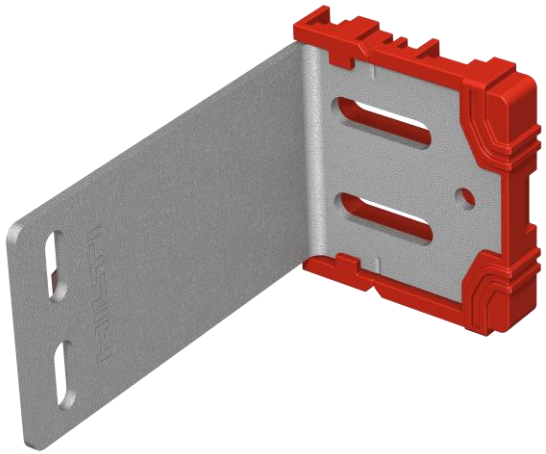
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

MFT-VSI
Hilti AG



EPD HUB, HUB-2678
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Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Hilti AG
Address	Feldkircherstrasse 100, 9494 Schaan, Principality of Liechtenstein
Contact details	Sustainability@Hilti.com
Website	www.hilti.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	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	Hilti AG
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

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	MFT-VSI
Additional labels	See annex I
Product reference	MFT-VSI 60 S 6.5
Place of production	Czech Republic, Central Bohemian Region
Period for data	2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	+2.61 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	The declared unit is 1kg of MFT-VSI bracket
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4,21E+00
GWP-total, A1-A3 ($kgCO_2e$)	4,12E+00
Secondary material, inputs (%)	11.9
Secondary material, outputs (%)	79.8
Total energy use, A1-A3 (kWh)	8.45
Net freshwater use, A1-A3 (m^3)	0.21

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

This document relates to the MFT-VSI 60 S 6.5 as a representative smallest product for the MFT-VSI portfolio. The MFT-VSI products cover the same applications and are similar in material constitution and have therefore been summarized in this EPD.

The MFT-VSI is a duplex steel substructure bracket equipped with a support clip and a pre-assembled polypropylene isolator. These brackets are used to secure ventilated façade substructures to various primary structures, such as concrete, masonry, steel frames, and wood. They are attached to primary structures using anchors or screws. Functioning as helping hand brackets, they enable the installation of vertical support rails, which provide the structural foundation for façade cladding. The vertical profiles are secured to the brackets using screws. To accommodate thermal expansion of the vertical profiles, the brackets are designed with fixed and/or flexible points. The brackets are compatible with all types of façades cladding materials, offering versatility in construction. They are available in different sizes (large, medium, small) and lengths ranging from 60 to 300 mm.

The product complies with the CPR based on a harmonized European standard (hEN). For placing the product on the market in the European Union (EU) or European Free Trade Association (EFTA) countries (with the exception of Switzerland), Regulation (EU) No. 305/2011 (CPR) applies. The performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to EN 1090- 1:2009+A1:2011 Standard for execution of steel structures and aluminium structures. The product is CE marked accordingly. The structural parts made of stainless steel correspond to following harmonized standards: EN 1090-1, EN 10088-4, EN 1993-1-4 incl national annexes, DIN 18516-1. The raw material used to produce this product is steel alloy according to the standards EN 10088-1, EN 10151.

Further information can be found at www.hilti.group

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	91.61178443	Europe
Minerals	-	-
Fossil materials	8.388215568	Europe
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	
Biogenic carbon content in packaging, kg C	0.026853558

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	The declared unit is 1kg of MFT-VSI bracket
Mass per declared unit	1 kg
Functional unit	
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
×	×	×	×	×	ND	ND	ND	ND	ND	ND	ND	×	×	×	×	×		
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. 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 MFT-VSI bracket consist of bracket body, clip and isolator. The bracket is made of duplex steel, the clip is made of spring steel and isolator is from polypropylene. The cold rolled duplex steel is produced in Finland and transported by ferry to Estonia and later to Czech Republic by lorry. The raw material for the isolator is coming from Belgium to Austria, where the isolator is injection moulded. The spring steel is produced in Germany and delivered to Austria, where the initial cold forming occurs. It later transported to Czech Republic together with isolator. The manufacturing of the bracket is done in Czech Republic, where the bracket body is bent to the required shape. The required geometry of the slots is achieved with stamping process. The manufacturing process requires electricity as well lubrication oils to prevent the wear of the machines. The final product is assembled and packed in the same factory. The loss of material which occurs during the manufacturing is considered. The steel waste, which occurs during the manufacturing process, goes for recycling. The cardboards are used as packaging material, in addition, the wooden pallets are used for transportation of the product.

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 average distance from the manufacturing facility to the building site is approximated as 500 km, the transportation method is assumed to be lorry. Since the impact of the transportation on the results is low, it is assumed that lorries will be fully loaded. The transportation does not cause any loss of material. It is assumed that 0.03336 kWh of energy per declared unit is used during the installation phase, additional materials, which are needed for installation are accounted in A4. The installation waste consists of wooden pallets and packing cardboards. It is assumed that the wooden pallets are incinerated, while 82% of the cardboard are recycled, 9% incinerated and 9% are landfilled. Waste treatment facilities are assumed to be at the distance of 50 km.

PRODUCT USE AND MAINTENANCE (B1-B7)

No emissions during lifecycle.

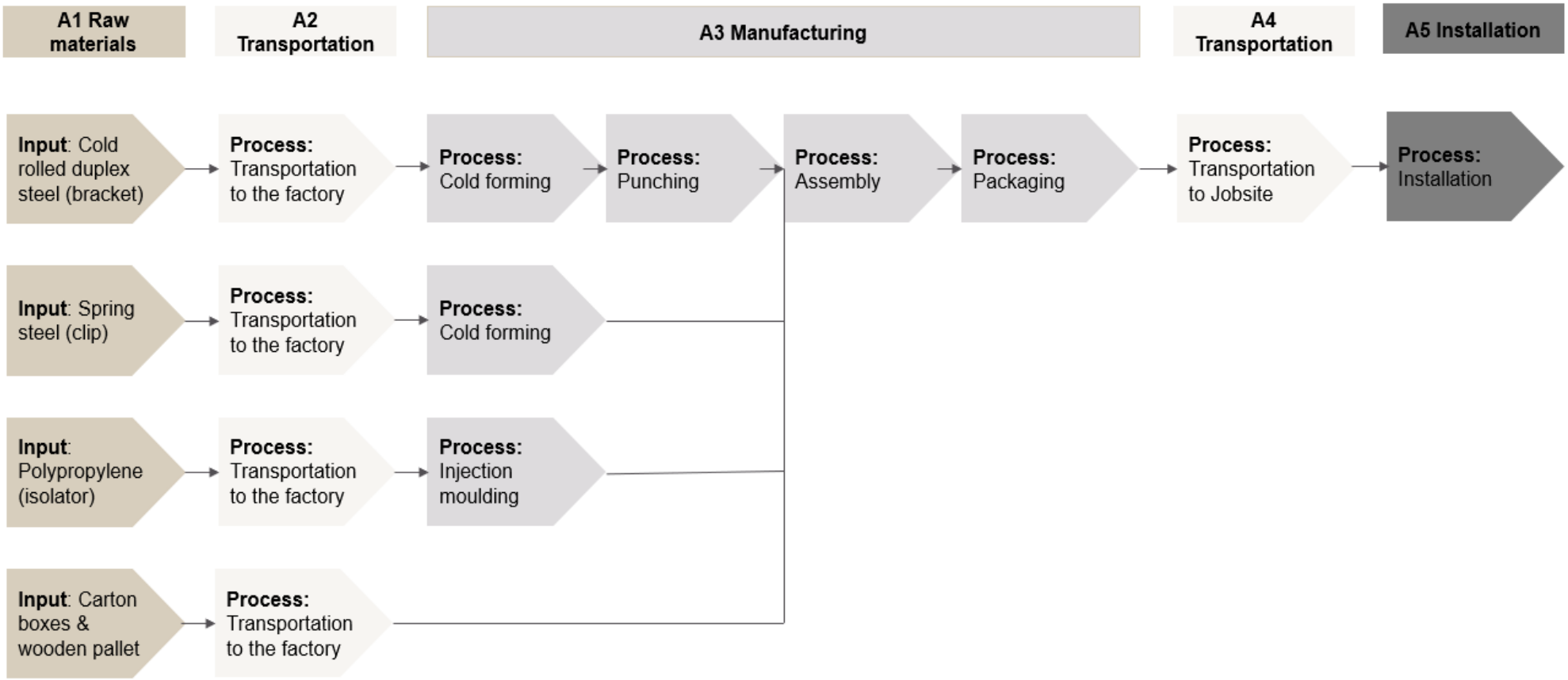
Air, soil, and water impacts during the use phase have not been studied.

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. The energy for uninstallation is assumed to be the same as for installation. It is assumed that 100% of waste is collected and sent to the treatment centre, the transportation distance to the treatment facility is approximated to 50 km. It is assumed that 15% of the metal part of the product will be placed in the land field, while 85% will be recycled. For following scenario is assumed for the PP isolator: 50% is incinerated, 27% is landfilled, 23% is recycled.

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	+2.61 %

This document relates to the MFT-VSI 60 S 6.5 as a representative smallest product for the MFT-VSI portfolio. The MFT-VSI products cover the same applications and are similar in material constitution and have therefore been summarized in this EPD. The whole portfolio range is available in the Annex I.

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, EF3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3,26E+00	5,60E-02	7,99E-01	4,12E+00	4,96E-02	1,36E+00	ND	ND	ND	ND	ND	ND	ND	2,44E-02	8,35E-03	1,29E-01	3,38E-03	-1,97E-01
GWP – fossil	kg CO_2e	3,26E+00	5,60E-02	8,97E-01	4,21E+00	4,96E-02	1,26E+00	ND	ND	ND	ND	ND	ND	ND	2,44E-02	8,35E-03	1,29E-01	3,38E-03	-1,95E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-9,84E-02	-9,84E-02	0,00E+00	9,84E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,19E-03
GWP – LULUC	kg CO_2e	3,15E-03	2,30E-05	1,15E-03	4,32E-03	1,78E-05	1,25E-03	ND	ND	ND	ND	ND	ND	ND	5,12E-05	3,39E-06	2,87E-05	9,55E-07	2,00E-05
Ozone depletion pot.	kg CFC_{-11}e	6,86E-05	1,29E-08	2,00E-08	6,87E-05	1,18E-08	6,50E-08	ND	ND	ND	ND	ND	ND	ND	8,22E-10	1,84E-09	2,31E-09	3,66E-10	-5,57E-09
Acidification potential	mol H^+e	9,68E-03	4,99E-04	3,97E-03	1,41E-02	2,07E-04	7,06E-03	ND	ND	ND	ND	ND	ND	ND	1,24E-04	3,46E-05	2,50E-04	8,98E-06	-9,69E-04
EP-freshwater[2)]	kg Pe	7,54E-04	3,66E-07	1,46E-04	9,00E-04	3,40E-07	4,70E-05	ND	ND	ND	ND	ND	ND	ND	1,28E-06	7,03E-08	9,26E-07	1,20E-08	-4,47E-06
EP-marine	kg Ne	2,11E-03	1,35E-04	7,12E-04	2,96E-03	6,27E-05	1,19E-03	ND	ND	ND	ND	ND	ND	ND	2,09E-05	1,01E-05	5,74E-05	5,80E-06	-7,18E-05
EP-terrestrial	mol Ne	2,49E-02	1,49E-03	7,05E-03	3,35E-02	6,91E-04	1,34E-02	ND	ND	ND	ND	ND	ND	ND	2,33E-04	1,11E-04	6,53E-04	3,38E-05	-1,99E-03
POCP ("smog")[3)]	kg NMVOCe	7,51E-03	4,25E-04	1,86E-03	9,79E-03	2,22E-04	4,26E-03	ND	ND	ND	ND	ND	ND	ND	6,29E-05	3,40E-05	1,78E-04	1,04E-05	-9,17E-04
ADP-minerals & metals[4)]	kg Sbe	2,38E-04	1,21E-07	4,36E-06	2,43E-04	1,16E-07	3,18E-05	ND	ND	ND	ND	ND	ND	ND	1,14E-07	2,86E-08	2,32E-06	2,53E-09	-3,92E-06
ADP-fossil resources	MJ	2,20E+01	8,27E-01	1,29E+01	3,58E+01	7,59E-01	1,41E+01	ND	ND	ND	ND	ND	ND	ND	3,17E-01	1,21E-01	2,60E-01	2,55E-02	-1,88E+00
Water use[5)]	m^3e depr.	1,97E+00	3,58E-03	6,90E-01	2,67E+00	3,50E-03	4,00E-01	ND	ND	ND	ND	ND	ND	ND	6,67E-03	5,30E-04	8,06E-03	9,90E-05	3,13E-02

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, EF3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,37E-08	5,74E-09	1,23E-08	3,17E-08	5,83E-09	9,91E-08	ND	ND	ND	ND	ND	ND	ND	9,40E-10	7,22E-10	4,00E-09	1,78E-10	-1,27E-08
Ionizing radiation[6]	kBq U235e	5,82E-02	4,13E-03	2,71E-01	3,33E-01	3,91E-03	8,80E-02	ND	ND	ND	ND	ND	ND	ND	3,55E-03	5,63E-04	1,52E-03	1,18E-04	-1,06E-02
Ecotoxicity (freshwater)	CTUe	3,28E+01	6,76E-01	7,77E+00	4,12E+01	6,31E-01	3,92E+01	ND	ND	ND	ND	ND	ND	ND	4,81E-01	1,11E-01	1,22E+00	2,51E-02	-4,98E+00
Human toxicity, cancer	CTUh	1,37E-07	2,08E-11	3,20E-10	1,37E-07	1,66E-11	2,63E-08	ND	ND	ND	ND	ND	ND	ND	7,35E-12	3,11E-12	4,56E-11	5,18E-13	1,22E-09
Human tox. non-cancer	CTUh	3,22E-08	6,73E-10	9,23E-09	4,21E-08	6,68E-10	3,05E-08	ND	ND	ND	ND	ND	ND	ND	2,72E-10	1,04E-10	1,65E-09	1,36E-11	6,90E-09
SQP[7]	-	1,57E+00	8,41E-01	4,22E+00	6,63E+00	8,85E-01	6,87E+00	ND	ND	ND	ND	ND	ND	ND	5,14E-02	8,65E-02	5,01E-01	5,59E-02	-7,95E-01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8]	MJ	1,22E+00	9,66E-03	1,25E+00	2,48E+00	9,83E-03	3,02E+00	ND	ND	ND	ND	ND	ND	ND	4,12E-02	1,42E-03	3,82E-02	2,91E-04	-2,75E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	8,49E-01	8,49E-01	0,00E+00	-8,49E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,82E-02
Total use of renew. PER	MJ	1,22E+00	9,66E-03	2,10E+00	3,33E+00	9,83E-03	2,17E+00	ND	ND	ND	ND	ND	ND	ND	4,12E-02	1,42E-03	3,82E-02	2,91E-04	-2,57E-01
Non-re. PER as energy	MJ	1,42E+01	8,27E-01	1,29E+01	2,79E+01	7,59E-01	1,41E+01	ND	ND	ND	ND	ND	ND	ND	3,17E-01	1,21E-01	2,60E-01	2,55E-02	-1,88E+00
Non-re. PER as material	MJ	1,93E+00	0,00E+00	9,38E-03	1,93E+00	0,00E+00	-9,38E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-1,41E+00	-5,20E-01	6,33E-01
Total use of non-re. PER	MJ	1,61E+01	8,27E-01	1,29E+01	2,99E+01	7,59E-01	1,41E+01	ND	ND	ND	ND	ND	ND	ND	3,17E-01	1,21E-01	-1,15E+00	-4,94E-01	-1,24E+00
Secondary materials	kg	1,19E-01	2,48E-04	6,31E-02	1,83E-01	2,14E-04	1,31E-01	ND	ND	ND	ND	ND	ND	ND	2,92E-05	3,95E-05	3,35E-04	6,17E-06	8,55E-02
Renew. secondary fuels	MJ	1,34E-03	1,96E-06	5,93E-03	7,27E-03	1,89E-06	3,37E-04	ND	ND	ND	ND	ND	ND	ND	2,03E-07	5,07E-07	1,37E-05	1,86E-07	-1,17E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,85E-01	1,01E-04	2,03E-02	2,06E-01	1,01E-04	1,23E-02	ND	ND	ND	ND	ND	ND	ND	1,87E-04	1,44E-05	1,30E-04	2,78E-05	-3,97E-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	7,22E-01	9,55E-04	3,02E-02	7,53E-01	8,14E-04	1,14E+00	ND	ND	ND	ND	ND	ND	ND	2,05E-03	1,74E-04	2,03E-03	0,00E+00	-8,01E-02
Non-hazardous waste	kg	1,23E+00	1,50E-02	6,66E+00	7,90E+00	1,42E-02	2,06E+00	ND	ND	ND	ND	ND	ND	ND	5,49E-02	2,78E-03	9,05E-02	1,60E-01	-3,99E-01
Radioactive waste	kg	1,69E-04	5,69E-06	6,75E-05	2,42E-04	5,23E-06	3,63E-05	ND	ND	ND	ND	ND	ND	ND	9,78E-07	8,00E-07	1,09E-06	0,00E+00	-3,51E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,19E-03	0,00E+00	6,59E-02	6,71E-02	0,00E+00	5,20E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	7,98E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	2,08E-07	0,00E+00	0,00E+00	2,08E-07	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,23E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,22E-01	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3,26E+00	5,60E-02	8,98E-01	4,22E+00	4,96E-02	1,26E+00	ND	ND	ND	ND	ND	ND	ND	2,44E-02	8,35E-03	1,29E-01	3,38E-03	-1,95E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

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
24.01.2025

ANNEX I: PORTFOLIO INCLUDED 1/3

Item no	Item name	Weight per item [kg]
2445502	MFT-VS 54 S 6.5	0.08693
2445492	MFT-VS 74 S 6.5	0.11127
2445474	MFT-VS 94 S 6.5	0.13052
2445484	MFT-VS 114 S 6.5	0.14977
2445485	MFT-VS 134 S 6.5	0.16902
2445475	MFT-VS 154 S 6.5	0.18827
2445476	MFT-VS 174 S 6.5	0.20752
2445503	MFT-VS 194 S 6.5	0.22677
2445486	MFT-VS 214 S 6.5	0.24602
2445493	MFT-VS 234 S 6.5	0.26527
2445477	MFT-VS 254 S 6.5	0.28452
2445494	MFT-VS 274 S 6.5	0.30377
2445495	MFT-VS 294 S 6.5	0.32302
2445478	MFT-VS 54 S 11	0.08868
2445504	MFT-VS 74 S 11	0.11302
2445479	MFT-VS 94 S 11	0.13227
2445505	MFT-VS 114 S 11	0.15152
2445506	MFT-VS 134 S 11	0.17077
2445496	MFT-VS 154 S 11	0.19002
2445507	MFT-VS 174 S 11	0.20927
2445508	MFT-VS 194 S 11	0.22852
2445487	MFT-VS 214 S 11	0.24777
2446060	MFT-VS 234 S 11	0.26702
2446061	MFT-VS 254 S 11	0.28627
2445509	MFT-VS 274 S 11	0.30552
2446062	MFT-VS 294 S 11	0.32477

Item no	Item name	Weight per item [kg]
2445497	MFT-VS 54 M 6.5/11	0.12986
2445498	MFT-VS 74 M 6.5/11	0.16382
2445488	MFT-VS 94 M 6.5/11	0.19270
2445499	MFT-VS 114 M 6.5/11	0.22157
2445489	MFT-VS 134 M 6.5/11	0.22261
2446070	MFT-VS 154 M 6.5/11	0.25148
2446063	MFT-VS 174 M 6.5/11	0.28036
2446080	MFT-VS 194 M 6.5/11	0.30923
2446064	MFT-VS 214 M 6.5/11	0.33811
2446090	MFT-VS 234 M 6.5/11	0.36698
2446071	MFT-VS 254 M 6.5/11	0.39586
2446081	MFT-VS 274 M 6.5/11	0.42473
2446082	MFT-VS 294 M 6.5/11	0.45361
2446072	MFT-VS 54 L 6.5/11	0.24553
2446091	MFT-VS 74 L 6.5/11	0.30961
2446092	MFT-VS 94 L 6.5/11	0.36351
2446083	MFT-VS 114 L 6.5/11	0.41741
2446084	MFT-VS 134 L 6.5/11	0.41562
2446093	MFT-VS 154 L 6.5/11	0.46952
2446073	MFT-VS 174 L 6.5/11	0.52342
2446074	MFT-VS 194 L 6.5/11	0.57732
2446085	MFT-VS 214 L 6.5/11	0.63122
2446086	MFT-VS 234 L 6.5/11	0.68512
2446094	MFT-VS 254 L 6.5/11	0.73902
2446095	MFT-VS 274 L 6.5/11	0.79292
2446075	MFT-VS 294 L 6.5/11	0.84682

ANNEX I: PORTFOLIO INCLUDED 2/3

Item no	Item name	Weight per item [kg]
2446065	MFT-VSI 60 S 6.5	0.09489
2446096	MFT-VSI 80 S 6.5	0.11923
2446087	MFT-VSI 100 S 6.5	0.13848
2446076	MFT-VSI 120 S 6.5	0.15773
2446077	MFT-VSI 140 S 6.5	0.17698
2446088	MFT-VSI 160 S 6.5	0.19623
2446067	MFT-VSI 180 S 6.5	0.21548
2446066	MFT-VSI 200 S 6.5	0.23473
2446078	MFT-VSI 220 S 6.5	0.25398
2446089	MFT-VSI 240 S 6.5	0.27323
2446079	MFT-VSI 260 S 6.5	0.29248
2446097	MFT-VSI 280 S 6.5	0.31173
2446098	MFT-VSI 300 S 6.5	0.33098
2446099	MFT-VSI 60 S 11	0.09664
2446100	MFT-VSI 80 S 11	0.12098
2446101	MFT-VSI 100 S 11	0.14023
2446110	MFT-VSI 120 S 11	0.15948
2446120	MFT-VSI 140 S 11	0.17873
2446111	MFT-VSI 160 S 11	0.19798
2446121	MFT-VSI 180 S 11	0.21723
2446112	MFT-VSI 200 S 11	0.23648
2446113	MFT-VSI 220 S 11	0.25573
2446068	MFT-VSI 240 S 11	0.27498
2446114	MFT-VSI 260 S 11	0.29423
2446115	MFT-VSI 280 S 11	0.31348
2446116	MFT-VSI 300 S 11	0.33273

Item no	Item name	Weight per item [kg]
2446117	MFT-VSI 60 M 6.5/11	0.14106
2446122	MFT-VSI 80 M 6.5/11	0.17502
2446123	MFT-VSI 100 M 6.5/11	0.20390
2446102	MFT-VSI 120 M 6.5/11	0.23277
2446069	MFT-VSI 140 M 6.5/11	0.23380
2446124	MFT-VSI 160 M 6.5/11	0.26268
2446130	MFT-VSI 180 M 6.5/11	0.29155
2446131	MFT-VSI 200 M 6.5/11	0.32043
2446103	MFT-VSI 220 M 6.5/11	0.34930
2446118	MFT-VSI 240 M 6.5/11	0.37818
2446104	MFT-VSI 260 M 6.5/11	0.40705
2446105	MFT-VSI 280 M 6.5/11	0.43593
2446106	MFT-VSI 300 M 6.5/11	0.46480
2446132	MFT-VSI 60 L 6.5/11	0.26443
2446119	MFT-VSI 80 L 6.5/11	0.32851
2446125	MFT-VSI 100 L 6.5/11	0.38241
2446133	MFT-VSI 120 L 6.5/11	0.43631
2446140	MFT-VSI 140 L 6.5/11	0.43452
2446107	MFT-VSI 160 L 6.5/11	0.48842
2446134	MFT-VSI 180 L 6.5/11	0.54232
2446108	MFT-VSI 200 L 6.5/11	0.59622
2446135	MFT-VSI 220 L 6.5/11	0.65012
2446109	MFT-VSI 240 L 6.5/11	0.70402
2446136	MFT-VSI 260 L 6.5/11	0.75792
2446137	MFT-VSI 280 L 6.5/11	0.81182
2446150	MFT-VSI 300 L 6.5/11	0.86572

ANNEX I: PORTFOLIO INCLUDED 3/3

Item no	Item name	Weight per item [kg]
2480572	MFT-VSI 60 S 7.6	0.09953
2480566	MFT-VSI 80 S 7.6	0.12387
2480567	MFT-VSI 100 S 7.6	0.14312
2480568	MFT-VSI 120 S 7.6	0.16237
2480584	MFT-VSI 140 S 7.6	0.18162
2480596	MFT-VSI 160 S 7.6	0.20087
2480557	MFT-VSI 180 S 7.6	0.22012
2480597	MFT-VSI 200 S 7.6	0.23937
2480598	MFT-VSI 220 S 7.6	0.25862
2480585	MFT-VSI 240 S 7.6	0.27787
2480569	MFT-VSI 260 S 7.6	0.29712
2480573	MFT-VSI 280 S 7.6	0.31637
2480586	MFT-VSI 300 S 7.6	0.33562
2480558	MFT-VSI 60 M 7.6	0.14825
2480574	MFT-VSI 80 M 7.6	0.18221
2480587	MFT-VSI 100 M 7.6	0.21109
2480559	MFT-VSI 120 M 7.6	0.23996
2480610	MFT-VSI 140 M 7.6	0.24099
2480588	MFT-VSI 160 M 7.6	0.26987
2480611	MFT-VSI 180 M 7.6	0.29874
2480599	MFT-VSI 200 M 7.6	0.32762
2480620	MFT-VSI 220 M 7.6	0.35649
2480621	MFT-VSI 240 M 7.6	0.38537
2480575	MFT-VSI 260 M 7.6	0.41424
2480576	MFT-VSI 280 M 7.6	0.44312
2480612	MFT-VSI 300 M 7.6	0.47199

Item no	Item name	Weight per item [kg]
2480630	MFT-VSI 60 L 7.6	0.27752
2480631	MFT-VSI 80 L 7.6	0.34159
2480613	MFT-VSI 100 L 7.6	0.39549
2480622	MFT-VSI 120 L 7.6	0.44939
2480614	MFT-VSI 140 L 7.6	0.44761
2480615	MFT-VSI 160 L 7.6	0.50151
2480632	MFT-VSI 180 L 7.6	0.55541
2480589	MFT-VSI 200 L 7.6	0.60931
2480577	MFT-VSI 220 L 7.6	0.66321
2480640	MFT-VSI 240 L 7.6	0.71711
2480641	MFT-VSI 260 L 7.6	0.77101
2480578	MFT-VSI 280 L 7.6	0.82491
2480642	MFT-VSI 300 L 7.6	0.87881