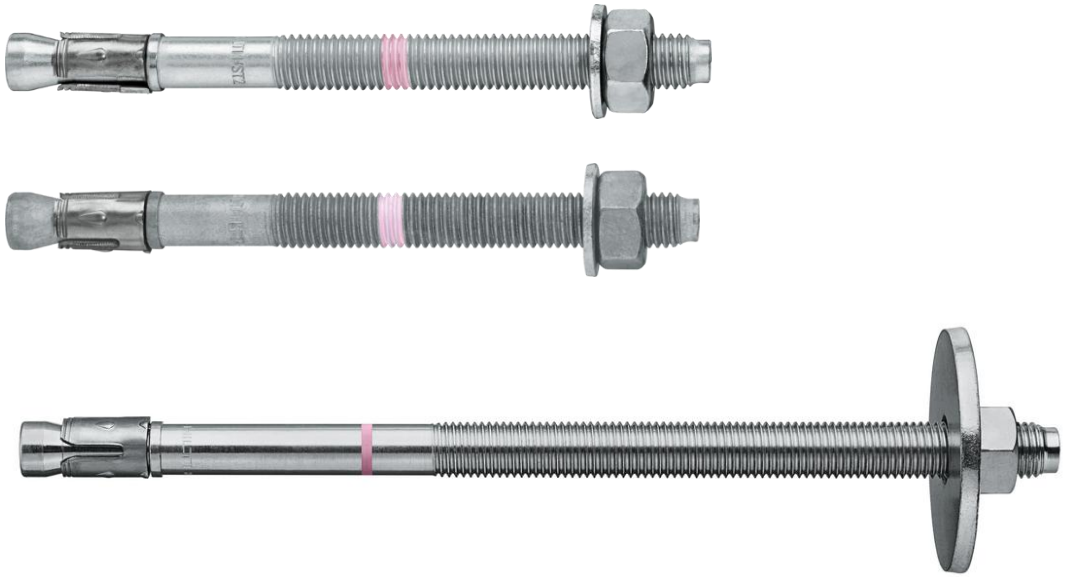


# ENVIRONMENTAL PRODUCT DECLARATION

## IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Stud Anchor HST2 V3 / HST2-F V3 / HST2 V3 Timber

Hilti AG



**EPD HUB, EPD number HUB-2238**

Published on 15.11.2024, last updated on 08.10.2026, valid until 15.11.2029

Created with One Click LCA

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| **Manufacturer** | Hilti AG |
| **Address** | Feldkircherstrasse 100, 9494<br>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 |
| **Parent EPD Number** | - |
| **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:<br>☐ Internal verification ☑ 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 / HST2 V3 Timber |
| **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 ($kgCO_2e$)** | 3,32E+00 |
| **GWP-total, A1-A3 ($kgCO_2e$)** | 3,15E+00 |
| **Secondary Material, Inputs (%)** | 25.1 |
| **Secondary Material, Outputs (%)** | 0 |
| **Total Energy Use, A1-A3 (kWh)** | 19 |
| **Net Freshwater Use, A1-A3 ($m^3$)** | 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 V3, HST2-F V3, and HST2 V3 Timber are carbon steel 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 The HST2 V3, HST2-F V3, and HST2 V3 Timber anchors are a torque-controlled expansion anchors made of carbon steel which are 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

| | |
|---|---|
| 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 | 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 | ND | ND | ND | ND | ND | ND | ND | x | x | x | x | x | | |
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/ demolition | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |

*Modules not declared = ND. 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. 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 carbon steel bolt wire is produced in China and transported to the Hilti manufacturing site in Zhanjiang, China by lorry. The stainless steel for the sleeve is produced in China, where it is stamped and transported to the plant by lorry. The carbon steel nut and washer are produced in China and transported by lorry. At Hilti's manufacturing site in Zhanjiang, China, the bolt wire is headed, thread-rolled, zinc-plated, and coated. The sleeve is supplied as a final component. 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.

93% of the total steel is carbon steel, produced via blast oxygen furnace (BOF), with 20% recycled material. 7% is stainless steel, produced via electric arc furnace (EAF), with 80% recycled material. Based on the most comprehensive market information and internal evaluations, the recycled content is around 30% pre-consumer and 70% post-consumer

| Steel Type | Weight | Recycled Material | Steel Source | Recycled Content | Pre-Consumer | Post-Consumer |
|---|---|---|---|---|---|---|
| Carbon | 93% | 20% | BOF | 18.6% | 5.6% | 13.0% |
| Stainless | 7% | 80% | EAF | 5.6% | 1.7% | 3.9% |
| | | | **Total** | **24.2%** | **7.3%** | **16.9%** |

**Notes**:
Recycled Material refers to the % of recycled material in the steel type
Recycled Content refers to the % contribution of recycled material to the total product
Recycled Content = (% Weight) x (% Recycled Material)
Pre-/Post Consumer = (% Recycled Content) × (% Pre- or Post-Consumer Share, 30% or 70%)

## 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.

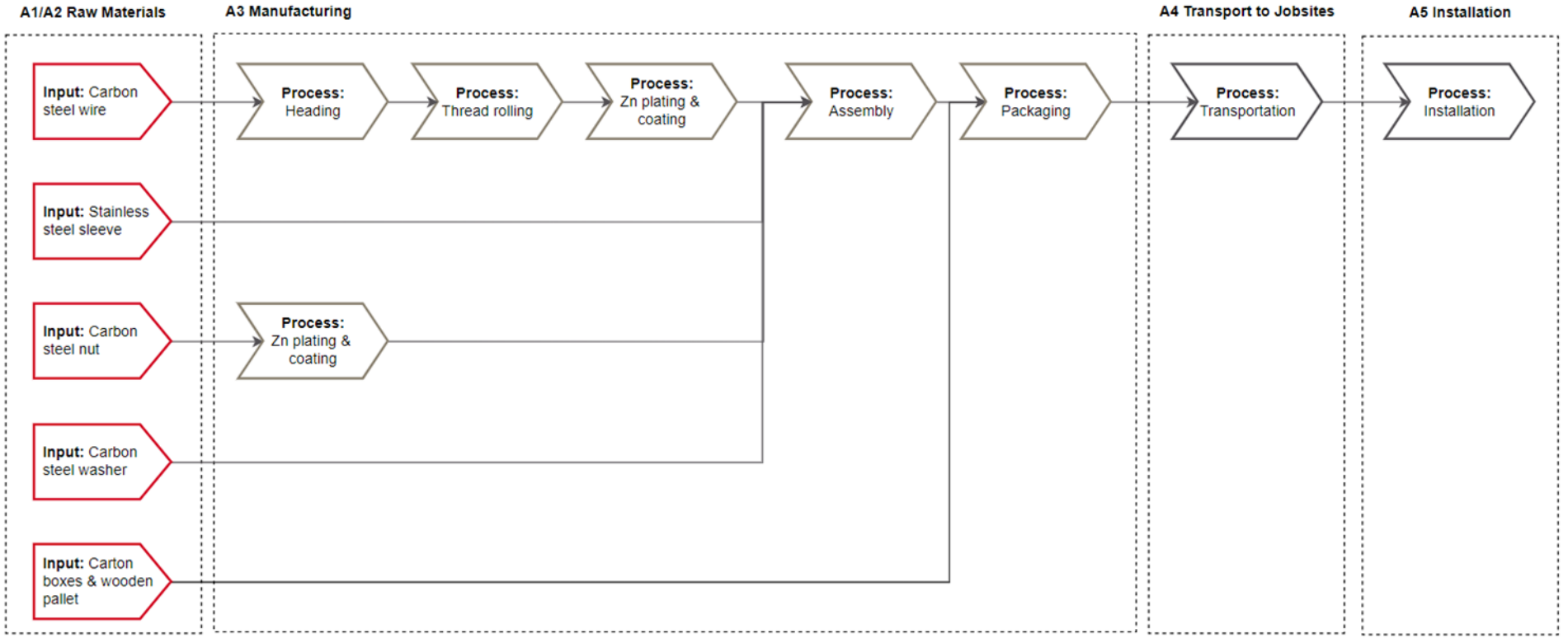
## PRODUCT USE AND MAINTENANCE (B1-B7)

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

| 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | MNR | 3,54E-06 | 2,44E-05 | 7,46E-07 | 6,42E-04 |
| Ozone depletion pot. | kg $CFC\text{-}_{11}$e | 1,45E-07 | 1,60E-08 | 2,16E-08 | 1,83E-07 | 4,60E-08 | 4,36E-10 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | MNR | 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 $CO_2$e | 2,89E+00 | 6,86E-02 | 2,71E-01 | 3,23E+00 | 2,21E-01 | 4,12E-03 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | MNR | 6,42E-06 | 6,30E-05 | 1,21E-06 | -9,69E-04 |
| POCP (“smog”) | kg $C_2H_4$e | 1,19E-03 | 8,91E-06 | 9,43E-05 | 1,29E-03 | 1,03E-04 | 8,29E-07 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | 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.

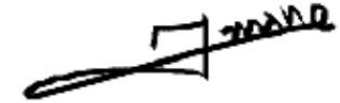
I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

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(-F) V3 portfolio:

| Material | Designation | Diameter | Length |
|---|---|---|---|
| 2407042 | HST2 V3 M8x55 5 | M8 | 55 |
| 2345233 | HST2 V3 M8x70 5-20 | M8 | 70 |
| 2345272 | HST2 V3 M8x70 5-20 BW | M8 | 70 |
| 2345234 | HST2 V3 M8x80 5-30 | M8 | 80 |
| 2345235 | HST2 V3 M8x90 5-40 | M8 | 90 |
| 2345236 | HST2 V3 M8x100 5-50 | M8 | 100 |
| 2345237 | HST2 V3 M8x110 5-60 | M8 | 110 |
| 2345238 | HST2 V3 M8x130 5-80 | M8 | 130 |
| 2345239 | HST2 V3 M10x70 5 | M10 | 70 |
| 2345273 | HST2 V3 M10x70 5 BW | M10 | 70 |
| 2345250 | HST2 V3 M10x90 5-25 | M10 | 90 |
| 2345274 | HST2 V3 M10x90 5-25 BW | M10 | 90 |
| 2345251 | HST2 V3 M10x100 5-35 | M10 | 100 |
| 2345252 | HST2 V3 M10x110 5-45 | M10 | 110 |
| 2345253 | HST2 V3 M10x130 5-65 | M10 | 130 |
| 2345254 | HST2 V3 M10x150 5-85 | M10 | 150 |
| 2345255 | HST2 V3 M10x170 5-105 | M10 | 170 |
| 2345257 | HST2 V3 M12x105 5-25 | M12 | 105 |
| 2345275 | HST2 V3 M12x105 5-25 BW | M12 | 105 |
| 2345258 | HST2 V3 M12x115 5-35 | M12 | 115 |
| 2345276 | HST2 V3 M12x115 5-35 BW | M12 | 115 |
| 2345259 | HST2 V3 M12x125 5-45 | M12 | 125 |
| 2345260 | HST2 V3 M12x145 5-65 | M12 | 145 |
| 2345261 | HST2 V3 M12x175 5-95 | M12 | 175 |
| 2345262 | HST2 V3 M12x205 5-125 | M12 | 205 |
| 2345263 | HST2 V3 M12x225 5-145 | M12 | 225 |
| 2345270 | HST2 V3 M16x230 5-130 | M16 | 230 |
| 2345313 | HST2-F V3 M8x55 5 | M08 | 55 |
| 2345314 | HST2-F V3 M8x70 5-20 | M08 | 70 |
| 2345315 | HST2-F V3 M8x90 5-40 | M08 | 90 |
| 2345316 | HST2-F V3 M8x100 5-50 | M08 | 100 |
| 2345318 | HST2-F V3 M8x130 5-80 | M08 | 130 |
| 2345319 | HST2-F V3 M10x70 5 | M10 | 70 |
| 2345320 | HST2-F V3 M10x90 5-25 | M10 | 90 |
| 2345321 | HST2-F V3 M10x100 5-35 | M10 | 100 |
| 2345322 | HST2-F V3 M10x110 5-45 | M10 | 110 |
| 2428339 | HST2-F V3 M10x130 5-65 | M10 | 130 |
| 2345323 | HST2-F V3 M12x85 5 | M12 | 85 |
| 2345324 | HST2-F V3 M12X105 5-25 | M12 | 105 |
| 2345325 | HST2-F V3 M12x115 5-35 | M12 | 115 |
| 2345326 | HST2-F V3 M12x125 5-45 | M12 | 125 |
| 2345327 | HST2-F V3 M12x145 5-65 | M12 | 145 |
| 2407047 | HST2-F V3 M12X175 5-95 | M12 | 175 |
| 2345328 | HST2-F V3 M12x205 5-125 | M12 | 205 |
| 2407048 | HST2-F V3 M16x105 5 | M16 | 105 |
| 2345329 | HST2-F V3 M16x120 5-20 | M16 | 120 |
| 2345330 | HST2-F V3 M16x140 5-40 | M16 | 140 |

| Material | Designation | Diameter | Length |
|---|---|---|---|
| 2345331 | HST2-F V3 M16x185 5-85 | M16 | 185 |
| 2464077 | Stud anchor HST2 V3 M12x165/60 timber | M12 | 165 |
| 2464132 | Stud anchor HST2 V3 M12x185/80 timber | M12 | 185 |
| 2464078 | Stud anchor HST2 V3 M12x205/100 timber | M12 | 205 |
| 2464089 | Stud anchor HST2 V3 M12x225/120 timber | M12 | 225 |
| 2464079 | Stud anchor HST2 V3 M12x265/160 timber | M12 | 265 |
| 2464230 | Stud anchor HST2 V3 M12x285/180 timber | M12 | 285 |
| 2464093 | Stud anchor HST2 V3 M12x245/140 timber | M12 | 245 |
| 2464240 | Stud anchor HST2 V3 M12x305/200 timber | M12 | 305 |
| 2464241 | Stud anchor HST2 V3 M16x285/160 timber | M16 | 285 |
| 2464133 | Stud anchor HST2 V3 M16x305/180 timber | M16 | 305 |
| 2464094 | Stud anchor HST2 V3 M16x325/200 timber | M16 | 325 |
| 2464134 | Stud anchor HST2 V3 M16x365/240 timber | M16 | 365 |
| 2464242 | Stud anchor HST2 V3 M16x405/280 timber | M16 | 405 |
| 2464104 | Stud anchor HST2 V3 M16x445/320 timber | M16 | 445 |
| 2464095 | Stud anchor HST2 V3 M16x485/360 timber | M16 | 485 |