ENVIRONMENTAL PRODUCT DECLARATION

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

EBEA® Balcony Connector
Peikko Group Corporation

EPD HUB, HUB-0941
Publishing date 12.12.2023, last updated date 12.12.2023, valid until 12.12 2028

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Peikko Group Corporation
Address	2721 Pilis, Kossuth Lajos u. 40. Hungary
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	Sister EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Patience Wanjala, Peikko Group Oy
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	EBEA® Balcony Connector
Place of production	2721 Pilis, Kossuth Lajos u. 40. Hungary
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Kg of EBEA® Balcony Connector
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	4,67E0
GWP-total, A1-A3 (kgCO2e)	4,68E0
Secondary material, inputs (%)	43.9
Secondary material, outputs (%)	71.5
Total energy use, A1-A3 (kWh)	18.1
Total water use, A1-A3 (m3e)	4,70E-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. Peikkos innovative solutions offer a faster, safer, and more sustainable way to design and build. Peikko has sales offices in over 30 countries in Asia-Pacific, Europe, Africa, the Middle East, and North America, with manufacturing operations in 12 countries. Peikko is a family-owned and managed company that employs about 2,000 professionals. Peikko was founded in 1965 and is headquartered in Lahti, Finland. Pre-casters, builders, constructors, developers, flooring specialists, machine manufacturers, power plant designers, architects, and structural designers – can all enjoy and take advantage of Peikko's solutions.

PRODUCT DESCRIPTION

This EPD represents EBEA® Balcony Connector produced at Peikko facility in Pilis, Hungary.
EBEA® Balcony Connector is a load-bearing insulated connection element for concrete structures that minimizes thermal bridges in cantilever balconies and other applications such as walls and slabs. The EBEA® system is very versatile with many types to choose from. They are available in various standard and semi-standard models that are suitable for a large variety of applications. From the wide range of models, you can find an optimal solution for transferring all transverse forces, horizontal forces and moments reliably to the main slab.

The EBEA® system allows achieving a noise reduction of up to 21 dB thanks to special materials used and a fire protection classification of up to REI 120.

Simple installation together with versatile features make EBEA® Balcony Connector a cost-efficient and practical solution for load-bearing structures with high requirements for minimizing thermal bridges.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	70.76	EU
Minerals	29.24	EU
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.0029
Biogenic carbon content in packaging, kg C	0.0007

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Kg of EBEA® Balcony Connector
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.

A1

The environmental impacts of raw material supply (A1) include emissions generated when raw materials are taken from nature, transported to industrial units for processing and processed, along with waste handling from the various production processes. The primary raw materials are stainless steel plate, stainless rebars and stone wool insulation. All major upstream processes are taken into consideration, including infrastructure. Loss of raw material and energy transmission losses are also taken into account. This stage includes all the aforementioned for the raw materials which end up in the final product (i.e., steel, welding filler, insulation and packaging) as well as the electricity and heat production which are consumed during the manufacturing at the plant.

A2

The considered transportation impacts (A2) include exhaust emissions resulting from the transport of all raw materials from suppliers to Pilis, Peikko production plant in Hungary as well as the environmental impacts of production of the used diesel. The manufacturing, 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 mainly by Peikko Hungary.

A3

The environmental impacts considered for the production stage (A3) cover the manufacturing of the production materials (welding gases, lubricants and blasting steel shots) and fuels used by machines. Also handling of waste formed in the production processes at the production plant is covered. The environmental impacts of this stage have been calculated using the most recent data in regard to what applied in the factory. The study considers the losses of main raw materials occurring during the manufacturing process. Based on the production unit, 70 % from the main leftover materials (steel and wool) are used as coproduct and 30 % are considered as waste for further treatment.

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.

A4

EBEA® Balcony Connectors transportation is taking place from Pilis, Kossuth Lajos. Hungary factory to mostly central European countries. A scenario-based average distance of 1000 km is assumed, and the transportation method is assumed to be a lorry with fill rate assumed as 100%. Transportation does not cause losses as products are packaged properly.

A5

Only packaging waste is generated, and the impacts are accounted in module A5, since the product is delivered as whole to the construction site. There is no installation-related process happening in A5.

The distance is assumed as 50km and the transportation method assumed to be lorry. This is an average distance which considers the fact that the distance from the customer to recycling and landfill facilities is not very long, as customers are assumed to be located in capital regions of their respective countries.

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)

End of life stage includes deconstruction/demolition (C1), transport to waste processing (C2), waste processing for reuse, recovery and/or recycling (C3) and disposal (C4).

C1

Demolition is assumed to take 0.01 kWh/kg of element. It is assumed that 100% of waste is collected. Energy consumption of demolition process is on the average 10 kWh/m2 (Bozdag, Ö. & Secer, M. 2007). Based on Level(s) project, an average mass of concrete building is about 1000 kg/m2. Thus, energy consumption of demolition is 10 kWh / 1000 kg = 0.01 kWh/kg.

C2

Distance for transportation to treatment is assumed as 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 within the capital areas and distance to recycling and landfill facilities is not very long.

C3

95% of steel part is assumed to be recycled based on World Steel Association, 2020. 16% of insulating parts is assumed to be recycled.

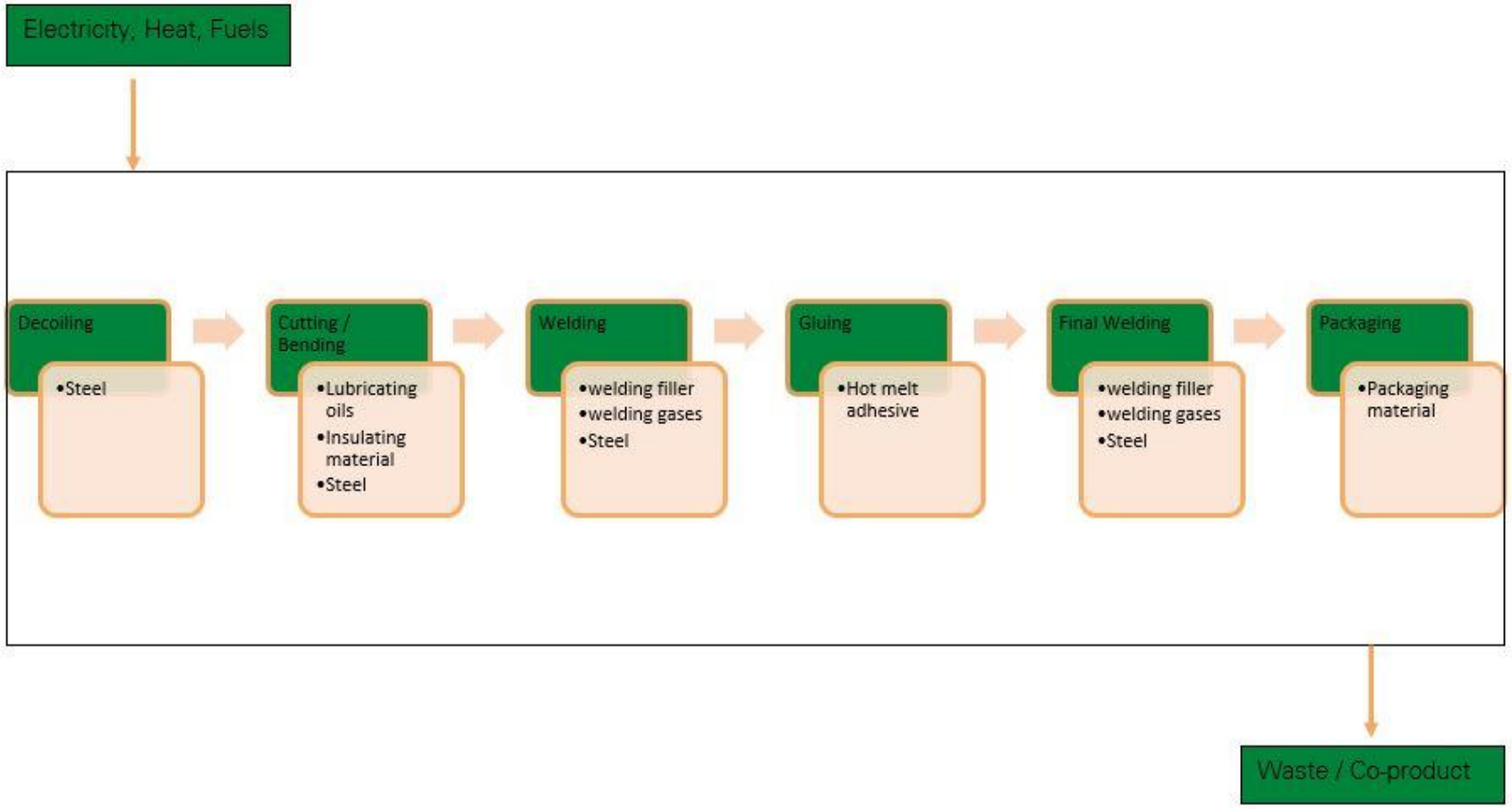
C4

It is assumed that 5% of steel and 84% of insulation are taken to landfill for final disposal.

D

Due to the recycling process the end-of-life product is converted into a recycled steel (D).

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	Partly allocated by mass or volume
Packaging materials	Not applicable
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	Not applicable

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. Ecoinvent v3.8 and One Click LCA databases were used 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	4,35E+00	1,50E-01	1,83E-01	4,68E+00	1,27E-01	9,73E-03	MND	MND	MND	MND	MND	MND	MND	3,31E-03	4,37E-03	2,95E-02	-5,52E-05	9,65E-03
GWP – fossil	kg CO_2e	4,33E+00	1,50E-01	1,85E-01	4,67E+00	1,27E-01	2,07E-03	MND	MND	MND	MND	MND	MND	MND	3,31E-03	4,36E-03	3,87E-02	1,48E-03	9,65E-03
GWP – biogenic	kg CO_2e	1,08E-02	0,00E+00	-2,67E-03	8,14E-03	0,00E+00	7,67E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-9,18E-03	-1,54E-03	0,00E+00
GWP – LULUC	kg CO_2e	3,99E-03	5,62E-05	4,01E-04	4,44E-03	4,54E-05	1,20E-06	MND	MND	MND	MND	MND	MND	MND	3,30E-07	1,64E-06	3,85E-06	1,40E-06	-6,93E-07
Ozone depletion pot.	kg CFC_{-11}e	2,00E-07	3,74E-08	1,94E-08	2,57E-07	3,15E-08	8,96E-11	MND	MND	MND	MND	MND	MND	MND	7,07E-10	1,08E-09	8,27E-09	5,99E-10	-5,81E-09
Acidification potential	mol H^+e	2,55E-02	4,78E-04	9,74E-04	2,69E-02	4,06E-04	5,12E-06	MND	MND	MND	MND	MND	MND	MND	3,44E-05	1,41E-05	4,02E-04	1,39E-05	-2,67E-05
EP-freshwater[2)]	kg Pe	1,66E-04	1,07E-06	1,97E-05	1,87E-04	9,56E-07	2,91E-08	MND	MND	MND	MND	MND	MND	MND	1,10E-08	3,14E-08	1,28E-07	1,55E-08	-1,43E-08
EP-marine	kg Ne	3,95E-03	1,05E-04	1,43E-04	4,20E-03	8,94E-05	1,67E-06	MND	MND	MND	MND	MND	MND	MND	1,52E-05	3,19E-06	1,78E-04	4,82E-06	-3,98E-06
EP-terrestrial	mol Ne	4,68E-02	1,17E-03	1,60E-03	4,96E-02	9,93E-04	1,77E-05	MND	MND	MND	MND	MND	MND	MND	1,67E-04	3,54E-05	1,95E-03	5,30E-05	-4,44E-05
POCP ("smog")[3)]	kg NMVOCe	1,50E-02	4,60E-04	5,41E-04	1,60E-02	3,91E-04	5,20E-06	MND	MND	MND	MND	MND	MND	MND	4,59E-05	1,37E-05	5,37E-04	1,54E-05	-2,28E-05
ADP-minerals & metals[4)]	kg Sbe	1,08E-04	3,67E-07	6,34E-07	1,09E-04	8,69E-07	1,21E-08	MND	MND	MND	MND	MND	MND	MND	1,68E-09	1,07E-08	1,96E-08	3,40E-09	-3,41E-09
ADP-fossil resources	MJ	4,76E+01	2,40E+00	4,96E+00	5,49E+01	2,04E+00	9,55E-03	MND	MND	MND	MND	MND	MND	MND	4,45E-02	6,95E-02	5,21E-01	4,06E-02	-3,17E-01
Water use[5)]	m^3e depr.	1,41E+00	1,11E-02	1,04E-01	1,52E+00	8,88E-03	2,69E-04	MND	MND	MND	MND	MND	MND	MND	1,20E-04	3,20E-04	1,40E-03	1,29E-04	2,33E-04

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	3,30E-07	1,74E-08	4,81E-09	3,52E-07	1,37E-08	1,30E-10	MND	MND	MND	MND	MND	MND	MND	9,22E-10	5,06E-10	1,11E-08	2,80E-10	-3,06E-11
Ionizing radiation[6)]	kBq U235e	3,42E-01	1,23E-02	1,10E-01	4,64E-01	1,00E-02	9,36E-05	MND	MND	MND	MND	MND	MND	MND	2,05E-04	3,57E-04	2,39E-03	1,84E-04	-3,61E-05
Ecotoxicity (freshwater)	CTUe	1,33E+02	1,99E+00	2,54E+00	1,37E+02	1,66E+00	2,24E-02	MND	MND	MND	MND	MND	MND	MND	2,68E-02	5,80E-02	3,13E-01	2,65E-02	-2,10E-02
Human toxicity, cancer	CTUh	8,86E-08	5,18E-11	1,02E-10	8,87E-08	4,27E-11	2,64E-12	MND	MND	MND	MND	MND	MND	MND	1,03E-12	1,50E-12	1,20E-11	6,62E-13	5,70E-13
Human tox. non-cancer	CTUh	1,03E-07	2,03E-09	2,14E-09	1,07E-07	1,74E-09	2,37E-11	MND	MND	MND	MND	MND	MND	MND	1,94E-11	5,90E-11	2,26E-10	1,73E-11	5,44E-11
SQP[7)]	-	2,29E+01	2,79E+00	1,07E+00	2,67E+01	2,58E+00	1,22E-02	MND	MND	MND	MND	MND	MND	MND	5,79E-03	8,10E-02	6,77E-02	8,68E-02	-4,99E-03

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	1,02E+01	3,10E-02	3,79E-01	1,06E+01	2,62E-02	8,14E-04	MND	MND	MND	MND	MND	MND	MND	2,54E-04	8,95E-04	2,97E-03	3,52E-04	-3,02E-04
Renew. PER as material	MJ	1,32E-02	0,00E+00	2,61E-02	3,93E-02	0,00E+00	-2,61E-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 renew. PER	MJ	1,02E+01	3,10E-02	4,05E-01	1,06E+01	2,62E-02	-2,53E-02	MND	MND	MND	MND	MND	MND	MND	2,54E-04	8,95E-04	2,97E-03	3,52E-04	-3,02E-04
Non-re. PER as energy	MJ	4,79E+01	2,40E+00	4,07E+00	5,44E+01	2,04E+00	9,55E-03	MND	MND	MND	MND	MND	MND	MND	4,45E-02	6,95E-02	5,21E-01	4,06E-02	-3,17E-01
Non-re. PER as material	MJ	2,69E+00	0,00E+00	4,26E-01	3,12E+00	0,00E+00	-4,26E-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 non-re. PER	MJ	5,06E+01	2,40E+00	4,49E+00	5,75E+01	2,04E+00	-4,17E-01	MND	MND	MND	MND	MND	MND	MND	4,45E-02	6,95E-02	5,21E-01	4,06E-02	-3,17E-01
Secondary materials	kg	4,39E-01	6,75E-04	9,47E-04	4,41E-01	4,08E-04	3,72E-05	MND	MND	MND	MND	MND	MND	MND	1,74E-05	1,96E-05	2,04E-04	8,53E-06	-1,53E-05
Renew. secondary fuels	MJ	1,15E-03	5,95E-06	1,24E-03	2,39E-03	3,60E-06	2,89E-07	MND	MND	MND	MND	MND	MND	MND	5,70E-08	1,74E-07	6,66E-07	2,23E-07	1,83E-08
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	4,39E-02	3,18E-04	2,81E-03	4,70E-02	3,15E-04	6,82E-06	MND	MND	MND	MND	MND	MND	MND	2,70E-06	9,21E-06	3,16E-05	4,44E-05	-2,45E-05

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	3,80E+00	2,57E-03	1,14E-02	3,81E+00	2,13E-03	1,28E-04	MND	MND	MND	MND	MND	MND	MND	5,96E-05	7,54E-05	6,96E-04	0,00E+00	8,18E-05
Non-hazardous waste	kg	7,23E+00	4,47E-02	8,84E-01	8,16E+00	9,04E-02	2,00E-03	MND	MND	MND	MND	MND	MND	MND	4,19E-04	1,31E-03	4,90E-03	2,81E-01	1,24E-02
Radioactive waste	kg	1,20E-04	1,65E-05	2,93E-05	1,66E-04	1,40E-05	5,24E-08	MND	MND	MND	MND	MND	MND	MND	3,13E-07	4,79E-07	3,66E-06	0,00E+00	-1,90E-08

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	0,00E+00	0,00E+00	1,98E-02	1,98E-02	0,00E+00	2,30E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	7,19E-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	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	4,25E+00	1,49E-01	1,82E-01	4,58E+00	1,26E-01	2,08E-03	MND	MND	MND	MND	MND	MND	MND	3,27E-03	4,32E-03	3,83E-02	1,45E-03	1,05E-02
Ozone depletion Pot.	kg CFC-$_{11}$e	1,79E-07	2,96E-08	1,64E-08	2,25E-07	2,50E-08	7,39E-11	MND	MND	MND	MND	MND	MND	MND	5,60E-10	8,59E-10	6,55E-09	4,74E-10	-5,10E-09
Acidification	kg SO_2e	2,13E-02	3,88E-04	8,21E-04	2,25E-02	3,12E-04	3,91E-06	MND	MND	MND	MND	MND	MND	MND	2,45E-05	1,14E-05	2,87E-04	1,05E-05	-2,26E-05
Eutrophication	kg PO_4^3e	7,08E-03	8,21E-05	6,53E-04	7,82E-03	6,52E-05	6,58E-06	MND	MND	MND	MND	MND	MND	MND	5,69E-06	2,44E-06	6,65E-05	2,27E-06	7,51E-07
POCP (“smog”)	kg C_2H_4e	1,16E-03	1,81E-05	4,68E-05	1,23E-03	1,54E-05	2,62E-07	MND	MND	MND	MND	MND	MND	MND	5,36E-07	5,27E-07	6,27E-06	4,41E-07	-1,96E-06
ADP-elements	kg Sbe	1,08E-04	3,57E-07	6,34E-07	1,09E-04	8,63E-07	1,20E-08	MND	MND	MND	MND	MND	MND	MND	1,65E-09	1,04E-08	1,93E-08	3,35E-09	-3,65E-09
ADP-fossil	MJ	4,84E+01	2,40E+00	4,96E+00	5,58E+01	2,04E+00	9,55E-03	MND	MND	MND	MND	MND	MND	MND	4,45E-02	6,95E-02	5,21E-01	4,06E-02	-3,17E-01

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	4,18E+00	1,49E-01	1,79E-01	4,51E+00	1,26E-01	2,07E-03	MND	MND	MND	MND	MND	MND	MND	3,29E-03	4,32E-03	3,84E-02	1,45E-03	1,09E-02
Ozone Depletion	kg CFC_{-11}e	1,75E-07	2,96E-08	1,63E-08	2,21E-07	2,73E-08	7,38E-11	MND	MND	MND	MND	MND	MND	MND	5,60E-10	8,59E-10	6,55E-09	4,74E-10	-5,10E-09
Acidification	kg SO_2e	1,11E+00	2,16E-02	4,23E-02	1,18E+00	1,32E-02	2,53E-04	MND	MND	MND	MND	MND	MND	MND	1,78E-03	6,43E-04	2,08E-02	6,81E-04	-1,16E-03
Eutrophication	kg Ne	7,08E-04	5,71E-05	3,34E-05	7,98E-04	5,15E-05	4,81E-07	MND	MND	MND	MND	MND	MND	MND	2,59E-06	1,67E-06	3,02E-05	1,27E-06	9,32E-07
POCP (“smog”)	kg O_3e	1,37E-02	2,73E-04	3,82E-04	1,44E-02	1,79E-03	4,08E-06	MND	MND	MND	MND	MND	MND	MND	3,93E-05	8,27E-06	4,59E-04	1,25E-05	-1,12E-05
ADP-fossil	MJ	3,38E+00	3,32E-01	3,05E-01	4,02E+00	2,85E-01	9,04E-04	MND	MND	MND	MND	MND	MND	MND	6,35E-03	9,62E-03	7,42E-02	5,67E-03	-4,98E-02

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
12.12.2023

VERIFIED ISO 14025