scanmast

KNOWLEDGE FOR BUILDING TOMORROW

EPD Hub

ENVIRONMENTAL PRODUCT DECLARATION

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

Delta Tower
Scanmast AB

EPD HUB, HUB-2174
Published on 17.11.2024, last updated on 17.11.2024, valid until 17.11.2029.

One Click LCA Created with One Click LCA

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GENERAL INFORMATION

MANUFACTURER

Manufacturer	Scanmast AB
Address	Landsvägen 49, 792 95 Mora, Sweden
Contact details	info@scanmast.com
Website	www.scanmast.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 1.1, 5 Dec 2023
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	Jan Pettersson
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Lucas Pedro Berman, 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	Delta Tower
Additional labels	Scanmast
Product reference	-
Place of production	Mora
Period for data	Calender year 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	-

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of Delta products
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2,53E+00
GWP-total, A1-A3 ($kgCO_2e$)	2,50E+00
Secondary material, inputs (%)	114
Secondary material, outputs (%)	95
Total energy use, A1-A3 (kWh)	10.5
Net freshwater use, A1-A3 (m^3)	0.03

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Scanmast is a provider of turnkey critical infrastructure solutions and value-added services to Nordic customers supported by a high-quality proprietary mast and tower offering. Our customer segments are Telecom, Lighting, Surveillance, Energy Infra and Maintenance. Scanmast manages entire projects from design and planning to construction, installation, and maintenance, and is the leading provider of masts and towers for lighting and telecommunications in Sweden.

PRODUCT DESCRIPTION

DELTA is a highly valued tower for lighting roads, parking lots, airports, sports fields, racetracks and port areas. DELTA is a smart tower that can be built up to 42 metres tall. The tower comprises welded sections 2-6 metres in length, which are optimised and built to meet your needs. The sections can be inserted into each other, which means the total transport volume is never larger than the size of the base section. The stable construction of the DELTA tower also makes it highly suitable for housing camera surveillance and telecommunications equipment. Facts Max. height: 42 metres. Construction: Welded 2-6 metre sections. Areas of use: Telecom, lighting, surveillance. Material: Hot-dip galvanised steel Benefits Long tried and tested. Suitable for both coastal and mountain climates. Compact transport volume. Standardised sections. Precast foundations. Easy to assemble for quick installation. Surface-treated for long service life. CE-certified.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	EU
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	0.0069

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of Delta products
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	Deconstruction/ demolition	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.

Scanmast Delta manufacturing process described in a flowchart in the EPD and below in text: As raw materiel is hot dip galvanized steel lattice sections and accessories coming from our suppliers considered. Processes at our suppliers are e.g. cutting, bending, welding and hot dip galavnizing. Material origin is EU. We have considered deliveries by lorry from 10 suppliers with a transport distance from 1 to 1195 km to our warehouse. At our facilities is a quality check and packing to kits performed. An EUR wooden pallet is used as packing material for transport. Energy for unloading and loading truck by wheel loader I included in the EPD.

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 distance is defined according to the PCR. Average distance of transportation from Scanmast to building site is assumed to be 467 km based on 1 year delivery data and the transportation method is assumed to be lorry.

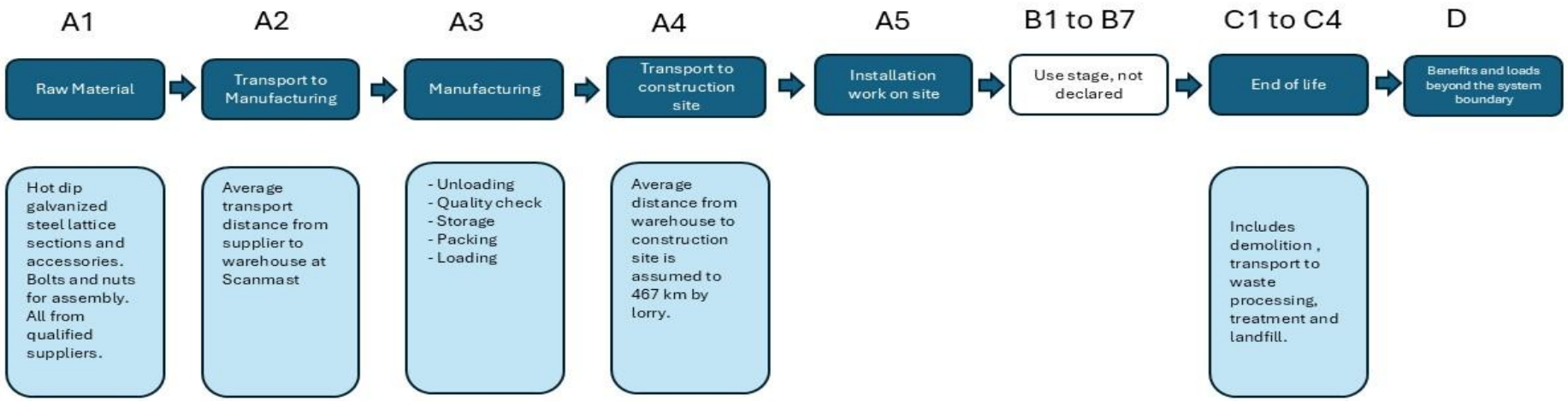
PRODUCT USE AND MAINTENANCE (B1-B7)

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)

Demolition is assumed to consume 0,01 kWh/kg of product as generic value. Transportation distance to treatment is assumed as 50 km and 250 km for recycling. The transportation method is assumed to be lorry. 95% of steel is assumed to be recycled based on World Steel Association. It is assumed that the remaining 5 % of steel is taken to landfill for final disposal. Due to the recycling process, the end-of-life product is converted into recycled/landfill for steel, while the wooden pallet (31%) is incinerated for energy recovery.

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 material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	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	2,44E+00	8,35E-02	-1,87E-02	2,50E+00	4,14E-02	2,64E-02	MND	MND	MND	MND	MND	MND	MND	4,02E-03	3,13E-02	2,08E-02	2,64E-04	-7,81E-01
GWP – fossil	kg CO_2e	2,43E+00	8,35E-02	6,65E-03	2,53E+00	4,14E-02	1,03E-03	MND	MND	MND	MND	MND	MND	MND	4,01E-03	3,13E-02	2,08E-02	2,63E-04	-7,82E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-2,54E-02	-2,54E-02	0,00E+00	2,54E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,36E-04
GWP – LULUC	kg CO_2e	2,55E-03	3,24E-05	4,92E-05	2,63E-03	1,55E-05	2,59E-07	MND	MND	MND	MND	MND	MND	MND	9,39E-06	1,32E-05	2,73E-05	2,49E-07	8,31E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,96E-07	1,96E-08	2,20E-09	2,18E-07	1,03E-08	5,06E-11	MND	MND	MND	MND	MND	MND	MND	2,03E-10	7,41E-09	2,57E-09	1,07E-10	-2,12E-08
Acidification potential	mol H^+e	2,44E-02	2,72E-04	4,31E-05	2,48E-02	1,32E-04	2,20E-06	MND	MND	MND	MND	MND	MND	MND	2,29E-05	9,34E-05	2,64E-04	2,48E-06	-2,93E-03
EP-freshwater[2)]	kg Pe	1,36E-04	7,07E-07	3,38E-07	1,37E-04	2,95E-07	8,37E-09	MND	MND	MND	MND	MND	MND	MND	4,26E-07	2,38E-07	1,12E-06	2,76E-09	-6,44E-06
EP-marine	kg Ne	2,79E-03	5,98E-05	9,80E-06	2,86E-03	2,91E-05	1,00E-06	MND	MND	MND	MND	MND	MND	MND	3,04E-06	1,92E-05	5,58E-05	8,57E-07	-8,59E-06
EP-terrestrial	mol Ne	8,40E-02	6,63E-04	1,08E-04	8,48E-02	3,22E-04	8,66E-06	MND	MND	MND	MND	MND	MND	MND	3,45E-05	2,13E-04	6,45E-04	9,43E-06	-8,00E-03
POCP ("smog")[3)]	kg NMVOCe	8,41E-03	2,57E-04	4,14E-05	8,71E-03	1,27E-04	2,50E-06	MND	MND	MND	MND	MND	MND	MND	9,46E-06	8,30E-05	1,77E-04	2,74E-06	-4,44E-03
ADP-minerals & metals[4)]	kg Sbe	9,99E-05	2,03E-07	5,26E-08	1,00E-04	1,01E-07	1,00E-09	MND	MND	MND	MND	MND	MND	MND	3,69E-08	1,12E-07	2,80E-06	6,05E-10	-2,43E-05
ADP-fossil resources	MJ	3,40E+01	1,31E+00	2,57E-01	3,56E+01	6,61E-01	4,78E-03	MND	MND	MND	MND	MND	MND	MND	8,50E-02	4,78E-01	2,82E-01	7,22E-03	-6,82E+00
Water use[5)]	m^3e depr.	1,12E+00	5,84E-03	6,73E-03	1,14E+00	3,05E-03	4,32E-04	MND	MND	MND	MND	MND	MND	MND	2,26E-03	2,33E-03	5,47E-03	2,29E-05	3,15E-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.

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	4,84E+00	1,47E-02	1,74E-01	5,03E+00	8,56E-03	2,39E-04	MND	MND	MND	MND	MND	MND	MND	1,69E-02	7,14E-03	5,00E-02	6,27E-05	-9,62E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,23E-01	2,23E-01	0,00E+00	-2,23E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,40E-06
Total use of renew. PER	MJ	4,84E+00	1,47E-02	3,97E-01	5,25E+00	8,56E-03	-2,22E-01	MND	MND	MND	MND	MND	MND	MND	1,69E-02	7,14E-03	5,00E-02	6,27E-05	-9,62E-01
Non-re. PER as energy	MJ	3,12E+01	1,31E+00	1,45E-01	3,27E+01	6,61E-01	4,78E-03	MND	MND	MND	MND	MND	MND	MND	8,48E-02	4,78E-01	2,82E-01	7,22E-03	-6,58E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	3,35E-02	3,35E-02	0,00E+00	-3,35E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,50E-01
Total use of non-re. PER	MJ	3,12E+01	1,31E+00	1,78E-01	3,27E+01	6,61E-01	-2,87E-02	MND	MND	MND	MND	MND	MND	MND	8,48E-02	4,78E-01	2,82E-01	7,22E-03	-6,33E+00
Secondary materials	kg	1,14E+00	3,63E-04	8,44E-04	1,14E+00	1,86E-04	3,74E-06	MND	MND	MND	MND	MND	MND	MND	8,66E-06	1,64E-04	3,14E-04	1,52E-06	5,47E-01
Renew. secondary fuels	MJ	2,62E-02	3,66E-06	7,53E-03	3,38E-02	1,64E-06	3,66E-08	MND	MND	MND	MND	MND	MND	MND	7,07E-08	1,72E-06	1,63E-05	3,96E-08	-1,07E-04
Non-ren. secondary fuels	MJ	9,98E-12	0,00E+00	0,00E+00	9,98E-12	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	2,65E-02	1,69E-04	1,62E-04	2,68E-02	8,76E-05	1,76E-06	MND	MND	MND	MND	MND	MND	MND	7,17E-05	6,46E-05	1,65E-04	7,90E-06	-2,18E-02

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	5,68E-01	1,72E-03	4,22E-04	5,70E-01	7,08E-04	7,50E-06	MND	MND	MND	MND	MND	MND	MND	3,05E-04	5,63E-04	1,92E-03	0,00E+00	-4,81E-01
Non-hazardous waste	kg	4,89E+00	2,83E-02	8,94E-03	4,92E+00	1,23E-02	1,28E-02	MND	MND	MND	MND	MND	MND	MND	1,94E-02	9,99E-03	6,12E-02	5,00E-02	-1,59E+00
Radioactive waste	kg	1,72E-04	8,81E-06	1,74E-06	1,83E-04	4,56E-06	1,58E-08	MND	MND	MND	MND	MND	MND	MND	6,15E-07	3,28E-06	1,65E-06	0,00E+00	4,55E-07

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	1,45E-01	0,00E+00	0,00E+00	1,45E-01	0,00E+00	5,68E-03	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	4,38E-04	0,00E+00	0,00E+00	4,38E-04	0,00E+00	2,30E-04	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	6,54E-04	0,00E+00	0,00E+00	6,54E-04	0,00E+00	3,26E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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.

Lucas Pedro Berman, as an authorized verifier acting for EPD Hub Limited
17.11.2024