



ENVIRONMENTAL PRODUCT DECLARATION

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

Structural Timber Screw Portfolio
Hilti AG



EPD HUB, HUB-1512

Published on 31.05.2024, last updated on 31.05.2024, valid until 31.05.2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Hilti AG
Address	Feldkircherstrasse 100
Contact details	Sustainability@Hilti.com
Website	www.hilti.com

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	Elise Janssen, 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	Nemanja Nedic, 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	Structural Timber Screw Portfolio
Additional labels	See appendix
Product reference	2363629
Place of production	Austria
Period for data	Calendar year 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-0.6% +0.3% %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of galvanized steel screw for timber
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO₂e)	3,23E+00
GWP-total, A1-A3 (kgCO₂e)	3,07E+00
Secondary material, inputs (%)	23.5
Secondary material, outputs (%)	85
Total energy use, A1-A3 (kWh)	13.6
Total water use, A1-A3 (m³e)	0.08

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

The Hilti Group supplies the worldwide construction and energy industries with technologically leading products, systems, software and services. With about 33,000 team members in over 120 countries the company stands for direct customer relationships, quality and innovation. Hilti generated annual sales of more than CHF 6.3 billion in 2022. The headquarters of the Hilti Group have been located in Schaan, Liechtenstein, since its founding in 1941. The company is privately owned by the Martin Hilti Family Trust, which ensures its long-term continuity. The Hilti Group's purpose is making construction better, based on a passionate and inclusive global team and a caring and performance-oriented culture.

PRODUCT DESCRIPTION

Hilti Structural Timber Screw portfolio consists of Duplex coated carbon steel screws. Various head types (90° countersunk, washer, cylinder, dual), thread type (partial, full) and tip type (stitch point, half tip) are covered in the offering. Typical application for structural timber screws include Rafter reinforcement, CLT walls and ceilings, Support reinforcement with steel plate, Transverse tension reinforcement for notching, and connection to base point of support.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100	Europe
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	0.0441

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	kg
Mass per declared unit	1 kg
Functional unit	1 kg
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage								End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D			
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x			
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	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 galvanized steel screw is made from galvanized low-carbon steel. The referenced product is S-WCP-Z wood construction screw, countersunk head with partial thread, which is a connecting component for fastening to wood. The steel is all BOF coming from two suppliers. The coils are cut and cold formed to form the blank in its final size and shape. The part is the rolled to form the thread and the heat treated to get the desired

properties. The steel screw is sent to a sub-contractor for hot-dip galvanizing (HDG) and is then transported back to the factory for packaging and distribution. The manufacturing process requires electricity and fuels for powering the production equipment. Wastewater treatment is also considered. A wooden pallet and cardboard are used as packaging materials for transporting the screw to the dedicated market places.

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.

The transportation is calculated based on the distance traveled by lorry from the supplier to the warehouses in respective markets. Currently all sales are in Scandinavia. Vehicle capacity utilization volume factor 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 product is packaged properly.

Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets/cardboard boxes. The impacts of material production, its processing and its disposal as installation waste are also assessed. Bolts used in the installation process and electricity consumption for the assembly are considered, too. No installation losses happen in this stage if the installation process is carried out appropriately according to Hilti instructions.

PRODUCT USE AND MAINTENANCE (B1-B7)

The use phase is not relevant for the life cycle emissions of this product and is, therefore, not accounted into the assessment.

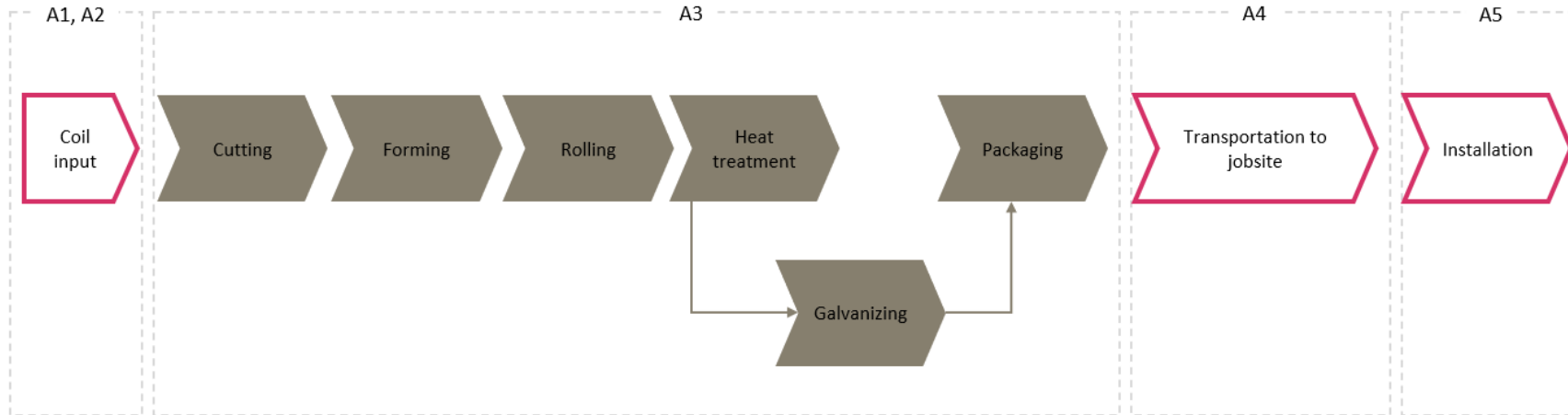
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The product is considered to be dismantled by a power tool and with negligible energy use. 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 100 km, the transportation method is assumed to be lorry. 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 85% in the calculation is based on world average. Actual recyclability may vary between regions.

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 materials	No allocation
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	-0.6% +0.3% %

The averaging of products is calculated based on the lightest and heaviest product in the series. The declared unit 1 kg of hot-dip galvanized screw is representative for a product consisting of a screw with total weight of 0.0149kg. The thickness of the galvanization coating is on average 8 microns.

The products included in the averaging are also wood construction screws, countersunk/washer head with partial thread. They share the function of connecting timber profiles and components together.

Certain variability (not more than -0.6 to +0.3%) is possible for products in the series depending on their size and thickness.

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	2,94E+00	2,24E-01	-9,90E-02	3,07E+00	6,44E-02	1,64E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,86E-02	7,91E-04	-1,50E+00
GWP – fossil	kg CO ₂ e	2,94E+00	2,24E-01	6,22E-02	3,23E+00	6,44E-02	2,42E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,86E-02	7,90E-04	-1,50E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	1,74E-06	-1,61E-01	-1,61E-01	0,00E+00	1,61E-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	2,03E-03	9,12E-05	2,60E-04	2,38E-03	2,50E-05	8,08E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,44E-05	7,46E-07	-2,44E-04
Ozone depletion pot.	kg CFC ₁₁ e	1,74E-07	4,93E-08	6,03E-09	2,30E-07	1,52E-08	3,18E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,30E-09	3,20E-10	-5,50E-08
Acidification potential	mol H ⁺ e	4,03E-02	9,26E-04	3,68E-04	4,16E-02	2,10E-04	2,94E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,36E-04	7,43E-06	-6,54E-03
EP-freshwater ²⁾	kg Pe	1,44E-04	1,89E-06	2,86E-06	1,48E-04	5,46E-07	2,82E-08	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,98E-07	8,28E-09	-6,05E-05
EP-marine	kg Ne	3,42E-03	2,70E-04	1,26E-04	3,82E-03	4,61E-05	1,27E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,99E-05	2,57E-06	-1,29E-03
EP-terrestrial	mol Ne	1,52E-01	2,98E-03	1,07E-03	1,56E-01	5,12E-04	1,46E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	5,77E-04	2,83E-05	-1,49E-02
POCP (“smog”) ³⁾	kg NMVOCe	1,27E-02	9,08E-04	3,09E-04	1,39E-02	1,98E-04	3,88E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,59E-04	8,23E-06	-7,25E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1,23E-04	7,78E-07	5,39E-07	1,24E-04	1,57E-07	1,41E-08	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,51E-06	1,82E-09	-2,63E-05
ADP-fossil resources	MJ	3,37E+01	3,24E+00	8,07E-01	3,77E+01	1,01E+00	2,44E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,52E-01	2,17E-02	-1,30E+01
Water use ⁵⁾	m ³ e depr.	1,29E+00	1,42E-02	2,21E+00	3,51E+00	4,50E-03	1,83E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,89E-03	6,87E-05	-2,61E-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, 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	4,62E-07	1,90E-08	7,57E-09	4,89E-07	7,33E-09	3,24E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,09E-09	1,50E-10	-1,08E-07
Ionizing radiation ⁶⁾	kBq U235e	2,19E-01	1,50E-02	3,85E-03	2,38E-01	4,83E-03	1,52E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,81E-03	9,80E-05	4,81E-02
Ecotoxicity (freshwater)	CTUe	1,27E+02	2,98E+00	2,07E+00	1,32E+02	8,98E-01	3,91E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,14E+00	1,41E-02	-5,38E+01
Human toxicity, cancer	CTUh	1,64E-08	8,38E-11	2,52E-10	1,67E-08	2,20E-11	2,42E-11	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,50E-11	3,53E-13	1,16E-08
Human tox. non-cancer	CTUh	9,17E-08	2,78E-09	1,09E-09	9,55E-08	8,64E-10	8,93E-11	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,56E-09	9,24E-12	-3,41E-08
SQP ⁷⁾	-	1,01E+01	2,24E+00	1,70E+01	2,93E+01	1,16E+00	2,16E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	5,08E-01	4,63E-02	-5,78E+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	3,55E+00	3,80E-02	7,88E+00	1,15E+01	1,14E-02	1,57E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,47E-02	1,88E-04	-1,28E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,42E+00	1,42E+00	0,00E+00	-1,42E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	3,18E-01
Total use of renew. PER	MJ	3,55E+00	3,80E-02	9,29E+00	1,29E+01	1,14E-02	-1,42E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,47E-02	1,88E-04	-9,66E-01
Non-re. PER as energy	MJ	3,36E+01	3,24E+00	7,22E-01	3,76E+01	1,01E+00	2,44E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,52E-01	2,17E-02	-1,30E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	7,52E-02	7,52E-02	0,00E+00	-7,52E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	2,50E-03
Total use of non-re. PER	MJ	3,36E+01	3,24E+00	7,97E-01	3,77E+01	1,01E+00	-5,08E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,52E-01	2,17E-02	-1,30E+01
Secondary materials	kg	2,35E-01	1,07E-03	2,84E-02	2,65E-01	2,80E-04	4,09E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,81E-04	4,55E-06	7,88E-01
Renew. secondary fuels	MJ	2,91E-04	1,38E-05	3,08E-02	3,11E-02	2,82E-06	1,28E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,46E-05	1,19E-07	-1,81E-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	2,99E-02	3,83E-04	5,15E-02	8,18E-02	1,30E-04	4,40E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,48E-04	2,37E-05	-3,19E-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	1,09E+00	4,66E-03	5,24E-03	1,10E+00	1,33E-03	7,72E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,71E-03	0,00E+00	-4,67E-01
Non-hazardous waste	kg	5,89E+00	7,45E-02	8,34E-02	6,05E+00	2,18E-02	7,82E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	5,47E-02	1,50E-01	-2,39E+00
Radioactive waste	kg	8,46E-05	2,14E-05	2,38E-06	1,08E-04	6,80E-06	1,13E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,48E-06	0,00E+00	2,83E-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	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	4,51E-02	4,51E-02	0,00E+00	2,48E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	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	8,55E-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	2,83E+00	2,21E-01	6,36E-02	3,12E+00	6,38E-02	2,40E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,83E-02	7,74E-04	-1,42E+00
Ozone depletion Pot.	kg CFC ₋₁₁ e	1,69E-07	3,91E-08	4,98E-09	2,13E-07	1,20E-08	2,63E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,86E-09	2,53E-10	-6,09E-08
Acidification	kg SO ₂ e	2,50E-02	7,22E-04	2,80E-04	2,60E-02	1,70E-04	2,04E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,91E-04	5,61E-06	-5,31E-03
Eutrophication	kg PO ₄ ³ e	9,22E-03	1,66E-04	1,45E-04	9,54E-03	3,72E-05	2,40E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	6,30E-05	1,21E-06	-2,49E-03
POCP ("smog")	kg C ₂ H ₄ e	1,25E-03	2,93E-05	2,13E-05	1,30E-03	7,84E-06	8,54E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	7,22E-06	2,35E-07	-8,18E-04
ADP-elements	kg Sbe	1,23E-04	7,60E-07	5,02E-07	1,24E-04	1,52E-07	1,33E-08	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,50E-06	1,79E-09	-2,62E-05
ADP-fossil	MJ	3,36E+01	3,24E+00	8,04E-01	3,77E+01	1,01E+00	2,44E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,52E-01	2,17E-02	-1,30E+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.

Nemanja Nedic, as an authorized verifier acting for EPD Hub Limited
31.05.2024



APPENDIX

PRODUCT PORTFOLIO INCLUDED IN SCOPE

The following list of products are included in the scope of this declaration, as represented by S-WCP-S-6x120/70 Z (item number 2363629)

Item number	Item designation	Weight [kg]
2363490	S-WCF-H-8x120 Z	0.0263
2363491	S-WCF-H-8x140 Z	0.0304
2363492	S-WCF-H-8x160 Z	0.0345
2363493	S-WCF-H-8x180 Z	0.0386
2363494	S-WCF-H-8x200 Z	0.0427
2363495	S-WCF-H-8x220 Z	0.0468
2363496	S-WCF-H-8x240 Z	0.0509
2363497	S-WCF-H-8x260 Z	0.0536
2363498	S-WCF-H-8x280 Z	0.0591
2363499	S-WCF-H-8x300 Z	0.0632
2363580	S-WCF-H-8x325 Z	0.0668
2363581	S-WCF-H-8x350 Z	0.072
2363582	S-WCF-H-8x375 Z	0.0772
2363583	S-WCF-H-8x400 Z	0.0837
2363584	S-WCF-H-8x450 Z	0.095
2363585	S-WCF-H-8x500 Z	0.1051
2372405	S-WCF-H-8x580 Z	0.1198
2363586	S-WCF-H-10x120 Z	0.0383
2363587	S-WCF-H-10x160 Z	0.0502
2363588	S-WCF-H-10x180 Z	0.0561
2363589	S-WCF-H-10x200 Z	0.062
2363590	S-WCF-H-10x220 Z	0.068
2363591	S-WCF-H-10x240 Z	0.0739
2363592	S-WCF-H-10x260 Z	0.0799
2363593	S-WCF-H-10x280 Z	0.0858

Item number	Item designation	Weight [kg]
2363594	S-WCF-H-10x300 Z	0.0978
2363595	S-WCF-H-10x325 Z	0.105
2363596	S-WCF-H-10x350 Z	0.1137
2363597	S-WCF-H-10x375 Z	0.122
2363598	S-WCF-H-10x400 Z	0.1283
2363599	S-WCF-H-10x450 Z	0.1455
2363600	S-WCF-H-10x500 Z	0.164
2372404	S-WCF-H-10x580 Z	0.1877
2363601	S-WXF-S-8x120 Z	0.0248
2363602	S-WXF-S-8x140 Z	0.0289
2363603	S-WXF-S-8x160 Z	0.033
2363604	S-WXF-S-8x180 Z	0.037
2363605	S-WXF-S-8x200 Z	0.0415
2363606	S-WXF-S-8x220 Z	0.0453
2363607	S-WXF-S-8x240 Z	0.0497
2363608	S-WXF-S-8x260 Z	0.054
2363609	S-WXF-S-8x280 Z	0.0588
2363610	S-WXF-S-8x300 Z	0.062
2363611	S-WXF-S-8x325 Z	0.0672
2363612	S-WXF-S-8x350 Z	0.072
2363613	S-WXF-S-8x375 Z	0.0775
2363614	S-WXF-S-8x400 Z	0.0837
2372403	S-WXF-S-8x500 Z	0.2087
2363615	S-WXF-H-10x200 Z	0.062
2363616	S-WXF-H-10x240 Z	0.0739
2363617	S-WXF-H-10x260 Z	0.0799
2363618	S-WXF-H-10x280 Z	0.0858
2363619	S-WXF-H-10x300 Z	0.0917
2363510	S-WXF-H-10x325 Z	0.0976
2363511	S-WXF-H-10x350 Z	0.106
2363512	S-WXF-H-10x375 Z	0.1141

Item number	Item designation	Weight [kg]
2363513	S-WXF-H-10x400 Z	0.1283
2363514	S-WXF-H-10x450 Z	0.1455
2363515	S-WXF-H-10x500 Z	0.162
2363516	S-WWP-S-6x60/40 Z	0.0085
2363517	S-WWP-S-6x80/50 Z	0.0111
2363518	S-WWP-S-6x100/60 Z	0.0136
2363519	S-WWP-S-6x120/70 Z	0.0156
2363520	S-WWP-S-6x140/70 Z	0.018
2363521	S-WWP-S-6x160/70 Z	0.0203
2363522	S-WWP-S-6x180/70 Z	0.0225
2363523	S-WWP-S-6x200/70 Z	0.0251
2363524	S-WWP-S-8x80/50 Z	0.0212
2363525	S-WWP-S-8x100/60 Z	0.0253
2363526	S-WWP-S-8x120/80 Z	0.0295
2363527	S-WWP-S-8x140/80 Z	0.0336
2363528	S-WWP-S-8x160/80 Z	0.0397
2363529	S-WWP-S-8x180/100 Z	0.0418
2363530	S-WWP-S-8x200/100 Z	0.0459
2363531	S-WWP-S-8x220/100 Z	0.0497
2363532	S-WWP-S-8x240/100 Z	0.0542
2363533	S-WWP-S-8x260/100 Z	0.0583
2363534	S-WWP-S-8x280/100 Z	0.0624
2363535	S-WWP-S-8x300/100 Z	0.0665
2363536	S-WWP-S-8x320/100 Z	0.0707
2363537	S-WWP-S-8x340/100 Z	0.0748
2363538	S-WWP-S-8x360/100 Z	0.0789
2363539	S-WWP-S-8x380/100 Z	0.083
2363540	S-WWP-S-8x400/100 Z	0.0871
2372406	S-WWP-S-8x500/100 Z	0.1077
2372407	S-WWP-S-8x580/100 Z	0.2489
2363541	S-WWP-S-10x140/80 Z	0.0518

Item number	Item designation	Weight [kg]
2363542	S-WWP-S-10x160/80 Z	0.0577
2363543	S-WWP-S-10x180/100 Z	0.0637
2363544	S-WWP-S-10x200/100 Z	0.0696
2363545	S-WWP-S-10x220/100 Z	0.0756
2363546	S-WWP-S-10x240/100 Z	0.0816
2363547	S-WWP-S-10x260/100 Z	0.0875
2363548	S-WWP-S-10x280/100 Z	0.0935
2363549	S-WWP-S-10x300/100 Z	0.0994
2363550	S-WWP-S-10x320/100 Z	0.1054
2363551	S-WWP-S-10x340/100 Z	0.1114
2363552	S-WWP-S-10x360/100 Z	0.1173
2363553	S-WWP-S-10x380/100 Z	0.1233
2363554	S-WWP-S-10x400/100 Z	0.1292
2372408	S-WWP-S-10x500/100 Z	0.159
2372409	S-WWP-S-10x580/100 Z	0.1825
2363555	S-WCP-S-5x40/25 Z	0.0037
2363556	S-WCP-S-5x50/30 Z	0.0045
2363557	S-WCP-S-5x60/40 Z	0.0052
2363558	S-WCP-S-5x70/40 Z	0.0059
2363559	S-WCP-S-5x80/50 Z	0.0068
2363620	S-WCP-S-5x90/50 Z	0.0076
2363621	S-WCP-S-5x100/60 Z	0.0084
2363622	S-WCP-S-6x50/30 Z	0.0067
2363623	S-WCP-S-6x60/40 Z	0.0078
2363624	S-WCP-S-6x70/40 Z	0.009
2363625	S-WCP-S-6x80/50 Z	0.0102
2363626	S-WCP-S-6x90/50 Z	0.0114
2363627	S-WCP-S-6x100/60 Z	0.0123
2363628	S-WCP-S-6x110/60 Z	0.0137
2363629	S-WCP-S-6x120/70 Z	0.0149
2363630	S-WCP-S-6x130/70 Z	0.016

Item number	Item designation	Weight [kg]
2363631	S-WCP-S-6x140/70 Z	0.0172
2363632	S-WCP-S-6x150/70 Z	0.0184
2363633	S-WCP-S-6x160/70 Z	0.0195
2363634	S-WCP-S-6x180/70 Z	0.0219
2363635	S-WCP-S-8x80/50 Z	0.0185
2363636	S-WCP-S-8x90/50 Z	0.0201
2363637	S-WCP-S-8x100/60 Z	0.0219
2363638	S-WCP-S-8x120/80 Z	0.0273
2363639	S-WCP-S-8x140/80 Z	0.0314
2363640	S-WCP-S-8x160/80 Z	0.0355
2363641	S-WCP-S-8x180/100 Z	0.0396
2363642	S-WCP-S-8x200/100 Z	0.0437
2363643	S-WCP-S-8x220/100 Z	0.0478
2363644	S-WCP-S-8x240/100 Z	0.0519
2363645	S-WCP-S-8x260/100 Z	0.056
2363646	S-WCP-S-8x280/100 Z	0.0601
2363647	S-WCP-S-8x300/100 Z	0.0642
2363648	S-WCP-S-8x320/100 Z	0.0683
2363649	S-WCP-S-8x340/100 Z	0.0724
2363650	S-WCP-S-8x360/100 Z	0.0765
2363651	S-WCP-S-8x380/100 Z	0.0806
2363652	S-WCP-S-8x400/100 Z	0.0847
2363653	S-WCP-S-10x160/80 Z	0.0522
2363654	S-WCP-S-10x180/100 Z	0.0581
2363655	S-WCP-S-10x200/100 Z	0.0625
2363656	S-WCP-S-10x220/100 Z	0.07
2363657	S-WCP-S-10x240/100 Z	0.0759
2363658	S-WCP-S-10x260/100 Z	0.0819
2363659	S-WCP-S-10x280/100 Z	0.0878
2363660	S-WCP-S-10x300/100 Z	0.0937
2363661	S-WCP-S-10x320/100 Z	0.0997

Item number	Item designation	Weight [kg]
2363662	S-WCP-S-10x340/100 Z	0.1056
2363663	S-WCP-S-10x360/100 Z	0.1116
2363664	S-WCP-S-10x380/100 Z	0.1175
2363665	S-WCP-S-10x400/100 Z	0.1234
2363666	S-WDF-S-12x60/48 Z	0.0336
2363667	S-WDF-S-12x80/68 Z	0.039
2363668	S-WDF-S-12x100/85 Z	0.056
2363669	S-WDF-S-12x120/105 Z	0.061
2363670	S-WDF-S-12x160/145 Z	0.0696