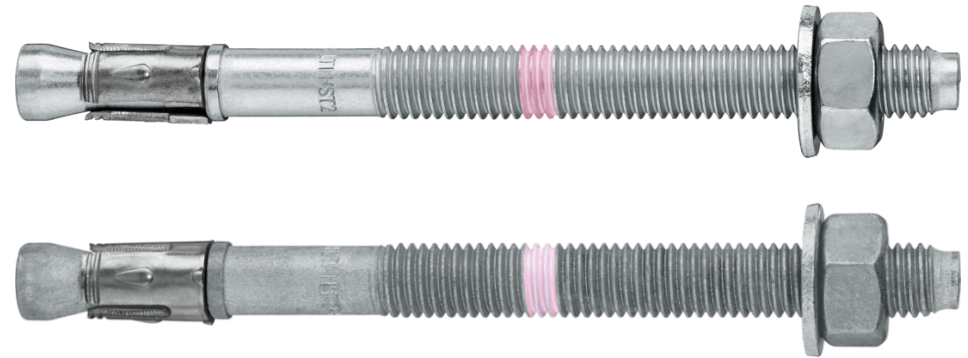


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Stud Anchor HST2 V3 / HST2-F V3

Hilti AG



EPD HUB, HUB-2238

Published on 15.11.2024, last updated on 15.11.2024, valid until 15.11.2029



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Hilti AG
Address	Feldkircherstrasse 100, 9494 Schaan, Principality of 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+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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD Author	Marielle Rhomberg, Hilti AG
EPD Verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD Verifier	Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited

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	Stud Anchor HST2 V3 / HST2-F V3
Additional Labels	See appendix
Product Reference	2345250
Place of Production	Zhanjiang, China
Period for Data	2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	Calculated from all diameters and lengths (%)

ENVIRONMENTAL DATA SUMMARY

Declared Unit	1
Declared Unit Mass	1 kg
GWP-fossil, A1-A3 (kgCO₂e)	3,32E+00
GWP-total, A1-A3 (kgCO₂e)	3,15E+00
Secondary Material, Inputs (%)	25.1
Secondary Material, Outputs (%)	0
Total Energy Use, A1-A3 (kWh)	19
Net Freshwater Use, A1-A3 (m³)	0.04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The Hilti Group supplies the worldwide construction and energy industries with technologically leading products, systems, software and services. With about 34,000 team members in over 120 countries the company stands for direct customer relationships, quality and innovation. Hilti generated annual sales of more than CHF 6.5 billion in 2023. 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

HST2 V3 is a performance concrete wedge expansion anchor used to resist static and seismic structural loads in the construction industry (residential, industrial, infrastructure, etc.). The HST2(-F) V3 carbon steel are variants of the HST2 V3 family is described further in this report. For the placing of the product on the market in the European Union European Free Trade Association EU/EFTA (with the exception of Switzerland) Regulation (EU) No. 305/2011 (CPR) applies. The product needs a declaration of performance taking into consideration the following European Technical Approval ETA-21/0480 assessed based on EAD 330232-01-0601 Mechanical fasteners for use in concrete. For the application and use the respective national provisions apply. The Hilti HST2(-F) V3 anchor is a torque-controlled expansion anchor made of carbon steel which is installed into a drilled hole and anchored by torque-controlled expansion.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	China
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	0.0501

FUNCTIONAL UNIT AND SERVICE LIFE

Declared Unit	1 kg
Mass per declared unit VP-012	1 kg
Functional Unit	1 kg galvanized stud anchor
Reference Service Life	50

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. The anchor is made of galvanized carbon steel, with a small stainless-steel sleeve. The carbon steel (BOF) bolt wire is produced in China and transported to the Hilti manufacturing site in Zhanjiang, China by

lorry. The stainless steel (EAF) for the sleeve is also produced in China, where it is stamped and transported to the plant by lorry. Similarly, the galvanized carbon steel (BOF) nut and washer are produced and transported in China. At Hilti's manufacturing site in Zhanjiang, China, the bolt wire is headed, thread-rolled, zinc-plated, and coated. The sleeve is supplied. The nut is zinc plated and coated at the manufacturing site. The washer undergoes zinc plating externally. Following this, all components are assembled and packaged automatically within the Zhanjiang facility. Faulty parts and steel waste from production are recycled at a rate of 100%, considered in module A3, while negligible packaging waste is not considered. Electricity, fully sourced from certified renewable wind energy, powers each stage of production. Compressed air is primarily used for pneumatic drives in cold forming and assembly. Minor auxiliary materials, such as lubricants and cleaning agents, are also negligible. For distribution to customers through Hilti logistics centers, the anchors are packed in cardboard sales and export boxes and shipped on wooden pallets.

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. From the logistics center in Guangzhou, China, anchors are shipped in containers to HILTI distribution centers worldwide, following a route of lorry–sea freight–lorry. The distances provided are weighted averages based on 2023 sales data. Transportation has a minimal impact on final results. At installation, packaging waste is limited to cardboard and pallets. It is assumed that 100% of the cardboard is recycled. Of the wooden pallets, 70% are incinerated with energy recovery, while 30% are recycled. Waste treatment distances are assumed to average 50 km. Energy used during anchor installation is considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

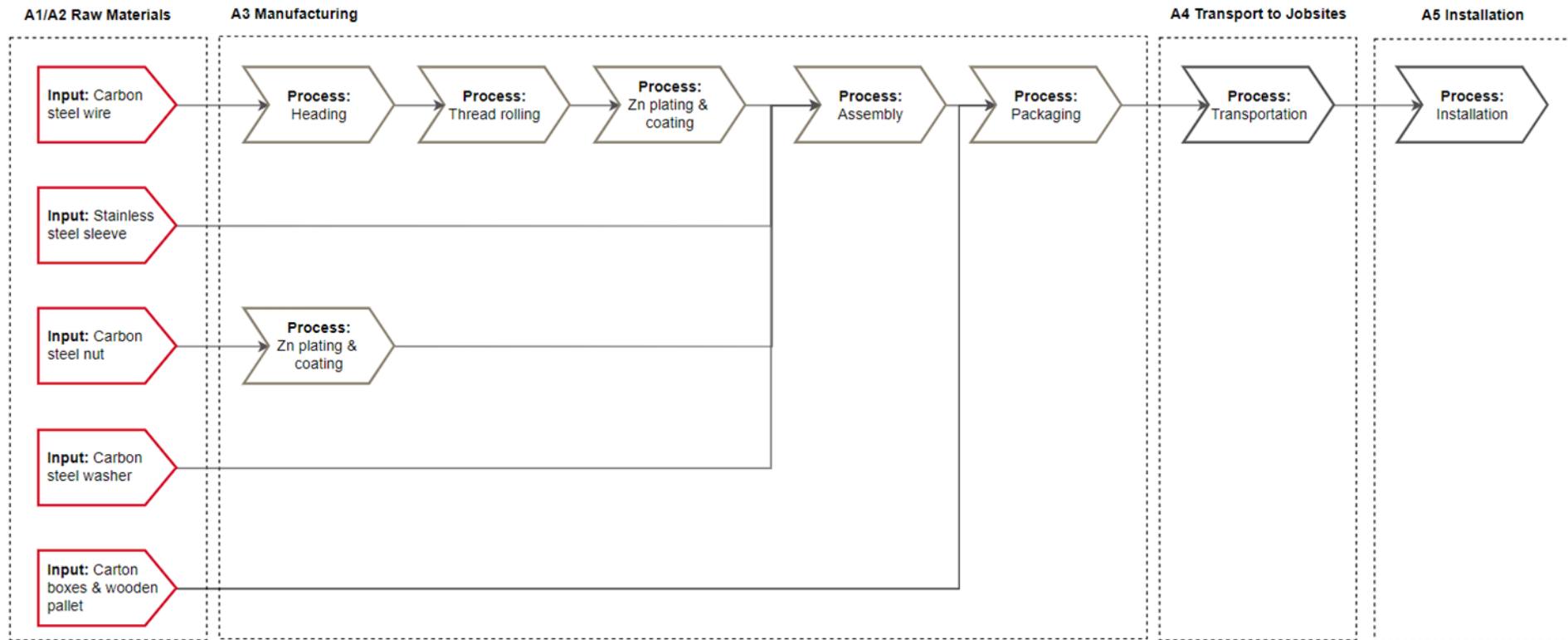
No emissions during lifecycle.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At the end of its lifecycle, the product will be dismantled along with the building and separated using magnets. Based on studies from worldsteel.org, an 85% recycling rate is assumed, with the remaining 15% expected to be landfilled. Waste treatment distances are generally assumed to be 50 km. Energy consumption for demolition is considered negligible. Module D includes benefits from recycling the product and packaging materials.

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.

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

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	Calculated from all diameters and lengths (%)

The averaging of products is calculated based on a mid size product which is also the bestselling one, the smallest and the biggest version. All products are identical except length and diameter

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 v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	2,99E+00	6,94E-02	9,30E-02	3,15E+00	2,23E-01	1,87E-01	MND	MND	MND	MND	MND	MND	MND	MNR	8,69E-03	1,86E-02	7,91E-04	-6,09E-01
GWP – fossil	kg CO ₂ e	2,98E+00	6,94E-02	2,75E-01	3,32E+00	2,22E-01	4,15E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,68E-03	1,86E-02	7,90E-04	-6,10E-01
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-1,83E-01	-1,83E-01	0,00E+00	1,83E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO ₂ e	8,85E-03	2,56E-05	7,90E-04	9,67E-03	1,35E-04	5,18E-06	MND	MND	MND	MND	MND	MND	MND	MNR	3,54E-06	2,44E-05	7,46E-07	6,42E-04
Ozone depletion pot.	kg CFC-11e	1,45E-07	1,60E-08	2,16E-08	1,83E-07	4,60E-08	4,36E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,91E-09	2,30E-09	3,20E-10	-1,73E-08
Acidification potential	mol H ⁺ e	1,75E-02	2,94E-04	1,66E-03	1,94E-02	4,83E-03	2,58E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,59E-05	2,36E-04	7,43E-06	-2,47E-03
EP-freshwater ²⁾	kg Pe	1,66E-04	5,68E-07	1,39E-05	1,80E-04	1,21E-06	5,70E-08	MND	MND	MND	MND	MND	MND	MND	MNR	7,32E-08	9,98E-07	8,28E-09	-6,36E-06
EP-marine	kg Ne	2,69E-03	8,73E-05	3,84E-04	3,17E-03	1,20E-03	9,58E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,05E-05	4,99E-05	2,57E-06	-6,51E-05
EP-terrestrial	mol Ne	4,86E-02	9,63E-04	3,62E-03	5,32E-02	1,34E-02	1,10E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,16E-04	5,77E-04	2,83E-05	-6,50E-03
POCP (“smog”) ³⁾	kg NMVOCe	1,18E-02	3,08E-04	1,18E-03	1,33E-02	3,51E-03	2,96E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,52E-05	1,59E-04	8,23E-06	-3,40E-03
ADP-minerals & metals ⁴⁾	kg Sbe	5,88E-05	1,63E-07	8,62E-06	6,75E-05	4,85E-07	3,00E-08	MND	MND	MND	MND	MND	MND	MND	MNR	3,02E-08	2,51E-06	1,82E-09	-1,80E-05
ADP-fossil resources	MJ	3,07E+01	1,04E+00	3,69E+00	3,54E+01	2,95E+00	3,77E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,26E-01	2,52E-01	2,17E-02	-5,10E+00
Water use ⁵⁾	m ³ e depr.	1,43E+00	4,66E-03	1,44E-01	1,58E+00	1,05E-02	1,57E-03	MND	MND	MND	MND	MND	MND	MND	MNR	5,50E-04	4,89E-03	6,87E-05	2,23E-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.

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	3,69E+00	1,17E-02	2,94E+01	3,31E+01	2,62E-02	3,69E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,47E-03	4,47E-02	1,88E-04	-1,14E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,58E+00	1,58E+00	0,00E+00	-1,58E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	9,55E-01
Total use of renew. PER	MJ	3,69E+00	1,17E-02	3,09E+01	3,47E+01	2,62E-02	-1,58E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1,47E-03	4,47E-02	1,88E-04	-1,87E-01
Non-re. PER as energy	MJ	3,07E+01	1,04E+00	3,61E+00	3,53E+01	2,95E+00	3,77E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,26E-01	2,52E-01	2,17E-02	-5,10E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	7,96E-02	7,96E-02	0,00E+00	-7,96E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	1,37E-02
Total use of non-re. PER	MJ	3,07E+01	1,04E+00	3,69E+00	3,54E+01	2,95E+00	-4,19E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,26E-01	2,52E-01	2,17E-02	-5,08E+00
Secondary materials	kg	2,51E-01	2,89E-04	4,73E-02	2,98E-01	1,19E-03	5,68E-05	MND	MND	MND	MND	MND	MND	MND	MNR	4,14E-05	2,81E-04	4,55E-06	3,97E-01
Renew. secondary fuels	MJ	4,59E-04	2,92E-06	3,10E-02	3,14E-02	7,35E-06	3,01E-07	MND	MND	MND	MND	MND	MND	MND	MNR	5,36E-07	1,46E-05	1,19E-07	7,62E-04
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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	3,33E-02	1,35E-04	3,38E-03	3,68E-02	2,55E-04	3,62E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,48E-05	1,48E-04	2,37E-05	-1,62E-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	1,38E+00	1,38E-03	4,80E-02	1,43E+00	4,13E-03	2,09E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,81E-04	1,71E-03	0,00E+00	-3,60E-01
Non-hazardous waste	kg	5,27E+00	2,27E-02	5,04E-01	5,79E+00	4,74E-02	4,49E-02	MND	MND	MND	MND	MND	MND	MND	MNR	2,89E-03	5,47E-02	1,50E-01	-1,26E+00
Radioactive waste	kg	6,74E-05	6,97E-06	1,19E-05	8,63E-05	2,03E-05	2,08E-07	MND	MND	MND	MND	MND	MND	MND	MNR	8,30E-07	1,48E-06	0,00E+00	4,05E-09

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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	3,49E-03	3,49E-03	0,00E+00	8,05E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	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	MNR	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	4,58E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

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	2,89E+00	6,86E-02	2,71E-01	3,23E+00	2,21E-01	4,12E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,59E-03	1,83E-02	7,74E-04	-5,67E-01
Ozone depletion Pot.	kg CFC ₁₁ e	1,41E-07	1,26E-08	1,86E-08	1,73E-07	3,64E-08	3,54E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,52E-09	1,86E-09	2,53E-10	-2,41E-08
Acidification	kg SO ₂ e	1,30E-02	2,28E-04	1,35E-03	1,45E-02	3,85E-03	1,87E-05	MND	MND	MND	MND	MND	MND	MND	MNR	2,80E-05	1,91E-04	5,61E-06	-1,95E-03
Eutrophication	kg PO ₄ ³ e	6,23E-03	5,20E-05	7,12E-04	6,99E-03	4,61E-04	1,56E-05	MND	MND	MND	MND	MND	MND	MND	MNR	6,42E-06	6,30E-05	1,21E-06	-9,69E-04
POCP (“smog”)	kg C ₂ H ₄ e	1,19E-03	8,91E-06	9,43E-05	1,29E-03	1,03E-04	8,29E-07	MND	MND	MND	MND	MND	MND	MND	MNR	1,14E-06	7,22E-06	2,35E-07	-4,39E-04
ADP-elements	kg Sbe	5,83E-05	1,58E-07	8,48E-06	6,69E-05	4,75E-07	2,93E-08	MND	MND	MND	MND	MND	MND	MND	MNR	2,95E-08	2,50E-06	1,79E-09	-1,79E-05
ADP-fossil	MJ	3,06E+01	1,04E+00	3,67E+00	3,54E+01	2,95E+00	3,77E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,26E-01	2,52E-01	2,17E-02	-5,09E+00

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 acting for EPD Hub Limited
15.11.2024



PORTFOLIO INCLUDED

The results above apply to the following items in the HST2-R V3 portfolio:

Material	Designation	Diameter	Length	Gross Weight [kg]
2407042	HST2 V3 M8x55 5	M08	55	0.02498
2345233	HST2 V3 M8x70 5-20	M08	70	0.03018
2345272	HST2 V3 M8x70 5-20 BW	M08	70	0.03489
2345234	HST2 V3 M8x80 5-30	M08	80	0.03347
2345235	HST2 V3 M8x90 5-40	M08	90	0.03701
2345236	HST2 V3 M8x100 5-50	M08	100	0.04102
2345237	HST2 V3 M8x110 5-60	M08	110	0.04431
2345238	HST2 V3 M8x130 5-80	M08	130	0.05089
2345239	HST2 V3 M10x70 5	M10	70	0.05203
2345273	HST2 V3 M10x70 5 BW	M10	70	0.06310
2345250	HST2 V3 M10x90 5-25	M10	90	0.05980
2345274	HST2 V3 M10x90 5-25 BW	M10	90	0.07087
2345251	HST2 V3 M10x100 5-35	M10	100	0.06547
2345252	HST2 V3 M10x110 5-45	M10	110	0.07324
2345253	HST2 V3 M10x130 5-65	M10	130	0.08507
2345254	HST2 V3 M10x150 5-85	M10	150	0.09543
2345255	HST2 V3 M10x170 5-105	M10	170	0.10320
2345257	HST2 V3 M12x105 5-25	M12	105	0.10079
2345275	HST2 V3 M12x105 5-25 BW	M12	105	0.11849
2345258	HST2 V3 M12x115 5-35	M12	115	0.10829
2345276	HST2 V3 M12x115 5-35 BW	M12	115	0.12599
2345259	HST2 V3 M12x125 5-45	M12	125	0.11579

2345260	HST2 V3 M12x145 5-65	M12	145	0.13079
2345261	HST2 V3 M12x175 5-95	M12	175	0.15408
2345262	HST2 V3 M12x205 5-125	M12	205	0.17658
2345263	HST2 V3 M12x225 5-145	M12	225	0.19499
2345270	HST2 V3 M16x230 5-130	M16	230	0.34639
2345313	HST2-F V3 M8x55 5	M08	55	0.03032
2345314	HST2-F V3 M8x70 5-20	M08	70	0.03361
2345315	HST2-F V3 M8x90 5-40	M08	90	0.03714
2345316	HST2-F V3 M8x100 5-50	M08	100	0.04116
2345318	HST2-F V3 M8x130 5-80	M08	130	0.05103
2345319	HST2-F V3 M10x70 5	M10	70	0.05231
2345320	HST2-F V3 M10x90 5-25	M10	90	0.06008
2345321	HST2-F V3 M10x100 5-35	M10	100	0.06575
2345322	HST2-F V3 M10x110 5-45	M10	110	0.07353
2428339	HST2-F V3 M10x130 5-65	M10	130	0.07700
2345323	HST2-F V3 M12x85 5	M12	85	0.08978
2345324	HST2-F V3 M12x105 5-25	M12	105	0.10103
2345325	HST2-F V3 M12x115 5-35	M12	115	0.10853
2345326	HST2-F V3 M12x125 5-45	M12	125	0.11603
2345327	HST2-F V3 M12x145 5-65	M12	145	0.13103
2407047	HST2-F V3 M12x175 5-95	M12	175	0.14896
2345328	HST2-F V3 M12x205 5-125	M12	205	0.19523
2407048	HST2-F V3 M16x105 5	M16	105	0.20933
2345329	HST2-F V3 M16x120 5-20	M16	120	0.21040
2345330	HST2-F V3 M16x140 5-40	M16	140	0.24579
2345331	HST2-F V3 M16x185 5-85	M16	185	0.30047