

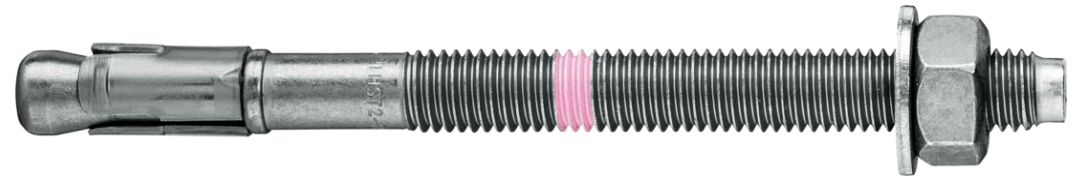


# ENVIRONMENTAL PRODUCT DECLARATION

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

Stud Anchor HST2-R V3

Hilti AG



**EPD HUB, HUB-2195**

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

## GENERAL INFORMATION

### MANUFACTURER

<b>Manufacturer</b>	Hilti AG
<b>Address</b>	Feldkircherstrasse 100, 9494 Schaan, Principality of Liechtenstein
<b>Contact details</b>	sustainability@hilti.com
<b>Website</b>	www.hilti.group

### EPD STANDARDS, SCOPE AND VERIFICATION

<b>Program Operator</b>	EPD Hub, hub@epdhub.com
<b>Reference Standard</b>	EN 15804+A2:2019 and ISO 14025
<b>PCR</b>	EPD Hub Core PCR Version 1.1, 5 Dec 2023
<b>Sector</b>	Construction product
<b>Category of EPD</b>	Third party verified EPD
<b>Scope of the EPD</b>	Cradle to gate with options, A4-A5, and modules C1-C4, D
<b>EPD Author</b>	Marielle Rhomberg, Hilti AG
<b>EPD Verification</b>	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
<b>EPD Verifier</b>	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

<b>Product Name</b>	Stud Anchor HST2-R V3
<b>Additional Labels</b>	See appendix
<b>Product Reference</b>	2345294
<b>Place of Production</b>	Schaan, Liechtenstein
<b>Period for Data</b>	2023
<b>Averaging in EPD</b>	Multiple products
<b>Variation in GWP-fossil for A1-A3</b>	Calculated from all diameters and lengths (%)

### ENVIRONMENTAL DATA SUMMARY

<b>Declared Unit</b>	1 kg
<b>Declared Unit Mass</b>	1 kg
<b>GWP-fossil, A1-A3 (kgCO<sub>2</sub>e)</b>	5,75E+00
<b>GWP-total, A1-A3 (kgCO<sub>2</sub>e)</b>	5,63E+00
<b>Secondary Material, Inputs (%)</b>	57.8
<b>Secondary Material, Outputs (%)</b>	83.2
<b>Total Energy Use, A1-A3 (kWh)</b>	21.8
<b>Net Freshwater Use, A1-A3 (m<sup>3</sup>)</b>	0.06

## 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-R V3 stainless steel is a variant 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-R V3 anchor is a torque-controlled expansion anchor made of stainless steel which is installed into a drilled hole and anchored by torque-controlled expansion.

Further information can be found at [www.hilti.group](http://www.hilti.group).

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Europe and 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	0.0373

### FUNCTIONAL UNIT AND SERVICE LIFE

Declared Unit	1 kg
Mass per declared unit VP-012	1 kg
Functional Unit	1 kg stainless steel 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 100% stainless steel (EAF). The bolt's steel and wire are produced in Italy, while the sleeve steel is produced in Finland and the metal sheet in Germany. Transportation is by sea freight

and lorry. The nut and washer are produced in China and supplied from Germany, also transported by sea freight and lorry. The bolt is cold-formed, and the sleeve is punched at Hilti's manufacturing site in Schaan, Liechtenstein. All parts, including the screw and washer, are then assembled and packaged automatically at the same site. Faulty parts and production waste are considered in A3 and 100% recycled. Packaging waste during production is minimal and therefore neglected. Electricity is used at every production stage, with compressed air mainly consumed by pneumatic drives during cold forming and automatic assembly. Auxiliary materials like forming lubricants and cleaning agents are minimal and thus neglected. Electricity is 100% renewable, comprising 89% certified wind energy and 11% from Hilti-owned photovoltaic arrays. For transportation to customers via the Hilti logistics center in Nendeln, Liechtenstein, anchors are packed in cardboard sales and export boxes and transported 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 Nendeln, Liechtenstein, anchors are distributed in containers to Hilti distribution centers worldwide. The typical route involves lorry, sea freight, and lorry. The stated distances are weighted mean values based on 2023 sales figures. Transportation has a minimal impact on the final results. Packaging waste at installation consists solely of cardboard and pallets. It is assumed that 100% of the cardboard is recycled, while 70% of the wooden pallets are incinerated with energy recovery and 30% are recycled. Waste treatment distances are generally assumed to be 50 km. The energy required for anchor installation is negligible.

## PRODUCT USE AND MAINTENANCE (B1-B7)

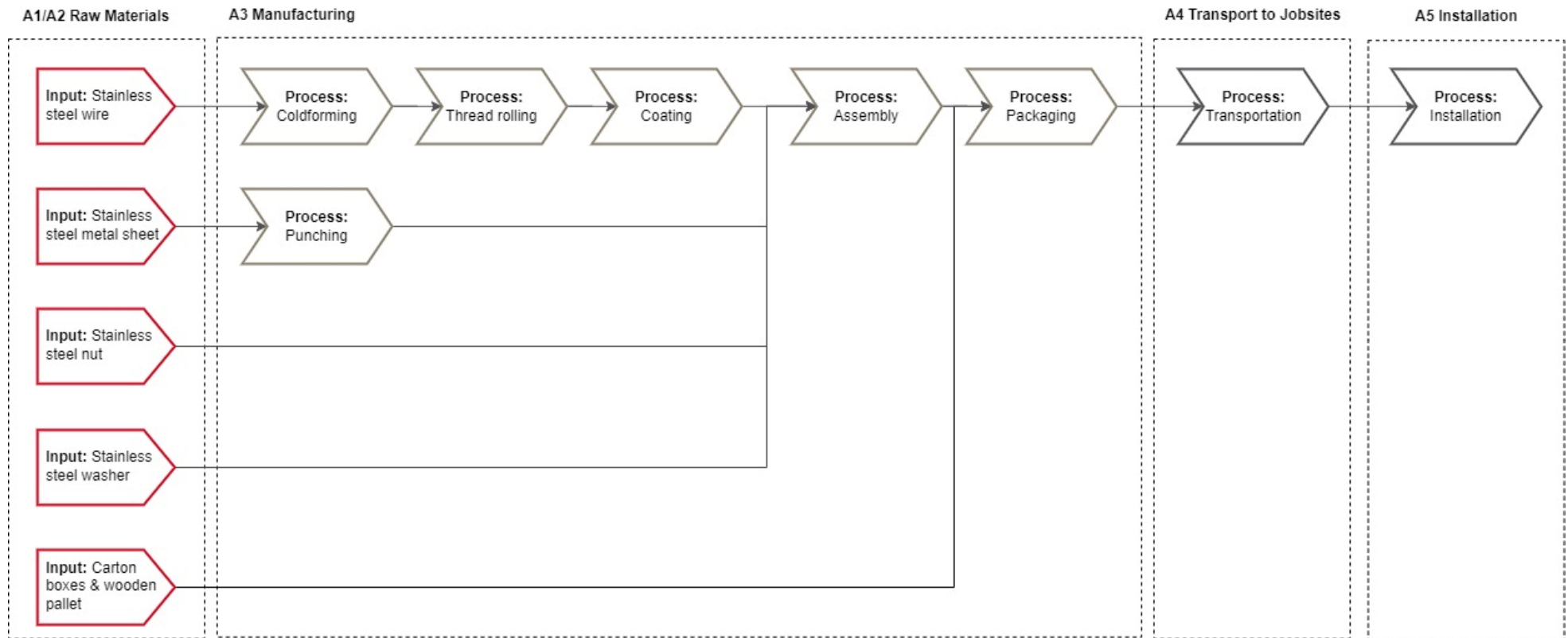
No emissions during lifecycle.

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 life, the product will be dismantled along with the building and separated using a magnet. According to studies from worldsteel.org, it is assumed that 85% of the material will be recycled, while 15% will be sent to a landfill. Waste treatment distances are generally assumed to be 50 km. The energy required for demolition is considered negligible. Module D benefits are accounted for both the product and its packaging.

# 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 <sup>1)</sup>	kg CO <sub>2</sub> e	5,48E+00	1,76E-01	-2,87E-02	5,63E+00	2,08E-01	1,39E-01	MND	MND	MND	MND	MND	MND	MND	MNR	8,50E-03	1,82E-02	7,75E-04	-4,44E-02
GWP – fossil	kg CO <sub>2</sub> e	5,47E+00	1,76E-01	1,07E-01	5,75E+00	2,08E-01	2,96E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,50E-03	1,82E-02	7,74E-04	-4,44E-02
GWP – biogenic	kg CO <sub>2</sub> e	0,00E+00	0,00E+00	-1,36E-01	-1,36E-01	0,00E+00	1,36E-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 <sub>2</sub> e	1,22E-02	7,90E-05	4,58E-04	1,27E-02	1,03E-04	4,31E-06	MND	MND	MND	MND	MND	MND	MND	MNR	3,47E-06	2,39E-05	7,31E-07	3,39E-05
Ozone depletion pot.	kg CFC-11e	2,47E-07	3,94E-08	7,78E-09	2,94E-07	4,47E-08	3,36E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,87E-09	2,25E-09	3,13E-10	-1,88E-09
Acidification potential	mol H <sup>+</sup> e	3,04E-02	1,84E-03	6,29E-04	3,28E-02	2,43E-03	2,08E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,52E-05	2,31E-04	7,28E-06	-3,38E-04
EP-freshwater <sup>2)</sup>	kg Pe	2,43E-04	1,27E-06	6,01E-06	2,50E-04	1,49E-06	4,30E-08	MND	MND	MND	MND	MND	MND	MND	MNR	7,17E-08	9,77E-07	8,11E-09	-1,76E-06
EP-marine	kg Ne	5,00E-03	4,82E-04	1,61E-04	5,64E-03	6,26E-04	7,95E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,03E-05	4,89E-05	2,52E-06	-4,84E-05
EP-terrestrial	mol Ne	5,63E-02	5,35E-03	1,46E-03	6,31E-02	6,95E-03	9,11E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,13E-04	5,65E-04	2,77E-05	-5,98E-04
POCP (“smog”) <sup>3)</sup>	kg NMVOCe	1,77E-02	1,50E-03	4,06E-04	1,96E-02	1,89E-03	2,45E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,45E-05	1,55E-04	8,06E-06	-1,63E-04
ADP-minerals & metals <sup>4)</sup>	kg Sbe	1,41E-04	3,76E-07	1,17E-06	1,43E-04	6,08E-07	1,97E-08	MND	MND	MND	MND	MND	MND	MND	MNR	2,96E-08	2,45E-06	1,78E-09	-3,86E-07
ADP-fossil resources	MJ	5,90E+01	2,55E+00	1,48E+00	6,31E+01	2,91E+00	2,87E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,23E-01	2,47E-01	2,12E-02	-4,28E-01
Water use <sup>5)</sup>	m <sup>3</sup> e depr.	2,07E+00	1,07E-02	6,03E-02	2,14E+00	1,17E-02	1,21E-03	MND	MND	MND	MND	MND	MND	MND	MNR	5,39E-04	4,79E-03	6,73E-05	-8,50E-03

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 PO<sub>4</sub>e; 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, PEF

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	4,19E-07	1,71E-08	1,07E-08	4,47E-07	1,47E-08	2,54E-10	MND	MND	MND	MND	MND	MND	MND	MNR	7,23E-10	3,02E-09	1,47E-10	-5,11E-09
Ionizing radiation <sup>6)</sup>	kBq 11235e	3,59E-01	1,21E-02	1,34E-02	3,84E-01	1,35E-02	2,23E-04	MND	MND	MND	MND	MND	MND	MND	MNR	5,71E-04	2,75E-03	9,60E-05	-7,79E-04
Ecotoxicity (freshwater)	CTUe	1,77E+02	2,17E+00	3,41E+00	1,82E+02	2,48E+00	4,36E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,13E-01	1,12E+00	1,38E-02	-2,13E+00
Human toxicity, cancer	CTUh	1,15E-07	6,89E-11	2,11E-10	1,15E-07	9,04E-11	1,31E-11	MND	MND	MND	MND	MND	MND	MND	MNR	3,18E-12	3,43E-11	3,46E-13	-2,71E-10
Human tox. non-cancer	CTUh	1,36E-07	2,04E-09	2,03E-09	1,41E-07	2,18E-09	6,49E-11	MND	MND	MND	MND	MND	MND	MND	MNR	1,05E-10	1,53E-09	9,05E-12	-7,23E-10
SQP <sup>7)</sup>	-	2,88E+01	2,45E+00	1,40E+01	4,52E+01	1,63E+00	2,04E-02	MND	MND	MND	MND	MND	MND	MND	MNR	8,52E-02	4,97E-01	4,54E-02	-1,51E+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 <sup>8)</sup>	MJ	1,33E+01	2,66E-02	1,98E+00	1,53E+01	3,07E-02	2,45E-03	MND	MND	MND	MND	MND	MND	MND	MNR	1,44E-03	4,38E-02	1,84E-04	-3,05E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,18E+00	1,18E+00	0,00E+00	-1,18E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	6,37E-01
Total use of renew. PER	MJ	1,33E+01	2,66E-02	3,16E+00	1,65E+01	3,07E-02	-1,18E+00	MND	MND	MND	MND	MND	MND	MND	MNR	1,44E-03	4,38E-02	1,84E-04	3,31E-01
Non-re. PER as energy	MJ	5,90E+01	2,55E+00	1,42E+00	6,30E+01	2,91E+00	2,87E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,23E-01	2,47E-01	2,12E-02	-4,24E-01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	6,24E-02	6,24E-02	0,00E+00	-6,24E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	6,22E-03
Total use of non-re. PER	MJ	5,90E+01	2,55E+00	1,48E+00	6,31E+01	2,91E+00	-3,37E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,23E-01	2,47E-01	2,12E-02	-4,18E-01
Secondary materials	kg	5,78E-01	7,96E-04	2,24E-02	6,01E-01	1,05E-03	3,99E-05	MND	MND	MND	MND	MND	MND	MND	MNR	4,05E-05	2,75E-04	4,46E-06	4,35E-03
Renew. secondary fuels	MJ	1,51E-03	6,39E-06	2,45E-02	2,60E-02	1,03E-05	2,14E-07	MND	MND	MND	MND	MND	MND	MND	MNR	5,25E-07	1,43E-05	1,17E-07	8,46E-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 <sup>3</sup>	6,08E-02	2,99E-04	1,46E-03	6,26E-02	3,05E-04	2,82E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,45E-05	1,45E-04	2,32E-05	-3,53E-04

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	5,07E+00	3,41E-03	8,90E-03	5,09E+00	4,13E-03	1,40E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,77E-04	1,68E-03	0,00E+00	-1,35E-02
Non-hazardous waste	kg	8,96E+00	5,05E-02	1,99E-01	9,21E+00	5,86E-02	3,85E-02	MND	MND	MND	MND	MND	MND	MND	MNR	2,83E-03	5,36E-02	1,47E-01	-1,14E-01
Radioactive waste	kg	1,37E-04	1,73E-05	4,80E-06	1,59E-04	1,95E-05	1,56E-07	MND	MND	MND	MND	MND	MND	MND	MNR	8,13E-07	1,45E-06	0,00E+00	-9,67E-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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,25E-02	1,25E-02	0,00E+00	5,32E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,32E-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	3,60E-02	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	4,00E-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 <sub>2</sub> e	5,35E+00	1,75E-01	1,07E-01	5,63E+00	2,06E-01	2,93E-03	MND	MND	MND	MND	MND	MND	MND	MNR	8,41E-03	1,79E-02	7,58E-04	-4,35E-02
Ozone depletion Pot.	kg CFC <sub>11</sub> e	2,16E-07	3,12E-08	6,55E-09	2,54E-07	3,54E-08	2,73E-10	MND	MND	MND	MND	MND	MND	MND	MNR	1,48E-09	1,82E-09	2,48E-10	-1,43E-09
Acidification	kg SO <sub>2</sub> e	2,53E-02	1,46E-03	5,03E-04	2,73E-02	1,93E-03	1,50E-05	MND	MND	MND	MND	MND	MND	MND	MNR	2,74E-05	1,87E-04	5,50E-06	-2,76E-04
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	8,90E-03	2,15E-04	2,77E-04	9,39E-03	2,73E-04	1,31E-05	MND	MND	MND	MND	MND	MND	MND	MNR	6,29E-06	6,17E-05	1,19E-06	-7,11E-05
POCP (“smog”)	kg C <sub>2</sub> H <sub>4</sub> e	1,28E-03	4,35E-05	3,14E-05	1,36E-03	5,69E-05	6,48E-07	MND	MND	MND	MND	MND	MND	MND	MNR	1,11E-06	7,07E-06	2,31E-07	-1,38E-05
ADP-elements	kg Sbe	1,41E-04	3,65E-07	1,15E-06	1,42E-04	5,94E-07	1,91E-08	MND	MND	MND	MND	MND	MND	MND	MNR	2,89E-08	2,45E-06	1,75E-09	-3,49E-07
ADP-fossil	MJ	5,90E+01	2,55E+00	1,47E+00	6,30E+01	2,91E+00	2,87E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,23E-01	2,47E-01	2,12E-02	-4,23E-01

## 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:

Item Number	Item Designation	Diameter	Length	Gross Weight [kg]
2407046	HST2-R V3 M8x55 5	M8	55	0.024240
2345288	HST2-R V3 M8x70 5-20	M8	70	0.028900
2345289	HST2-R V3 M8x80 5-30	M8	80	0.033998
2345290	HST2-R V3 M8x90 5-40	M8	90	0.033998
2345291	HST2-R V3 M8x100 5-50	M8	100	0.036584
2345292	HST2-R V3 M8x110 15-60	M8	110	0.039546
2345293	HST2-R V3 M10x70 5	M10	70	0.047650
2345295	HST2-R V3 M10x100 5-35	M10	100	0.049832
2345294	HST2-R V3 M10x90 5-25	M10	90	0.055058
2345296	HST2-R V3 M10x110 5-45	M10	110	0.071175
2345297	HST2-R V3 M10x130 5-65	M10	130	0.081800
2345299	HST2-R V3 M12x85 5	M12	85	0.082676
2345298	HST2-R V3 M10x150 5-85	M10	150	0.089172
2345300	HST2-R V3 M12x105 5-25	M12	105	0.094760
2345301	HST2-R V3 M12x115 5-35	M12	115	0.103868
2345302	HST2-R V3 M12x125 5-45	M12	125	0.103868
2345303	HST2-R V3 M12x145 5-65	M12	145	0.124376
2345304	HST2-R V3 M12x175 5-95	M12	175	0.148000
2345307	HST2-R V3 M16x105 5	M16	105	0.199094
2345311	HST2-R V3 M16x165 5-65	M16	165	0.204806
2345308	HST2-R V3 M16x120 5-20	M16	120	0.224394
2345309	HST2-R V3 M16x130 5-30	M16	130	0.224394
2345310	HST2-R V3 M16x140 5-40	M16	140	0.224394
2345312	HST2-R V3 M16x185 5-85	M16	185	0.284375