ENVIRONMENTAL PRODUCT DECLARATION

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

Roth Ball Valve

Roth North Europe A/S

Sister EPD to EPD HUB EPD number 1355
EPD HUB, HUB-1536

Published on 04.07.2024, last updated on 04.07.2024, valid until 04.07.2029

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Roth North Europe A/S
Address	Centervej 5, Frederikssund 3600, Denmark
Contact details	sustainability@roth-northeurope.com
Website	https://www.roth-northeurope.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
Parent EPD number	Hub-1355
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Ibrahim Matar
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Watermeter coupler/valve 22 male x 3/4"
Additional labels	This EPD covers the declared Roth Ball Valves in product reference page 2
Product reference	17RS1000.011 17045718.182 17045718.184 17046220.212 17046220.215 17046220.218 17046220.222 17046220.315 17047143.022 17047143.122 17743780.115 17RS1000.003 17RS1000.009 17RS1000.011 17RS1000.012 17RS1000.013 17RS1000.014
Place of production	DENMARK, CENTERVEJ 5, FREDERIKSSUND 3600
Period for data	01-01-2023 To 31-12-2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-32% +41 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 Kg of 17RS1000.011
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	5,17E+00
GWP-total, A1-A3 (kgCO2e)	5,18E+00
Secondary material, inputs (%)	75.0
Secondary material, outputs (%)	65.0
Total energy use, A1-A3 (kWh)	23,7
Total water use, A1-A3 (m3e)	0.12

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Roth North Europe is a market leader in Northern Europe of HVAC systems. Roth has over the last 75 years created a solutions driven approach to deliver our customers with a portfolio of best in class products. Design and development of innovative, environmentally transparent and market led products, all manufactured in state of the art facilities has ensured that our brand is synonymous with the quality and reliability you expect.

Roth North Europe's headquarters and service center, located in Frederikssund (40 km outside Copenhagen) comprises of all support functions, logistics and product development for the Nordic, UK and the Baltic countries.

Our distribution strategy offers flexible access for our diverse customer base to the complete Roth product range, available through wholesalers and distributors. Covering the whole of the Northern European region, your business is supported by our professional technical experts and commercial teams who will work collaboratively with you in selecting the optimal HVAC solution.

PRODUCT DESCRIPTION

The Roth Ball Valve is made of dezincification-resistant brass CW625N in accordance with EN 12164/ EN 12165. They have subsequently been chrome plated. Roth Ball Valves feature press ends made from gunmetal alloy according to DIN/EN 1982.

These valves come in various configurations, allowing connection via traditional thread, compression (clamping ring), pressure and tectite push methods. Suitable for a wide range of applications, they can be used with PERT, Roth MulitPex®, Roth Alu-LaserPlus®, and copper pipes.

The Roth Ball Valves have been tested and approved in accordance with the requirements of GDV, ETA Denmark, KIWA, and Sintef for use in drinking water installations.

The Roth Ball Valve can be applied for the products in the following dimensions:

Thread: ½" & ¾"

PERT/MultiPex®: 12, 15, 18 and 22 mm

Alu-LaserPlus®: 16 mm

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	95	SWEDEN, EUROPE
Minerals		
Fossil materials	0,05	ASIA
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	0.0904

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 Kg of 17RS1000.011
Mass per declared unit	1 Kg
Functional unit	
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
LEAD	0bbf05b7-55fd-41e3-a414-9dbf4d2ea30b	

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 valve is made of brass mainly, small polymer parts and minor stainless steel parts. The brass is received as tubes or bars in the factory and components are manufactured by processing the bars and tubes. The processes used to process the brass are milling, drilling, cutting, and pressing. Scrap material derived from the production are sent to recycling, directly from the factory. EPDM parts are sourced and are directly consumed in the assembly of the valve. The valve consists of following components:

- Spindel
- Retaining Nipple
- Compression ring
- Valve body brass
- Ball
- EPDM O-rings
- Nipple
- Roset
- Roset back piece
- Other small parts

In addition, a small handle from composite with a small stainless steel screw to mount it is included. The handles are made from nylon and stainless steel. Other polymer parts include O-rings made from EPDM. Additional processes used to manufacture the valves are welding, testing and packaging. The transport assumptions are based on the actual distances between the supplier and Roth North Europe A/S for each component. The production loss is metal scrap from the processing of metals. CO2 emissions from the consumption of electricity is based on the actual emission provided by the supplier, where 100% comes from renewable sources. For packaging a cardboard package is used, and some valves small plastic bags are used, however these plastic bags are excluded as their weights are not significant in any way. The carboards transportation distance is defined as the distance between the supplier and the manufacturer, both located in Denmark. The ancillaries for the production is tap water, mineral oils for lubrication purposes. The tap water waste is run to treatment facilities via pipes and the mineral oils are collected then send for waste treatment. The mineral oils transportation is defined as the distance between the manufacturer and the treatment facility in Denmark. The obtained scrap from the metal

processing is send to authorised recycling facilities, and the transportation is defined as the distance between Roth North Europe A/S and the facilities.

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 defined according to the PCR. Distance of transportation from production to building site, is estimated from the countries with the largest sales volume, The transportation method is a combination of lorry and containership, depending on the country. Vehicle capacity utilization volume factor is assumed to be 1 which means full loads, it may vary but as role of transportation emission in total results are small, the variety is assumed to be negligible. Empty returns are not taken into account as it is assumed that the return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as products are packaged properly. Also, volume capacity utilisation factor is assumed to be 1 for the nested packaged products. The only waste in A5 for the product comes from the packaging. The transportation from building site to recycling station is assumed to be 100 km in all scenarios.

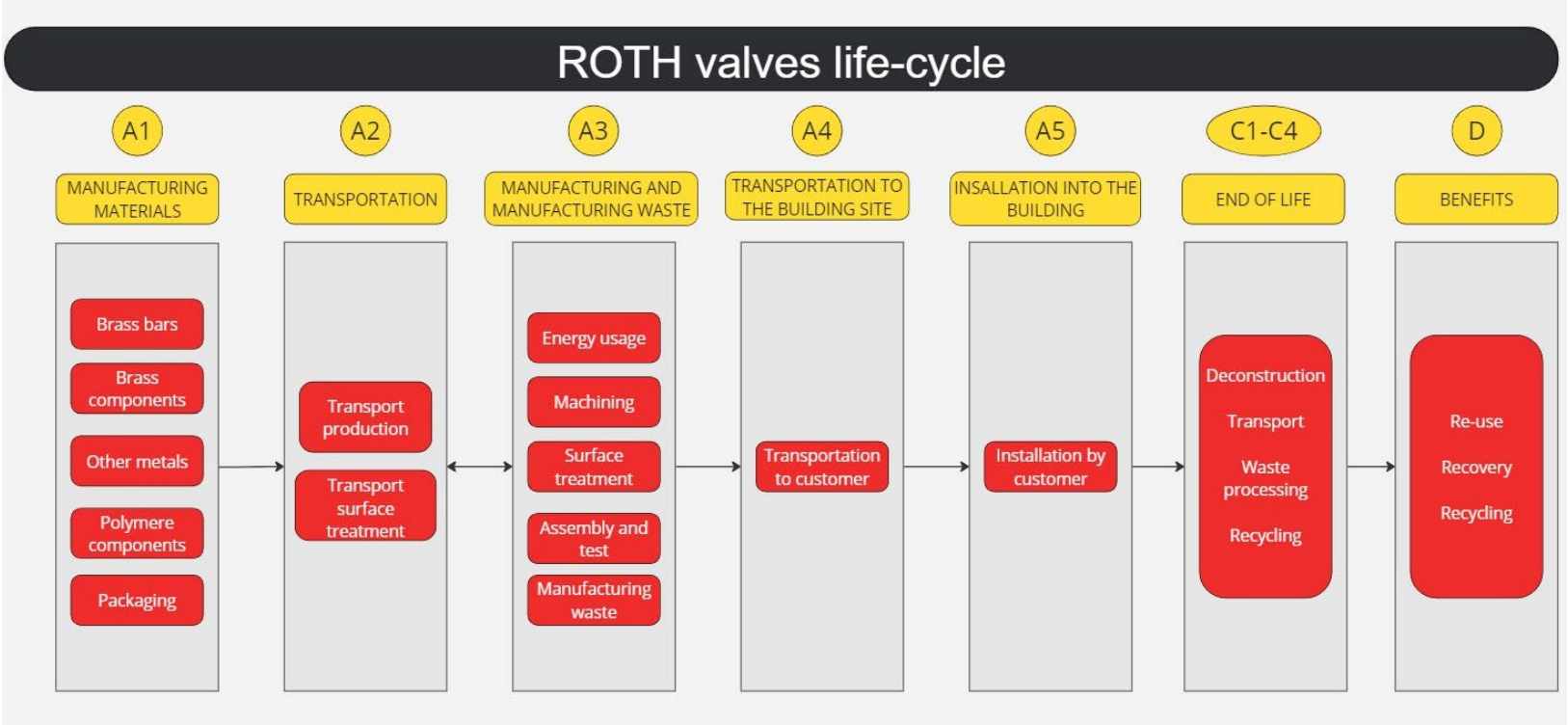
PRODUCT USE AND MAINTENANCE (B1-B7)

A ROTH ball valve needs no maintenance, repair or refurbishment and has no operational water or energy use during its lifetime.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The consumption of energy and natural resources for disassembling the end-of-life is assumed to be negligible, as the disassembly of the product is done by the buyer or the recycling facilities (C1). The end-of-life product is assumed to be sent to the closest facilities by lorry, which is dependent on the individual country (C2). 85% of the product is sent for recycling, and 85% of polymer parts are sent for incineration with energy recovery (C3). 15% of the end-of-life product is assumed to go to a landfill or be lost in the processing (C4). Due to the recycling and incineration potential of metals and plastics, the end-of-life is converted into recycled materials, while heat is produced from material incineration (D). The benefits and burdens of waste packaging in A5 are also considered in module 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	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	Averaged by shares of total volume
Variation in GWP-fossil for A1-A3	-31% +42%

The Roth Watermeter coupler/valve 22 male x 3/4" 17RS1000.011 valve has been chosen as the representative valve.

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	4,25E+00	5,20E-01	-1,38E-02	4,76E+00	1,12E-01	3,39E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,39E-01	2,36E-03	-7,96E-02
GWP – fossil	kg CO_2e	4,24E+00	5,20E-01	3,15E-01	5,08E+00	1,12E-01	5,88E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,39E-01	2,36E-03	-7,96E-02
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-3,32E-01	-3,32E-01	0,00E+00	3,33E-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_2e	8,04E-03	1,92E-04	3,31E-03	1,15E-02	4,12E-05	3,65E-06	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	7,37E-07	1,39E-06	-5,86E-05
Ozone depletion pot.	kg CFC_{-11}e	2,55E-07	1,20E-07	2,97E-08	4,04E-07	2,58E-08	1,69E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,39E-10	5,27E-10	-3,76E-09
Acidification potential	mol H^+e	2,06E-01	2,20E-03	1,91E-03	2,10E-01	4,79E-04	2,02E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,09E-05	1,09E-05	-5,78E-04
EP-freshwater[2)]	kg Pe	9,66E-04	4,25E-06	1,91E-05	9,89E-04	9,00E-07	1,69E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,73E-08	1,77E-08	-3,51E-06
EP-marine	kg Ne	1,10E-02	6,54E-04	6,97E-04	1,24E-02	1,42E-04	5,48E-06	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,17E-06	3,54E-06	-7,30E-05
EP-terrestrial	mol Ne	1,54E-01	7,21E-03	4,76E-03	1,66E-01	1,57E-03	4,73E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,96E-05	3,67E-05	-8,42E-04
POCP ("smog")[3)]	kg NMVOCe	4,26E-02	2,31E-03	1,21E-03	4,61E-02	5,01E-04	1,41E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,42E-05	1,14E-05	-2,32E-04
ADP-minerals & metals[4)]	kg Sbe	4,95E-03	1,22E-06	6,01E-06	4,96E-03	2,62E-07	8,05E-08	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,36E-08	3,51E-09	-5,04E-08
ADP-fossil resources	MJ	5,71E+01	7,80E+00	4,17E+00	6,91E+01	1,68E+00	3,84E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,59E-02	3,73E-02	-8,44E-01
Water use[5)]	m^3e depr.	3,51E+00	3,49E-02	2,68E-01	3,82E+00	7,53E-03	1,23E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,08E-03	1,37E-04	-9,97E-03

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	5,72E-07	5,99E-08	2,70E-08	6,59E-07	1,29E-08	2,89E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,15E-10	1,93E-10	-5,36E-09
Ionizing radiation[6)]	kBq U235e	7,24E-01	3,72E-02	3,67E-02	7,98E-01	8,05E-03	5,62E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	5,78E-05	1,66E-04	-5,20E-03
Ecotoxicity (freshwater)	CTUe	1,89E+03	7,02E+00	1,32E+01	1,91E+03	1,50E+00	2,03E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,69E-02	1,16E+00	-1,81E+00
Human toxicity, cancer	CTUh	9,26E-08	1,72E-10	2,48E-10	9,30E-08	3,72E-11	1,19E-11	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	5,36E-12	3,24E-09	-2,19E-11
Human tox. non-cancer	CTUh	2,71E-06	6,95E-09	6,45E-09	2,72E-06	1,49E-09	1,28E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,06E-10	2,23E-07	-7,55E-10
SQP[7)]	-	7,41E+01	8,99E+00	9,67E+00	9,28E+01	1,93E+00	2,68E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,89E-03	1,40E-01	-5,02E-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	1,38E+01	8,79E-02	3,00E+00	1,69E+01	1,91E-02	4,89E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,08E-04	3,90E-04	-1,36E-01
Renew. PER as material	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
Total use of renew. PER	MJ	1,38E+01	8,79E-02	3,00E+00	1,69E+01	1,91E-02	4,89E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,08E-04	3,90E-04	-1,36E-01
Non-re. PER as energy	MJ	5,56E+01	7,80E+00	4,11E+00	6,75E+01	1,68E+00	3,83E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,59E-02	3,73E-02	-8,44E-01
Non-re. PER as material	MJ	1,48E+00	0,00E+00	0,00E+00	1,48E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-1,26E+00	-2,22E-01	0,00E+00
Total use of non-re. PER	MJ	5,71E+01	7,80E+00	4,11E+00	6,90E+01	1,68E+00	3,83E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-1,24E+00	-1,85E-01	-8,44E-01
Secondary materials	kg	2,38E+00	2,17E-03	2,27E-01	2,60E+00	4,67E-04	1,19E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,35E-05	7,08E-06	-6,91E-05
Renew. secondary fuels	MJ	1,54E-03	2,19E-05	1,61E-02	1,77E-02	4,65E-06	5,14E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,64E-07	3,17E-07	-4,55E-07
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	1,17E-01	1,01E-03	6,23E-03	1,24E-01	2,18E-04	3,30E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,44E-05	4,41E-05	-5,57E-04

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	1,70E+00	1,03E-02	2,41E-02	1,73E+00	2,19E-03	5,75E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,98E-05	1,40E-01	-6,51E-03
Non-hazardous waste	kg	6,07E+01	1,70E-01	5,52E-01	6,14E+01	3,61E-02	1,21E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,66E-02	9,80E-03	-2,44E-01
Radioactive waste	kg	2,46E-04	5,22E-05	1,59E-05	3,14E-04	1,13E-05	1,82E-07	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,70E-08	0,00E+00	-2,39E-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	1,54E+00	1,54E+00	0,00E+00	2,28E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,46E-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	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	9,16E-01	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	4,16E+00	5,14E-01	3,28E-01	5,01E+00	1,11E-01	7,73E-03	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,39E-01	2,10E-03	-7,80E-02
Ozone depletion Pot.	kg CFC_{-11}e	2,12E-07	9,47E-08	2,44E-08	3,31E-07	2,04E-08	1,49E-10	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,20E-10	4,17E-10	-3,06E-09
Acidification	kg SO_2e	1,80E-01	1,71E-03	1,45E-03	1,83E-01	3,73E-04	1,60E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,49E-05	8,43E-06	-4,92E-04
Eutrophication	kg PO_4^3e	5,66E-02	3,89E-04	8,94E-04	5,79E-02	8,40E-05	2,46E-05	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,19E-05	4,69E-05	-1,24E-04
POCP (“smog”)	kg C_2H_4e	6,90E-03	6,67E-05	7,68E-05	7,04E-03	1,45E-05	2,18E-06	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,83E-07	6,59E-07	-2,08E-05
ADP-elements	kg Sbe	4,94E-03	1,18E-06	5,81E-06	4,95E-03	2,53E-07	8,00E-08	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,29E-08	3,45E-09	-5,01E-08
ADP-fossil	MJ	5,71E+01	7,80E+00	4,33E+00	6,92E+01	1,68E+00	3,83E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,59E-02	3,73E-02	-8,44E-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.

Imane Uald lamkaddam, as an authorized verifier acting for EPD Hub Limited
04.07.2024