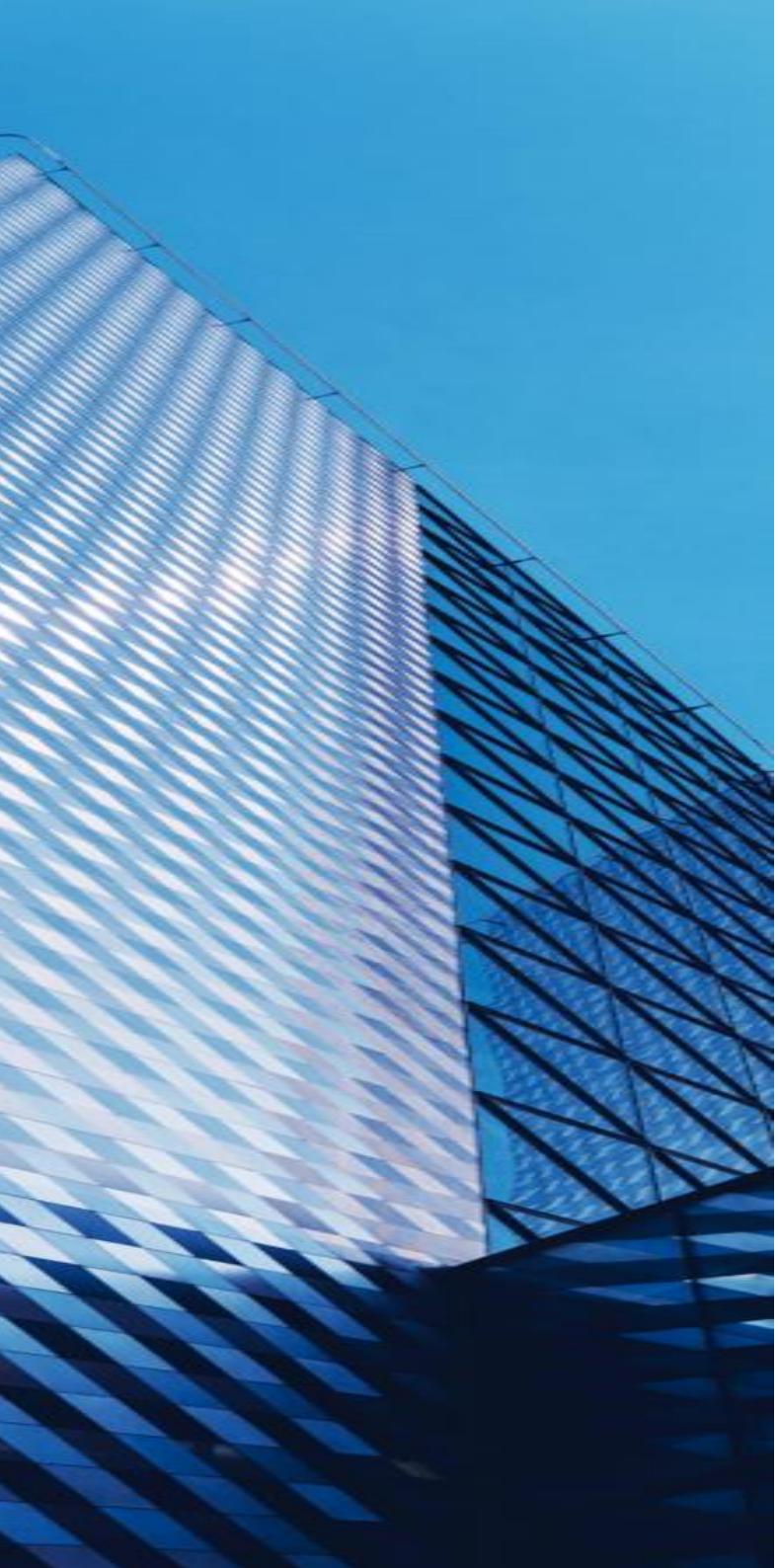


ENVIRONMENTAL PRODUCT DECLARATION

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

PETRA Green
Peikko Group Corporation

EPD HUB, HUB-1230
Published on 12.03.2024, last updated on 12.03.2024, valid until 12.03.2029.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Peikko Group Corporation
Address	Voimakatu 3, 15170 Lahti
Contact details	Jaakko.Yrjola@peikko.com
Website	www.peikko.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 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Solomon Dedua
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Elma Avdyli, 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	PETRA Green
Additional labels	
Product reference	
Place of production	Lahti, Finland
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1kg of Petra Green
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	1,85E+00
GWP-total, A1-A3 (kgCO2e)	1,82E+00
Secondary material, inputs (%)	97.0
Secondary material, outputs (%)	95.0
Total energy use, A1-A3 (kWh)	7.91
Total water use, A1-A3 (m3e)	2,20E-02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Peikko Group Corporation is a leading global supplier of slim floor structures, wind energy applications and connection technology for precast and cast-in-situ construction. Peikko's innovative solutions offer a faster, safer, and more sustainable way to design and build.

PRODUCT DESCRIPTION

PETRA® Green is a slab Hanger made of steel and used to support hollow-core slabs and make openings and configurations into hollow-core slab floors. PETRA® Green is a unique technical solution that has all the benefits of a standardized product, while being used for applications that usually require careful static analyses and tailor-made structural solutions.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	100	
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	0.117

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1kg of Petra Green
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		
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 environmental impacts relating to the manufacture and packaging stage (A1-A3) of PETRA Green include emissions from all integrated processes associated with upstream and midstream stages.

The upstream (A1-A2) sections take into account all direct and indirect environment-impacting activities in the cradle-to-gate chain for the raw material. Impacts reported here relate to raw material extraction, manufacture, and transportation to the industrial facility for processing. The considered transportation impacts include exhaust emissions resulting from the transport of all raw materials from suppliers to Peikko Finland production plant as well as the environmental impacts of production of the used diesel.

This section also covers all environmental burdens in processes associated with manufacture and transportation of secondary materials to the manufacturer. Such materials include welding filler, paint and packaging wood. Maintenance and disposal of the vehicles as well as tire and road wear during transportation have also been included. The transportation distances and methods were provided by Peikko Finland Oy.

The midstream (A3) section contains declarations relating to the actual manufacturing process for PETRA Green and its storage before delivery. Emissions stemming from electricity and heat production, which are consumed during the manufacturing at the factory, are accounted for. Secondary materials used in the manufacturing process (welding gases, machine lubricants, blasting steel shots, etc.) and fuels used by machines, as well as handling of waste formed in the production processes at the factory are included here. The environmental impacts of this stage are calculated on the basis of factory data provided by Peikko Finland Oy.

77.4% of the steel used in the production of Petra green is sourced from recycled steel and the remaining 23% from virgin steel. Of the steel raw material used to produce PETRA Green, 26.3% has 20% recycled content (see SSAB EPD attached, p6, ch. 4.1), 65.6% has 98% recycled content (see Stomana EPD, p.15, Duferco EPD p.3 and Habas EPD p.5 all attached), and 8.1% has 97% recycled steel (0.2*0.263+0.98*0.656+0.081*0.97 = 0.774). Ancillary materials are materials that become part of the final product, such as the weld and the paint. Materials used in the manufacturing process, such as welding gas, hydraulic, acetylene, and argon are listed under manufacturing.

The electricity used in the manufacturing process of Petra Green comes from wind energy. Energy for heating the factory comes from district heating, where biofuel and recycled fuel are used. The total weight of steel required to produce one kilogram of Petra Green is 1.1382kg. The left-over of 0.1382kg is sold to a recycling company, where all the recyclable part (88%) is recycled and the slag (or non-recyclable 11.5%) is taken to the landfill. The wood pallet used for transporting the product is incinerated for heat production.

The ancillary materials are bought from various locations in Finland. The average distance has been conservatively set at 90km.

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.

Transportation of PETRA Green from the Peikko manufacturing plant for delivery to the construction site falls within the downstream (A4-A5) phase of the product life cycle. Here, emissions stemming from use of fuel in the loading, transportation, and offloading, as well as various maintenances relating loading and transportation are accounted for. The transportation distance for delivery uses the farthest distance from Lahti, where the Peikko factory is located, to the farthest delivery location in the Finnish Capital Area. The transportation distance is estimated to be 150km and the medium of transportation are freight trucks. The product is installed whole. As such, there is no installation waste. The unit pallet is treated in A5.

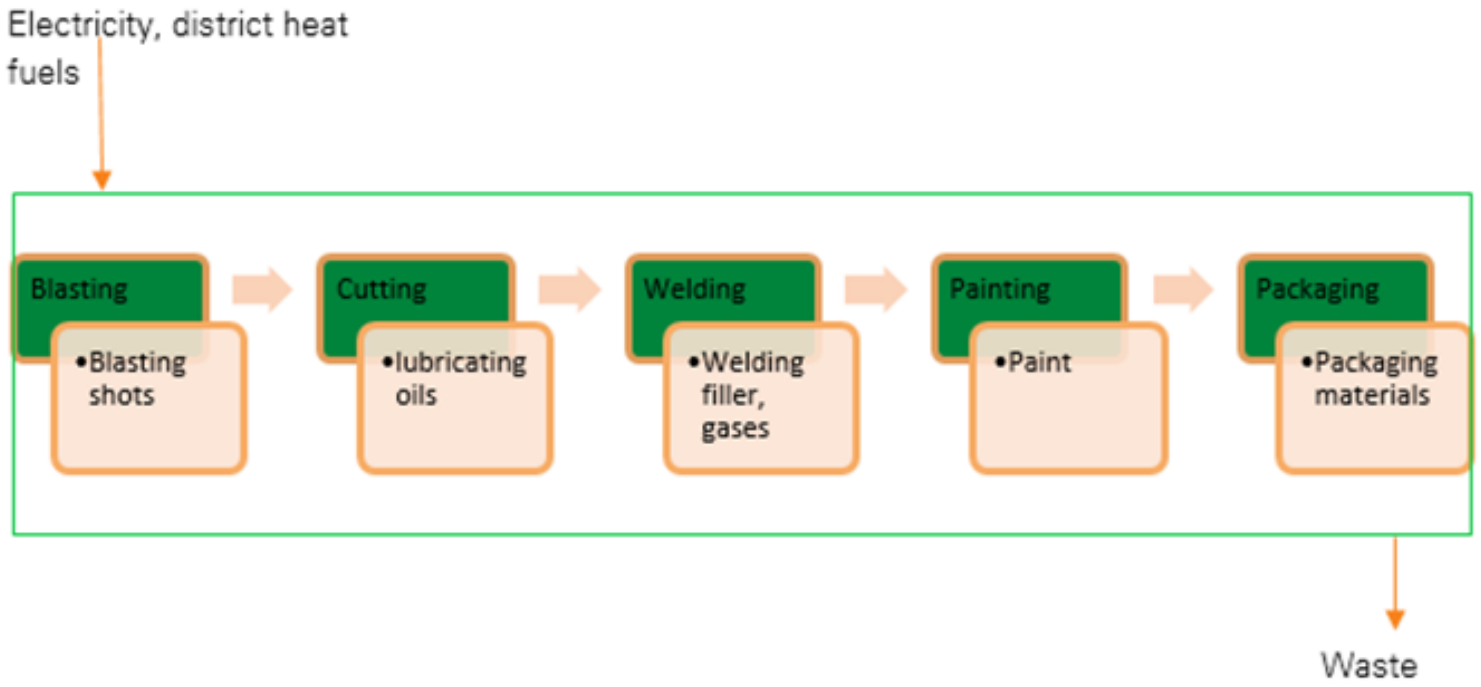
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The environmental impact for the end-of-life stage for PETRA Green includes those from energy used in deconstruction or demolition, transportation to a waste processing facility, waste processing for reuse or recycling, and disposal. Demolition is assumed to take 0.01 kWh/kg of element. It is assumed that 100% of waste is collected. Distance for transportation to a treatment plant is assumed to be 50 km and the transportation method is assumed to be lorry. This is an average distance which considers the fact that according to the scenario A4 products are situated in Finland and distance to recycling and landfill is not very long. About 95% of the product is assumed to be recycled based on World Steel Association, 2020. It is assumed that 5% of the product is non-recyclable and is therefore taken to a landfill for final disposal. Since 77.4% of the steel used for PETRA Green is from recycled scrap, only benefits from the remaining 23% are taken in the End-of-Life stage.

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	Allocated by mass or volume
Packaging materials	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	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	%

This EPD is product and factory specific and does not contain average calculations.

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_2e	1,15E+00	6,11E-01	5,62E-02	1,82E+00	1,40E-02	4,36E-02	MND	MND	MND	MND	MND	MND	MND	9,20E-04	4,70E-03	5,74E-02	2,64E-04	-6,96E-01
GWP – fossil	kg CO_2e	1,14E+00	6,11E-01	9,90E-02	1,85E+00	1,40E-02	4,88E-04	MND	MND	MND	MND	MND	MND	MND	9,19E-04	4,69E-03	5,73E-02	2,63E-04	-6,96E-01
GWP – biogenic	kg CO_2e	2,27E-03	2,45E-04	-4,30E-02	-4,05E-02	0,00E+00	4,31E-02	MND	MND	MND	MND	MND	MND	MND	1,68E-07	1,81E-06	1,86E-05	1,72E-07	-2,52E-04
GWP – LULUC	kg CO_2e	9,79E-04	2,27E-04	1,07E-04	1,31E-03	5,04E-06	1,60E-07	MND	MND	MND	MND	MND	MND	MND	9,15E-08	1,73E-06	1,09E-05	2,49E-07	-1,78E-04
Ozone depletion pot.	kg CFC_{-11}e	6,65E-08	1,47E-07	1,37E-08	2,27E-07	3,35E-09	3,84E-11	MND	MND	MND	MND	MND	MND	MND	1,97E-10	1,08E-09	1,18E-08	1,07E-10	-2,84E-08
Acidification potential	mol H^+e	4,63E-03	2,25E-03	3,90E-04	7,28E-03	5,85E-05	5,04E-06	MND	MND	MND	MND	MND	MND	MND	9,55E-06	1,99E-05	5,82E-04	2,48E-06	-2,66E-03
EP-freshwater[2)]	kg Pe	5,51E-05	4,67E-06	2,77E-06	6,26E-05	9,60E-08	6,47E-09	MND	MND	MND	MND	MND	MND	MND	3,05E-09	3,84E-08	3,18E-07	2,76E-09	-3,06E-05
EP-marine	kg Ne	9,45E-04	5,93E-04	8,79E-05	1,63E-03	1,77E-05	2,36E-06	MND	MND	MND	MND	MND	MND	MND	4,23E-06	5,90E-06	2,54E-04	8,57E-07	-5,60E-04
EP-terrestrial	mol Ne	1,05E-02	6,55E-03	9,74E-04	1,80E-02	1,95E-04	2,52E-05	MND	MND	MND	MND	MND	MND	MND	4,64E-05	6,51E-05	2,79E-03	9,43E-06	-6,53E-03
POCP ("smog")[3)]	kg NMVOCe	4,59E-03	2,28E-03	3,11E-04	7,18E-03	6,28E-05	6,23E-06	MND	MND	MND	MND	MND	MND	MND	1,28E-05	2,08E-05	7,66E-04	2,74E-06	-3,36E-03
ADP-minerals & metals[4)]	kg Sbe	2,36E-06	1,47E-06	2,42E-06	6,25E-06	3,29E-08	1,33E-09	MND	MND	MND	MND	MND	MND	MND	4,66E-10	1,10E-08	4,08E-08	6,05E-10	-6,81E-06
ADP-fossil resources	MJ	1,37E+01	9,48E+00	1,64E+00	2,48E+01	2,15E-01	4,36E-03	MND	MND	MND	MND	MND	MND	MND	1,24E-02	7,05E-02	7,70E-01	7,22E-03	-6,45E+00
Water use[5)]	m^3e depr.	7,94E-01	4,31E-02	4,05E-02	8,77E-01	9,90E-04	2,01E-03	MND	MND	MND	MND	MND	MND	MND	3,32E-05	3,15E-04	2,69E-03	2,29E-05	-1,63E-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	8,88E-08	7,07E-08	4,54E-09	1,64E-07	1,65E-09	5,58E-11	MND	MND	MND	MND	MND	MND	MND	2,56E-10	5,41E-10	1,53E-08	4,99E-11	-4,66E-08
Ionizing radiation[6)]	kBq U235e	1,75E-01	4,71E-02	1,09E-02	2,33E-01	1,11E-03	1,06E-05	MND	MND	MND	MND	MND	MND	MND	5,68E-05	3,36E-04	3,76E-03	3,27E-05	-1,03E-03
Ecotoxicity (freshwater)	CTUe	2,59E+01	8,18E+00	1,52E+00	3,56E+01	1,78E-01	7,65E-03	MND	MND	MND	MND	MND	MND	MND	7,43E-03	6,34E-02	4,95E-01	4,71E-03	-2,22E+01
Human toxicity, cancer	CTUh	2,54E-08	2,07E-10	1,18E-10	2,57E-08	4,71E-12	1,31E-12	MND	MND	MND	MND	MND	MND	MND	2,85E-13	1,56E-12	1,82E-11	1,18E-13	6,48E-10
Human tox. non-cancer	CTUh	2,66E-08	8,22E-09	1,87E-09	3,67E-08	1,89E-10	6,32E-11	MND	MND	MND	MND	MND	MND	MND	5,38E-12	6,27E-11	3,50E-10	3,08E-12	-1,59E-08

SQP[7)]	-	3,40E+00	1,10E+01	3,66E+00	1,81E+01	2,50E-01	1,75E-03	MND	MND	MND	MND	MND	MND	MND	1,61E-03	8,12E-02	1,15E-01	1,54E-02	-1,87E+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	1,29E+00	1,15E-01	1,69E+00	3,09E+00	2,78E-03	1,01E-04	MND	MND	MND	MND	MND	MND	MND	7,07E-05	7,94E-04	8,55E-03	6,27E-05	-3,71E-01
Renew. PER as material	MJ	8,51E-04	0,00E+00	3,77E-01	3,78E-01	0,00E+00	-3,77E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,29E+00	1,15E-01	2,06E+00	3,47E+00	2,78E-03	-3,77E-01	MND	MND	MND	MND	MND	MND	MND	7,07E-05	7,94E-04	8,55E-03	6,27E-05	-3,71E-01
Non-re. PER as energy	MJ	1,43E+01	9,48E+00	1,61E+00	2,54E+01	2,15E-01	4,36E-03	MND	MND	MND	MND	MND	MND	MND	1,24E-02	7,05E-02	7,70E-01	7,22E-03	-6,45E+00
Non-re. PER as material	MJ	2,96E-03	0,00E+00	5,14E-02	5,44E-02	0,00E+00	-2,49E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	1,43E+01	9,48E+00	1,66E+00	2,54E+01	2,15E-01	-2,05E-02	MND	MND	MND	MND	MND	MND	MND	1,24E-02	7,05E-02	7,70E-01	7,22E-03	-6,45E+00
Secondary materials	kg	9,70E-01	2,65E-03	2,20E-03	9,75E-01	6,05E-05	9,54E-06	MND	MND	MND	MND	MND	MND	MND	4,84E-06	1,96E-05	2,94E-04	1,52E-06	1,46E-01
Renew. secondary fuels	MJ	1,02E-04	2,50E-05	1,27E-02	1,29E-02	5,33E-07	2,34E-08	MND	MND	MND	MND	MND	MND	MND	1,58E-08	1,97E-07	9,66E-07	3,96E-08	-4,33E-05
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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,98E-02	1,24E-03	1,03E-03	2,20E-02	2,85E-05	-6,28E-06	MND	MND	MND	MND	MND	MND	MND	7,51E-07	9,13E-06	6,45E-05	7,90E-06	-2,81E-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	4,77E-01	1,13E-02	3,75E-03	4,92E-01	2,30E-04	5,61E-07	MND	MND	MND	MND	MND	MND	MND	1,66E-05	9,34E-05	1,21E-03	0,00E+00	-1,83E-01
Non-hazardous waste	kg	2,56E+00	1,91E-01	1,18E-01	2,87E+00	4,00E-03	3,00E-02	MND	MND	MND	MND	MND	MND	MND	1,16E-04	1,54E-03	1,28E-02	5,00E-02	-1,20E+00
Radioactive waste	kg	5,85E-05	6,45E-05	4,92E-06	1,28E-04	1,48E-06	2,83E-09	MND	MND	MND	MND	MND	MND	MND	8,71E-08	4,71E-07	5,29E-06	0,00E+00	-5,22E-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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	6,43E-05	0,00E+00	1,22E-01	1,22E-01	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	1,58E-04	0,00E+00	0,00E+00	1,58E-04	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	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	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	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_2e	1,11E+00	6,05E-01	9,73E-02	1,81E+00	1,39E-02	4,66E-04	MND	MND	MND	MND	MND	MND	MND	9,09E-04	4,64E-03	5,67E-02	2,58E-04	-6,61E-01
Ozone depletion Pot.	kg CFC_{-11}e	6,19E-08	1,16E-07	1,17E-08	1,90E-07	2,65E-09	3,27E-11	MND	MND	MND	MND	MND	MND	MND	1,56E-10	8,55E-10	9,34E-09	8,43E-11	-3,12E-08
Acidification	kg SO_2e	3,76E-03	1,79E-03	3,15E-04	5,86E-03	4,53E-05	3,54E-06	MND	MND	MND	MND	MND	MND	MND	6,81E-06	1,54E-05	4,16E-04	1,87E-06	-2,14E-03
Eutrophication	kg PO_4^3e	2,40E-03	3,94E-04	1,30E-04	2,92E-03	1,01E-05	3,99E-06	MND	MND	MND	MND	MND	MND	MND	1,58E-06	3,52E-06	9,89E-05	4,03E-07	-1,24E-03
POCP (“smog”)	kg C_2H_4e	4,18E-04	7,59E-05	1,78E-05	5,12E-04	1,78E-06	1,17E-07	MND	MND	MND	MND	MND	MND	MND	1,49E-07	6,03E-07	9,33E-06	7,84E-08	-3,84E-04
ADP-elements	kg Sbe	2,75E-06	1,42E-06	2,41E-06	6,58E-06	3,20E-08	1,17E-09	MND	MND	MND	MND	MND	MND	MND	4,59E-10	1,07E-08	4,03E-08	5,96E-10	-6,78E-06
ADP-fossil	MJ	1,44E+01	9,48E+00	1,64E+00	2,55E+01	2,15E-01	4,36E-03	MND	MND	MND	MND	MND	MND	MND	1,24E-02	7,05E-02	7,70E-01	7,22E-03	-6,45E+00

ENVIRONMENTAL IMPACTS – TRACI 2.1. / 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_2e	1,09E+00	6,05E-01	9,65E-02	1,79E+00	1,39E-02	4,79E-04	MND	MND	MND	MND	MND	MND	MND	9,13E-04	4,65E-03	5,68E-02	2,58E-04	-6,66E-01
Ozone Depletion	kg CFC_{-11}e	6,11E-08	1,16E-07	1,17E-08	1,89E-07	2,65E-09	3,26E-11	MND	MND	MND	MND	MND	MND	MND	1,56E-10	8,55E-10	9,34E-09	8,43E-11	-3,12E-08
Acidification	kg SO_2e	1,91E-01	1,05E-01	1,77E-02	3,14E-01	2,79E-03	2,62E-04	MND	MND	MND	MND	MND	MND	MND	4,94E-04	9,45E-04	3,00E-02	1,21E-04	-1,21E-01
Eutrophication	kg Ne	1,97E-04	2,44E-04	2,15E-05	4,63E-04	6,05E-06	1,79E-06	MND	MND	MND	MND	MND	MND	MND	7,18E-07	1,98E-06	4,31E-05	2,26E-07	-9,53E-05
POCP (“smog”)	kg O_3e	5,73E-03	1,53E-03	2,28E-04	7,49E-03	4,58E-05	5,88E-06	MND	MND	MND	MND	MND	MND	MND	1,09E-05	1,53E-05	6,55E-04	2,22E-06	-1,60E-03
ADP-fossil	MJ	8,14E-01	1,30E+00	2,06E-01	2,32E+00	2,97E-02	5,40E-04	MND	MND	MND	MND	MND	MND	MND	1,76E-03	9,64E-03	1,07E-01	1,01E-03	-2,95E-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.

Elma Avdyli, as an authorized verifier acting for EPD Hub Limited
12.03.2024