-Z-R M12x140
2018434	Anchor rod HIT-Z-R M16x155
2018459	Anchor rod HIT-Z-R 5/8" x 9 1/2"
2287628	Anchor rod HIT-Z-R M10x135
2018454	Anchor rod HIT-Z-R 1/2" x 4 1/2"
2018431	Anchor rod HIT-Z-R M12x155
2018461	Anchor rod HIT-Z-R 3/4" x 9 3/4"
2018429	Anchor rod HIT-Z-R M12x105
2287627	Anchor rod HIT-Z-R M10x115
2018457	Anchor rod HIT-Z-R 5/8" x 6"