



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Nails made from CO₂-reduced steel
Hilti AG



EPD HUB, HUB-6935

Published on 09.07.2026, last updated on 09.07.2026, valid until 08.07.2031

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	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	Sister EPD
Parent EPD number	HUB-6692
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Siti Nur Syaza Abdul Rahman, 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	Nails made from CO2-reduced steel
Additional labels	-
Product reference	Refer appendix
Place(s) of raw material origin	Europe
Place of production	Schaan, Liechtenstein
Place(s) of installation and use	Global
Period for data	Calendar year 2025
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+/- 3.82
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	5,13

ENVIRONMENTAL DATA SUMMARY

Declared unit	1kg of Nails made from CO ₂ -reduced steel
Declared unit mass	1 kg
Mass of packaging	0,172 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,23
GWP-total, A1-A3 (kgCO ₂ e)	1,98
Secondary material, inputs (%)	54,3
Total energy use, A1-A3 (kWh)	8,12
Net freshwater use, A1-A3 (m ³)	0

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

Hilti Nails made from CO2-reduced steel are specialized fasteners designed for high-performance anchoring and fastening into steel and concrete, offering excellent durability, corrosion resistance, and compatibility with Hilti's cordless direct fastening tools. They are widely used in construction, mechanical installations, and industrial applications where reliable penetration and holding power are critical.

Product Applications

- Construction: Fastening steel plates, brackets, and profiles to structural steel.
- Electrical & Mechanical Installations: Securing conduits, cable trays, and HVAC components.
- Industrial Use: Anchoring lightweight machinery, equipment housing, and protective covers.
- Interior Fit-Outs: Fixing drywall tracks, ceiling grids, and partition systems to steel substrates.

Technical Characteristics

- Base Materials: Steel (minimum thickness 2.5 mm/0.1 inch (Micky nails) up to ~9 mm/0.35 inch (threaded studs with M10 or W10)
- Corrosion Protection: Galvanized zinc coating (<20 µm) for durability
- Shank Lengths: minimum 14 mm/0.55 inch (X-S 14 nails) up to max 117 mm/4.6 inch (X-C P8 nail)
- Environmental Conditions: Designed for dry indoor use; specialized variants available for harsher environments.
- Tool Compatibility: Hilti BX, GX or DX tools and/or R4DW-X air nailer.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	96,1	Europe
Minerals	-	-
Fossil materials	3,9	Europe
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	0,0689

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1kg of Nails made from CO ₂ -reduced steel
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	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	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 nails made from CO₂-reduced steel portfolio comprise a range of specialized fasteners designed for high-performance fastening into steel and concrete substrates. Each unit consists of a galvanized low-carbon steel body. Most of the items contain a washer or strip made of PP or HDPE. The steel and plastic are sourced from suppliers located near the manufacturing plant in Liechtenstein, where production processes and final assembly takes place. A conservative recycled content of 58% is assumed for the steel, although actual values may vary between 50% and 90% depending on sourcing conditions. The manufacturing process involves electricity consumption for cold forming, rolling/thermopulling, plating, tempering, and assembly operations. Total annual energy consumption for the production facility has been allocated per declared unit, with non-production consumption excluded. Packaging materials consist primarily of cardboard, which is used to secure the assembled connectors for transport to designated market locations. It is assumed that no energy or material losses occur during the manufacturing and construction phases. Ancillary materials are accounted for as part of the manufacturing waste and are excluded from the end-of-life stage assessment.

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.

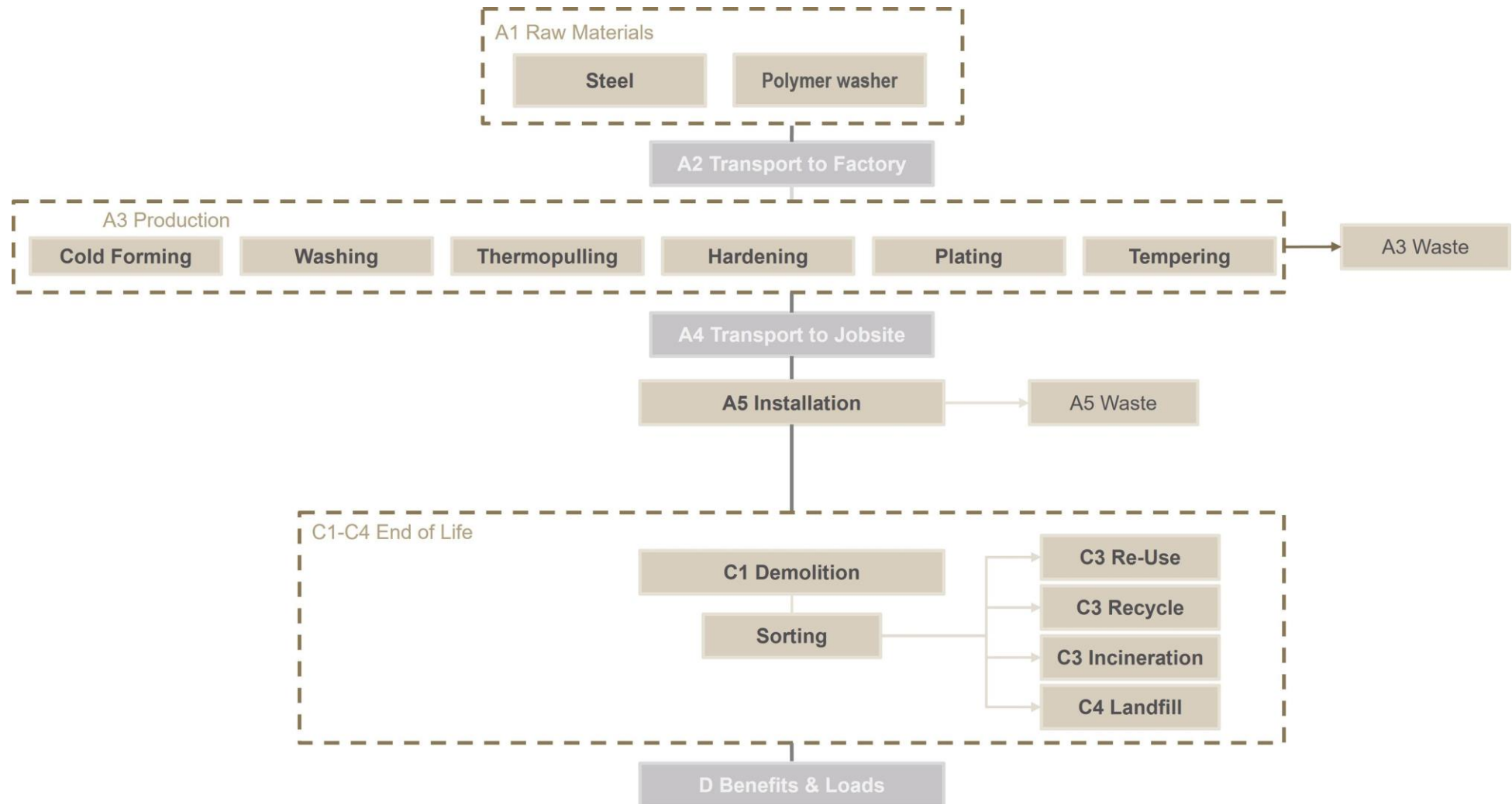
Transportation distance is defined according to the PCR. A4 is based on a sales-weighted average transport distance from the production plant in Liechtenstein, estimated to be about 500km by truck, followed by shipment

to the representative place of installation in the sales region (equating to 967km by truck and 5565km by container ship for this product due to its global distribution). Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as products are packaged properly. Also, volume capacity utilization factor is assumed to be 1 for the nested packaged products. 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 energy use is estimated to be the same as in installation. 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 (C2). 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 steel is 85% and the recycling rate of HDPE is 24% with 49% incinerated with energy recovery in the calculation is based on world average data published by World Steel Association and Plastic Europe. Actual recyclability may vary between regions.

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.

This LCA study includes the provision of all materials, transportation, 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. These include materials which are used in the product manufacturing only in very small amounts 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	Physical Properties
Packaging material	No allocation
Ancillary materials	Not applicable
Manufacturing energy and waste	Physical Properties

All estimations and assumptions regarding the cut-off criteria and the allocation data are declared in the part Cut-off Criteria except the estimations/assumptions below: 1) 2) Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission 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.

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on average results of product group - by total mass
Variation in GWP-fossil for A1-A3, %	+/- 3.82

The declared unit of 1 kg of nails made from CO₂-reduced steel represents the weighted average of the product group, calculated by total mass. Data has been consolidated from Hilti manufacturing facilities located in Liechtenstein, ensuring representativeness of the grouping in accordance with EN 15804+A2 and PCR requirements. The product group covers the full portfolio of carbon steel nails made from CO₂-reduced steel. Some of these

items also contain a washer/strip made of HDPE or PP. The facilities were selected as representative sites based on production share and geographical coverage, thereby ensuring that the results reflect the typical performance of the product group.

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	1,96E+00	9,57E-02	-7,62E-02	1,98E+00	1,89E-01	2,59E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,21E-02	7,90E-02	2,19E-03	-4,84E-01
GWP – fossil	kg CO ₂ e	1,96E+00	9,56E-02	1,71E-01	2,23E+00	1,89E-01	6,22E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,20E-02	7,90E-02	2,19E-03	-4,83E-01
GWP – biogenic	kg CO ₂ e	2,21E-03	1,88E-05	-2,53E-01	-2,51E-01	3,80E-05	2,53E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,18E-06	-4,04E-05	-9,71E-07	-4,35E-04
GWP – LULUC	kg CO ₂ e	1,48E-03	3,41E-05	5,20E-03	6,71E-03	9,07E-05	3,40E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,86E-05	2,39E-05	5,80E-07	-7,53E-04
Ozone depletion pot.	kg CFC-11e	1,38E-08	1,89E-09	4,23E-09	1,99E-08	2,76E-09	6,27E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,88E-10	2,61E-10	2,85E-11	-2,66E-09
Acidification potential	mol H ⁺ e	1,91E-02	3,00E-04	8,56E-04	2,02E-02	2,38E-03	2,51E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,40E-04	2,30E-04	7,07E-06	-2,34E-03
EP-freshwater ²⁾	kg Pe	7,67E-04	6,38E-06	9,42E-05	8,68E-04	1,16E-05	1,38E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,27E-06	1,22E-05	8,48E-08	-2,30E-04
EP-marine	kg Ne	2,23E-03	1,01E-04	3,32E-04	2,66E-03	6,25E-04	3,95E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,54E-05	5,40E-05	5,27E-06	-4,38E-04
EP-terrestrial	mol Ne	6,65E-02	1,10E-03	2,23E-03	6,98E-02	6,91E-03	7,95E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,94E-04	5,98E-04	2,94E-05	-4,77E-03
POCP (“smog”) ³⁾	kg NMVOCe	6,55E-03	4,69E-04	5,97E-04	7,62E-03	2,08E-03	3,02E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,95E-04	1,75E-04	1,08E-05	-1,68E-03
ADP-minerals & metals ⁴⁾	kg Sbe	4,38E-05	3,11E-07	1,10E-06	4,52E-05	4,05E-07	4,02E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,38E-07	1,32E-06	1,67E-09	-3,00E-05
ADP-fossil resources	MJ	2,23E+01	1,34E+00	2,59E+00	2,62E+01	2,59E+00	5,66E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,90E-01	2,59E-01	2,42E-02	-5,07E+00
Water use ⁵⁾	m ³ e depr.	7,94E-01	6,60E-03	1,07E-01	9,07E-01	1,10E-02	1,56E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,74E-03	6,05E-03	7,53E-05	-1,40E-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	2,79E-07	7,59E-09	1,47E-08	3,02E-07	1,42E-08	3,36E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,35E-09	3,07E-09	1,61E-10	-3,05E-08
Ionizing radiation ⁶⁾	kBq CTUe	7,25E-02	1,70E-03	2,70E-02	1,01E-01	1,91E-03	3,72E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,78E-04	2,16E-03	1,62E-05	6,95E-03
Ecotoxicity (freshwater)	CTUe	2,15E+01	1,77E-01	1,41E+00	2,31E+01	3,11E-01	1,97E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,31E-02	1,61E-01	5,87E-03	-8,22E+00
Human toxicity, cancer	CTUh	3,14E-09	1,63E-11	7,27E-11	3,23E-09	3,43E-11	4,51E-12	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,14E-12	1,90E-11	2,25E-13	-2,62E-10
Human tox. non-cancer	CTUh	6,78E-08	8,45E-10	2,06E-09	7,07E-08	1,34E-09	2,38E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,69E-10	1,22E-09	1,64E-11	-8,30E-09
SQP ⁷⁾	-	5,84E+00	8,20E-01	6,70E+00	1,34E+01	1,85E+00	4,16E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,56E-01	4,94E-01	4,86E-02	-1,53E+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	1,76E+00	2,31E-02	2,87E+00	4,65E+00	3,05E-02	-2,73E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,09E-03	4,71E-02	2,50E-04	-5,78E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,48E+00	2,48E+00	0,00E+00	-2,48E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,70E-03
Total use of renew. PER	MJ	1,76E+00	2,31E-02	5,35E+00	7,13E+00	3,05E-02	-5,21E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,09E-03	4,71E-02	2,50E-04	-5,75E-01
Non-re. PER as energy	MJ	2,06E+01	1,34E+00	2,59E+00	2,46E+01	2,59E+00	5,66E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,90E-01	-8,84E-01	-4,07E-01	-5,07E+00
Non-re. PER as material	MJ	1,66E+00	0,00E+00	3,24E-02	1,69E+00	0,00E+00	-3,24E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,21E+00	-4,47E-01	4,00E-01
Total use of non-re. PER	MJ	2,23E+01	1,34E+00	2,62E+00	2,62E+01	2,59E+00	2,42E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,90E-01	-2,09E+00	-8,54E-01	-4,67E+00
Secondary materials	kg	5,43E-01	6,14E-04	1,32E-01	6,76E-01	1,14E-03	9,37E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,65E-04	3,43E-04	6,38E-06	2,54E-01
Renew. secondary fuels	MJ	1,90E-04	7,76E-06	2,29E-02	2,31E-02	1,04E-05	5,28E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,37E-06	1,44E-05	1,30E-07	-3,39E-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	m ³	-9,31E-04	1,82E-04	2,61E-03	1,86E-03	3,17E-04	-3,00E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,83E-05	1,46E-04	-1,84E-05	-2,67E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	6,20E-01	1,94E-03	1,39E-02	6,35E-01	4,08E-03	9,69E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,03E-03	2,21E-03	2,85E-05	-1,40E-01
Non-hazardous waste	kg	1,31E+01	4,08E-02	3,67E-01	1,35E+01	7,01E-02	1,06E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,93E-02	8,19E-02	5,52E-02	-1,30E+00
Radioactive waste	kg	1,79E-05	4,21E-07	6,90E-06	2,53E-05	4,67E-07	9,47E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,17E-07	5,52E-07	3,95E-09	1,80E-06

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	0,00E+00	0,00E+00	0,00E+00	1,43E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,29E-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	6,80E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,10E-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	2,80E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,30E-01	0,00E+00	0,00E+00
Exported energy –	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	1,80E-01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	1,95E+00	9,50E-02	1,79E-01	2,22E+00	1,88E-01	2,31E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,18E-02	7,89E-02	2,13E-03	-4,80E-01
Ozone depletion Pot.	kg CFC ₁₁ e	1,19E-08	1,50E-09	3,46E-09	1,69E-08	2,20E-09	5,13E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,70E-10	2,15E-10	2,26E-11	-2,59E-09
Acidification	kg SO ₂ e	1,25E-02	2,28E-04	6,54E-04	1,34E-02	1,89E-03	1,91E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,07E-04	1,84E-04	5,24E-06	-1,93E-03
Eutrophication	kg PO ₄ ³ e	4,79E-03	5,79E-05	3,19E-04	5,16E-03	2,49E-04	2,80E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,61E-05	2,79E-05	1,88E-06	-7,44E-04
POCP ("smog")	kg C ₂ H ₄ e	7,12E-04	2,17E-05	5,85E-05	7,92E-04	1,06E-04	5,55E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,61E-06	1,10E-05	6,77E-07	-2,45E-04
ADP-elements	kg Sbe	4,35E-05	3,04E-07	1,09E-06	4,49E-05	3,96E-07	3,94E-08	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,34E-07	1,32E-06	1,63E-09	-3,00E-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	2,12E+01	1,32E+00	2,09E+00	2,46E+01	2,56E+00	5,02E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,82E-01	2,22E-01	2,39E-02	-5,22E+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	1,96E+00	9,57E-02	1,77E-01	2,23E+00	1,89E-01	6,22E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,20E-02	7,90E-02	2,19E-03	-4,83E-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

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity production, wind, 1-3MW turbine, onshore, Austria, Ecoinvent, 0.0187 kgCO₂e/kWh
2. Electricity production, wind, 1-3MW turbine, onshore, Austria, Ecoinvent, 0.0187 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO5, 967 km
2. Market for transport, freight, sea, container ship, 5565.0 km

Transport to the building site (A4) - Scenario documentation

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

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	Negligible (handheld tools)
Water use (m ³)	None.
Ancillary materials: type and mass (kg)	None.
Waste materials: type and mass (kg)	Cardboard packaging, 0.17
Waste materials: output routes	Municipal waste.
Direct emissions (kg)	None.

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)	0,83
Recovery: energy recovery (kg)	0
Disposal (kg)	0
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 09.07.2026



APPENDIX

PRODUCT PORTFOLIO INCLUDED IN SCOPE

The following products are included in the scope of this declaration, as represented by averaging the nails made from CO2-reduced steel portfolio.

Item number	Item designation	Weight [g]
2300016	Concrete nail X-X 27 MX	3.2
2300018	Concrete nail X-X 34 MX	4.1
2300019	Concrete nail X-X 40 MX	4.5
2300020	Concrete nail X-X 47 MX	5.2
2300021	Concrete nail X-X 52 MX	5.8
2300022	Concrete nail X-X 57 MX	6.2
2300023	Concrete nail X-X 62 MX	6.8
2300024	Concrete nail X-X 72 MX	7.8
2312327	Concrete nail X-X 22 MX	2.66
2300007	Concrete nail X-X 27 P8	3.02
2300009	Concrete nail X-X 34 P8	3.92
2300010	Concrete nail X-X 40 P8	4.32

2300011	Concrete nail X-X 47 P8	5.02
2300012	Concrete nail X-X 52 P8	5.62
2300013	Concrete nail X-X 57 P8	6.02
2300014	Concrete nail X-X 62 P8	6.62
2300015	Concrete nail X-X 72 P8	7.62
2312326	Concrete nail X-X 22 P8	2.48
40514	Kwik nail X-DKH 48 P8 S15	7.57
368222	Universal nail X-U 37 PH	7.41
2042971	X-HSN24 Barjoist Nails	3.91
2361536	Steel nail X-S 14 B4 MX	1.16
2361650	Steel nail X-S 14 B4 MX bulk	1.16
2412772	Steel nail X-S 14 B4 MX	1.16
Item number	Item designation	Weight [g]
2412773	Steel nail X-S 14 B4 MX bulk	1.16
2361537	High performance nail X-P 17 B4 MX	1.21
2361538	High performance nail X-P 20 B4 MX	1.43
2361539	High performance nail X-P 24 B4 MX	1.66
2361651	High performance nail X-P 17 B4 MX bulk	1.21
2361652	High performance nail X-P 20 B4 MX bulk	1.43
2361653	High performance nail X-P 24 B4 MX bulk	1.66
2412761	High performance nail X-P 17 B4 MX	1.21
2412762	High performance nail X-P 17 B4 MX bulk	1.21
2412764	High performance nail X-P 20 B4 MX	1.43
2412765	High performance nail X-P 20 B4 MX bulk	1.43
2412767	High performance nail X-P 24 B4 MX	1.66
2412768	High performance nail X-P 24 B4 MX bulk	1.66
340231	Gas nail X-EGN 14 MX	1.16
2048048	Gas nail X-EGN 14 MX	1.16
2063784	Gas nail X-EGN 14 MX (800)	1.16
2063789	Gas nail X-EGN 14 MX Bulk	1.16
285724	Gas nail X-GHP 20 MX	1.43
340228	Gas nail X-GHP 18 MX	1.21

438945	Gas nail X-GHP 24 MX	1.66
2024941	Gas nail X-GHP 20 MX	1.43
2064010	Gas nail X-GHP 16 MX BULK	1.21
2064011	Gas nail X-GHP 18 MX BULK	1.21
2064012	Gas nail X-GHP 20 MX BULK	1.43
2064013	Gas nail X-GHP 24 MX BULK	1.66
237344	Universal nail X-U 16 MX	2.24
237345	Universal nail X-U 19 MX	2.63
237346	Universal nail X-U 22 MX	2.93
237347	Universal nail X-U 27 MX	3.42
237348	Universal nail X-U 32 MX	3.87
237349	Universal nail X-U 37 MX	4.36
Item number	Item designation	Weight [g]
237350	Universal nail X-U 42 MX	4.91
237351	Universal nail X-U 47 MX	5.39
237352	Universal nail X-U 52 MX	5.96
237353	Universal nail X-U 57 MX	6.4
237354	Universal nail X-U 62 MX	6.21
237356	Universal nail X-U 72 MX	7.95
2429835	Universal nail X-U 40 MX	5.18
2429981	Universal nail X-U 34 MX	4.66
237357	Universal nail X-U 16 S12	2.74
237358	Universal nail X-U 19 S12	3.14
237359	Universal nail X-U 22 S12	3.44
237360	Universal nail X-U 27 S12	3.92
237361	Universal nail X-U 32 S12	4.38
237370	Universal nail X-U 22 P8 S15	5.19
237371	Universal nail X-U 27 P8 S15	5.67
237372	Universal nail X-U 32 P8 S15	6.13
237374	Universal nail X-U 32 P8 S36	12.26
237376	Universal nail X-U 52 P8 S36	14.35
237379	Universal nail X-U 72 P8 S36	16.34

2023960	Universal nail X-U 52 P8 S36	14.35
2289584	Universal nail X-U 32 P8 S36	12.26
2289586	Universal nail X-U 52 P8 S36	14.35
2156392	Steel nail X-S 14 B3 MX	1.15
2156393	Steel nail X-S 14 B3 MX BULK	1.15
2156216	High performance nail X-P 17 B3 MX	1.2
2156217	High performance nail X-P 20 B3 MX	1.42
2156218	High performance nail X-P 24 B3 MX	1.65
2156219	High performance nail X-P 17 B3 MX BULK	1.2
2156390	High performance nail X-P 20 B3 MX BULK	1.42
2156391	High performance nail X-P 24 B3 MX BULK	1.65
Item number	Item designation	Weight [g]
2101046	Gas nail X-P 17 G3 MX	1.31
2101047	Gas nail X-P 20 G3 MX	1.43
2101048	Gas nail X-P 24 G3 MX	1.65
2111280	Gas nail X-P 17 G3 MX	1.31
2111281	Gas nail X-P 20 G3 MX	1.43
342000	Universal nail X-U 15 MX SP (1000)	1.88
383466	Universal nail X-U 15 MX SP	1.88
2051220	Universal nail X-U 20 MX SP	2.73
237328	Universal nail X-U 15 P8 TH	2.16
342215	Universal nail X-U 15 P8 TH (1000)	2.16
237329	Universal nail X-U 16 P8 TH	2.7
237330	Universal nail X-U 16 P8	2.06
237331	Universal nail X-U 19 P8	2.46
237332	Universal nail X-U 22 P8	2.76
237333	Universal nail X-U 27 P8	3.25
237334	Universal nail X-U 32 P8	3.7
237335	Universal nail X-U 37 P8	4.19
237336	Universal nail X-U 42 P8	4.74
237337	Universal nail X-U 47 P8	5.22

237338	Universal nail X-U 52 P8	5.79
237339	Universal nail X-U 57 P8	6.23
237340	Universal nail X-U 62 P8	6.04
237342	Universal nail X-U 72 P8	7.78
385781	Universal nail X-U 19 P8 TH	3.1
385782	Universal nail X-U 27 P8 TH	3.89
2141083	Universal nail X-U 16 P8	2.06
2141084	Universal nail X-U 19 P8	2.46
2141085	Universal nail X-U 22 P8	2.76
2141086	Universal nail X-U 27 P8	3.25
2141087	Universal nail X-U 32 P8	3.7
2141088	Universal nail X-U 37 P8	4.19
Item number	Item designation	Weight [g]
2141089	Universal nail X-U 42 P8	4.74
2141180	Universal nail X-U 47 P8	5.22
2141181	Universal nail X-U 52 P8	5.79
2141182	Universal nail X-U 57 P8	6.23
2141183	Universal nail X-U 62 P8	6.04
2141184	Universal nail X-U 72 P8	7.78
2429822	Universal nail X-U 34 P8	4.49
2429834	Universal nail X-U 40 P8	5.01
2438817	Universal nail X-U 16 P8	2.06
2101547	Gas nail X-S 14 G3 MX	1.15
2110989	Gas nail X-S 14 G3 MX	1.15