

ENVIRONMENTAL PRODUCT DECLARATION

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

28406 XXX0
ENTERO RD-S IP
Delta Light nv



EPD HUB, HUB-1236

Publishing date 22 March 2024, last updated on 22 March 2024, valid until 22 March 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Delta Light nv
Address	Muizelstraat 2, 8560 Wevelgem, Belgium
Contact details	info@deltalight.com
Website	www.deltalight.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 c-PCR EN 50693 for electronic and electrical products and systems
Sector	Electrical product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-B7, and modules C1-C4, D
EPD author	Tim Blomme
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☒ External verification
EPD verifier	Magaly González Vázquez, 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	ENTERO RD-S IP
Additional labels	-
Product reference	28406 XXX0
Place of production	Delta Light N.V., Muizelstraat 2, 8560 Belgium
Period for data	FY2022
Averaging in EPD	Averaging
Variation in GWP-fossil for A1-A3	-12,7% and +6,9%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of luminaire
Declared unit mass	0.264 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6,06E+00
GWP-total, A1-A3 (kgCO ₂ e)	5,85E+00
Secondary material, inputs (%)	6.85
Secondary material, outputs (%)	63.0
Total energy use, A1-A3 (kWh)	19.7
Total water use, A1-A3 (m ³ e)	2,76E-02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Belgian and family-run since 1989, Delta Light provides premium lighting solutions for architecture. Quality products, designed for comfort and developed to last, that stand for simplicity and consistency but also show unexpected detail, from a visible screw to an ingenious touch. Because in everything Delta Light does, at project start or follow-up, we always seek to add a little extra care — and work with our partners, to guarantee we can bring their visions to completion.

PRODUCT DESCRIPTION

Entero offers a versatile set of lighting tools designed for architects and designers, enabling the creation of discrete yet cohesive lighting schemes across any project type—retail, residential, public, hospitality, or art. This comprehensive family of luminaires is suitable for both indoor and outdoor applications, providing stylistic continuity with its minimal appearance and clean sightlines.

Entero allows for consistent lighting aesthetics throughout a project, whether it's for damp locations, outside ceilings, or cantilevers. It's designed to meet various lighting needs, from creating atmosphere to illuminating spaces with precision and comfort, using just one type of luminaire to achieve a balance of power and elegance.

Specifications about the representative product: architectural recessed ceiling lighting, IP44/20 classification, class III (excl. power supply), adjustable 0° to 20° swiveling, 355° rotatable. Luminaire power up to 10W with LED COB. Diameter 84mm with height of 108mm. Materials used are aluminium for the cooling block, decorative parts like the cover and also for optical parts like the reflector. Polycarbonate is used for the body and stainless steel is used for the springs.

Further information can be found at <https://deltalight.com/nl-be/producten/entero>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	49	Asia
Minerals	3	EU
Fossil materials	13	Asia, EU
Bio-based materials	0	-

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	0.06

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of luminaire
Mass per declared unit	0.264 kg
Functional unit	663 lumen during a reference lifetime of 55 000 hours
Reference service life	19 years when the luminaire is operated for 8 hours a day

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	x	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

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 product is made of metals, plastics and electronic components. The component manufacturing happens outside of Delta Light with subcontractors (aluminium production, moulding, pcb production,...) and are then transported to Delta Light N.V. where they are assembled together. The finished product is packaged in packaging cardboard before being sent to the installation site.

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 distance is defined according to the PCR. Average distance of transportation from production plant to building site is assumed as average 1340km, 592km, 179km for respectively boat, road and air transport. Vehicle capacity utilization volume factor is assumed to be 100% which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that 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 100% for the nested packaged products. Transportation impacts that occur from delivery of the product cover direct exhaust emissions of fuel, environmental impacts of fuel production, as well as related infrastructure emissions. Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets and cardboard. The impacts of energy consumption and the used ancillary materials during installation are considered negligible.

PRODUCT USE AND MAINTENANCE (B1-B7)

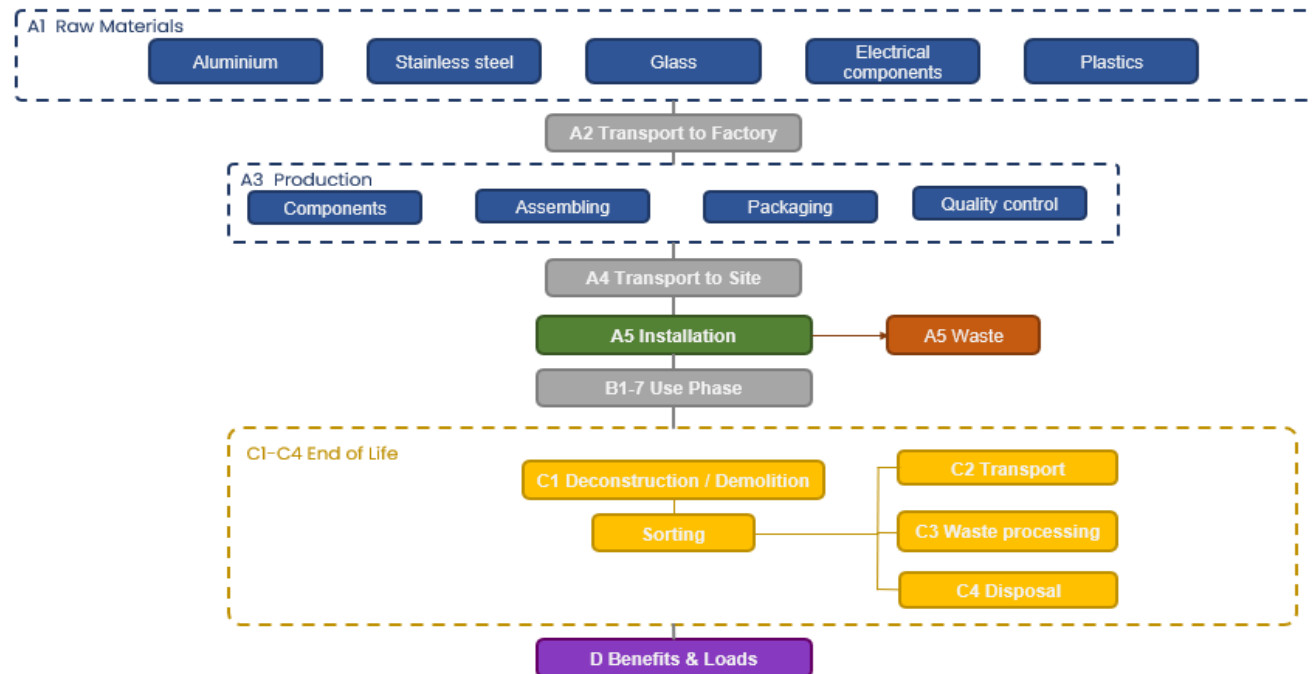
During the use phase, the product consumes electricity from regional (EU, North America, Asia and rest of the world) electricity grid mix (B6). Impacts due to electricity production include direct emissions to air, transformation and transmission losses. The reference service life is based on the LM80 report of the LED which is 55 000 hours. When the luminaire is operated 8 hours a day, this will result in an RSL of approximately 19 years.

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

PRODUCT END OF LIFE (C1-C4, D)

Consumption of energy and natural resources in demolition process is assumed to be negligible. It is assumed that the waste is collected separately and transported to the waste treatment center. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). According to EN 50693:2019, the sequence of treatment operations occurring to the product shall include de-pollution, fractions separation and preparation (dismantling, crushing, shredding, sorting), recycling, other material recovery, energy recovery and disposal. In this study, the default values from table G.4 of EN 50693 is used for treating materials in different waste treatment methods. Due to the material and energy recovery potential of parts in the lighting system, the end-of-life product is converted into recycled raw materials, while the energy recovered from incineration displaces electricity and heat production (D). The wooden pallet and other plastic packaging used during transportation is also incinerated for energy recovery and/or recycled. The benefits and loads of incineration and recycling are included in Module D.

MANUFACTURING PROCESS



All estimations and assumptions regarding the cut off criteria and the allocation are declared in the part “Cut-off Criteria except the estimations/assumptions below:

- Module A2, A4 & C2: Vehicle capacity utilization volume factor is assumed to be 1 which means full load. It may vary but as the role of transportation emission in total results is small, the variety in load is assumed to be negligible. Empty returns are not considered as it is assumed that return trip is used by transportation companies to serve the needs of other clients.
- Module A4: 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. Additionally, transportation distances are based on a sales volume-based weighted average and a lorry is the assumed vehicle type used.
- Module B4 & B6: The product is assumed to undergo replacement of selected components in intervals of time (19 years when the luminaire is operated for 8 hours a day) based on the lifespan of parts and components. This is to ensure that the product is fully functional throughout its lifetime.
- Module C2: Transportation distance to e-waste handling facility is estimated as 50 km and the transportation method is assumed as lorry.
- Module C3, C4, D: The product undergoes dismantling, and the parts are sorted into metals, plastics, paint and electronics. The waste treatment percentages based on EN 50693 are assumed to be applicable. Module C3 accounts for energy and resource inputs for sorting and treating these waste streams for recycling and incineration with energy recovery. Ash from recycling processes is negligible. The recycled end-of-life materials are assumed to serve as secondary raw materials in manufacturing, while incinerated materials displace the need for electricity and heat production.

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	Non-linear averaging
Averaging method	Representative case
Variation in GWP-fossil for A1-A3	-12,7% and +6,9%

Average table can be checked in annex 1

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	5,39E+00	1,19E-01	3,34E-01	5,85E+00	8,40E-02	2,24E-01	MND	MND	MND	MND	MND	4,03E+02	MND	MNR	1,13E-03	6,98E-02	3,97E-03	-2,96E+00
GWP – fossil	kg CO ₂ e	5,39E+00	1,19E-01	5,53E-01	6,06E+00	8,39E-02	3,99E-03	MND	MND	MND	MND	MND	4,02E+02	MND	MNR	1,13E-03	6,98E-02	3,96E-03	-2,95E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-2,20E-01	-2,20E-01	1,74E-05	2,20E-01	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	0,00E+00	0,00E+00	-1,04E-02
GWP – LULUC	kg CO ₂ e	2,08E-03	4,54E-05	1,19E-03	3,31E-03	1,57E-05	2,57E-06	MND	MND	MND	MND	MND	8,43E-01	MND	MNR	4,15E-07	2,12E-05	2,83E-06	-7,96E-04
Ozone depletion pot.	kg CFC ₁₁ e	1,94E-07	2,55E-08	4,60E-08	2,65E-07	1,91E-08	1,76E-10	MND	MND	MND	MND	MND	1,36E-05	MND	MNR	2,59E-10	1,08E-09	3,08E-10	-8,86E-08
Acidification potential	mol H ⁺ e	5,20E-02	2,13E-03	1,86E-03	5,60E-02	5,35E-04	1,84E-05	MND	MND	MND	MND	MND	2,04E+00	MND	MNR	4,77E-06	1,37E-04	1,72E-05	-2,94E-02
EP-freshwater ²⁾	kg Pe	1,08E-03	3,20E-07	2,83E-05	1,11E-03	2,90E-07	1,13E-07	MND	MND	MND	MND	MND	2,11E-02	MND	MNR	9,22E-09	7,09E-07	8,06E-08	-1,95E-04
EP-marine	kg Ne	6,17E-03	5,61E-04	5,55E-04	7,28E-03	1,65E-04	3,63E-05	MND	MND	MND	MND	MND	3,45E-01	MND	MNR	1,42E-06	2,19E-05	5,64E-06	-3,50E-03
EP-terrestrial	mol Ne	6,87E-02	6,22E-03	3,92E-03	7,89E-02	1,81E-03	5,44E-05	MND	MND	MND	MND	MND	3,84E+00	MND	MNR	1,56E-05	2,51E-04	4,72E-05	-3,87E-02
POCP (“smog”) ³⁾	kg NMVOCe	2,06E-02	1,62E-03	1,04E-03	2,32E-02	4,93E-04	2,01E-05	MND	MND	MND	MND	MND	1,04E+00	MND	MNR	5,00E-06	7,00E-05	1,43E-05	-1,13E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,90E-04	1,02E-07	2,73E-06	1,93E-04	7,59E-08	4,50E-08	MND	MND	MND	MND	MND	1,88E-03	MND	MNR	2,64E-09	1,39E-06	6,12E-09	-2,57E-05
ADP-fossil resources	MJ	5,68E+01	1,58E+00	8,79E+00	6,72E+01	1,19E+00	2,91E-02	MND	MND	MND	MND	MND	5,23E+03	MND	MNR	1,69E-02	1,91E-01	3,72E-02	-2,91E+01
Water use ⁵⁾	m ³ e depr.	9,35E+01	3,54E-03	3,23E-01	9,38E+01	2,88E-03	1,65E-03	MND	MND	MND	MND	MND	1,10E+02	MND	MNR	7,56E-05	5,82E-03	4,60E-04	-3,42E-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	3,11E-07	2,77E-09	1,76E-08	3,31E-07	3,23E-09	2,20E-10	MND	MND	MND	MND	MND	1,55E-05	MND	MNR	1,30E-10	2,30E-09	2,63E-10	-1,68E-07
Ionizing radiation ⁶⁾	kBq U235e	3,51E-01	7,24E-03	7,55E-02	4,33E-01	5,51E-03	3,42E-04	MND	MND	MND	MND	MND	5,86E+01	MND	MNR	8,05E-05	1,08E-03	2,16E-04	-1,72E-01
Ecotoxicity (freshwater)	CTUe	1,68E+02	9,44E-01	1,15E+01	1,80E+02	7,74E-01	2,43E-01	MND	MND	MND	MND	MND	7,93E+03	MND	MNR	1,52E-02	1,03E+00	3,78E+01	-6,27E+01
Human toxicity, cancer	CTUh	7,43E-09	4,00E-11	2,04E-10	7,68E-09	1,58E-11	8,37E-12	MND	MND	MND	MND	MND	1,21E-07	MND	MNR	3,74E-13	2,49E-11	2,34E-12	7,92E-10
Human tox. non-cancer	CTUh	1,84E-07	1,07E-09	5,26E-09	1,90E-07	1,02E-09	1,74E-10	MND	MND	MND	MND	MND	4,48E-06	MND	MNR	1,51E-11	1,04E-09	6,23E-11	-7,27E-08
SQP ⁷⁾	-	1,29E+01	2,71E-01	6,16E+00	1,94E+01	5,07E-01	2,46E-02	MND	MND	MND	MND	MND	8,48E+02	MND	MNR	1,95E-02	1,93E-01	5,20E-02	-2,95E+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	2,09E+00	8,13E-03	2,39E+00	4,48E+00	6,87E-03	2,97E-03	MND	MND	MND	MND	MND	6,79E+02	MND	MNR	1,90E-04	2,51E-02	2,26E-03	-2,93E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,93E+00	1,93E+00	0,00E+00	-1,93E+00	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	0,00E+00	0,00E+00	-1,69E+00
Total use of renew. PER	MJ	2,09E+00	8,13E-03	4,31E+00	6,41E+00	6,87E-03	-1,92E+00	MND	MND	MND	MND	MND	6,79E+02	MND	MNR	1,90E-04	2,51E-02	2,26E-03	-4,62E+00
Non-re. PER as energy	MJ	5,61E+01	1,58E+00	8,77E+00	6,64E+01	1,19E+00	2,91E-02	MND	MND	MND	MND	MND	5,23E+03	MND	MNR	1,69E-02	1,91E-01	3,72E-02	-2,91E+01
Non-re. PER as material	MJ	6,68E-01	0,00E+00	1,56E-02	6,84E-01	0,00E+00	-1,56E-02	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	-3,34E-01	-3,34E-01	-7,76E-03
Total use of non-re. PER	MJ	5,67E+01	1,58E+00	8,79E+00	6,71E+01	1,19E+00	1,35E-02	MND	MND	MND	MND	MND	5,23E+03	MND	MNR	1,69E-02	-1,43E-01	-2,97E-01	-2,92E+01
Secondary materials	kg	1,81E-02	3,71E-04	1,51E-01	1,69E-01	1,60E-04	6,90E-05	MND	MND	MND	MND	MND	4,81E-01	MND	MNR	4,69E-06	1,58E-04	9,50E-06	1,56E-01
Renew. secondary fuels	MJ	5,73E-04	1,52E-06	1,07E-02	1,13E-02	1,52E-06	3,35E-07	MND	MND	MND	MND	MND	3,34E-03	MND	MNR	4,74E-08	5,60E-06	5,75E-07	-2,61E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	2,32E-02	8,38E-05	4,39E-03	2,76E-02	7,88E-05	2,58E-05	MND	MND	MND	MND	MND	3,08E+00	MND	MNR	2,19E-06	1,69E-04	2,99E-05	-7,13E-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	8,98E-01	1,28E-03	2,06E-02	9,20E-01	7,81E-04	8,18E-04	MND	MND	MND	MND	MND	3,38E+01	MND	MNR	2,24E-05	3,18E-03	0,00E+00	-4,37E-01
Non-hazardous waste	kg	1,51E+01	1,25E-02	9,93E-01	1,61E+01	1,15E-02	8,44E-03	MND	MND	MND	MND	MND	9,05E+02	MND	MNR	3,68E-04	8,05E-02	7,70E-02	-8,40E+00
Radioactive waste	kg	1,25E-04	1,13E-05	2,29E-05	1,59E-04	8,42E-06	1,31E-07	MND	MND	MND	MND	MND	1,61E-02	MND	MNR	1,13E-07	4,42E-07	0,00E+00	-6,53E-05

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	0,00E+00	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	1,51E-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	0,00E+00	MND	MNR	0,00E+00	1,56E-02	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,41E-01	MND	MND	MND	MND	MND	0,00E+00	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	5,28E+00	1,19E-01	5,54E-01	5,95E+00	8,34E-02	1,95E-02	MND	MND	MND	MND	MND	3,93E+02	MND	MNR	1,11E-03	6,96E-02	3,60E-03	-2,89E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1,72E-07	2,02E-08	3,80E-08	2,30E-07	1,51E-08	1,50E-10	MND	MND	MND	MND	MND	1,13E-05	MND	MNR	2,05E-10	9,11E-10	2,47E-10	-7,55E-08
Acidification	kg SO ₂ e	4,46E-02	1,69E-03	1,48E-03	4,77E-02	4,14E-04	1,43E-05	MND	MND	MND	MND	MND	1,70E+00	MND	MNR	3,70E-06	1,14E-04	1,37E-05	-2,52E-02
Eutrophication	kg PO ₄ ³ e	1,53E-02	2,08E-04	1,08E-03	1,66E-02	7,02E-05	1,38E-04	MND	MND	MND	MND	MND	7,39E-01	MND	MNR	8,43E-07	4,28E-05	8,58E-05	-7,71E-03
POCP ("smog")	kg C ₂ H ₄ e	2,45E-03	4,27E-05	8,78E-05	2,58E-03	1,11E-05	4,45E-06	MND	MND	MND	MND	MND	6,82E-02	MND	MNR	1,45E-07	5,13E-06	1,12E-06	-1,27E-03
ADP-elements	kg Sbe	1,89E-04	9,97E-08	2,58E-06	1,92E-04	7,39E-08	4,44E-08	MND	MND	MND	MND	MND	1,88E-03	MND	MNR	2,56E-09	1,39E-06	5,76E-09	-2,54E-05
ADP-fossil	MJ	5,60E+01	1,58E+00	8,77E+00	6,64E+01	1,19E+00	2,91E-02	MND	MND	MND	MND	MND	5,22E+03	MND	MNR	1,69E-02	1,91E-01	3,72E-02	-2,91E+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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

22.03.2024



ANNEX 1: AVERAGING TABLE

CODE	DESCRIPTION	IP	luminaire lumen	net weight	GWP [EN15804+A1]	% diff	GWP - total [EN15804+A2]	GWP fossil [EN15804+A2]
28402 XXX0	ENTERO ROUND S	IP20	1078	0,229	5,20	12,7%	5,08	5,29
28406 XXX0	ENTERO ROUND S IP	IP44/20	663	0,264	5,95	/	5,85	6,06
28439 XXX0	ENTERO ROUND S X	IP65	628	0,287	6,37	+6,9%	6,27	6,48