Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Lightmast

Includes following product variations
Lightmast 2-42m
Representative product: Lightmast 42m
from

STRIHL Scandinavia AB

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	
Type of EPD:	EPD of multiple products from a company based on a representative product.
EPD registration number:	EPD-IES-0031016
Version date:	2026-04-06
Validity date:	2031-04-06
	An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

GENERAL INFORMATION

Programme Information	
Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): *Construction products 2019:14, version 2.0.1, valid until 2030-04-07, UN CPC code: 4219*
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Chairs of the PCR Review: Rob Rouwette (chair), Claudia A. Peña (co-chair)

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ **Individual EPD verification without a pre-verified LCA/EPD tool** Third-party verifier: Camilla Landen, Hållbarhetsjouren Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: STRIHL Scandinavia AB
Address: Äskatorpsvägen 6, 439 74 Fjärås
Contact: Andreas Andersson
Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable:
LCA Practitioner, Jonathan Grenthe, TMC Sweden, Jonathan.grenthe@tmceurope.com
Description of the organisation: STRIHL Scandinavia AB is a Swedish lighting company that develops, manufactures, and supplies luminaires as well as Swedish-made masts and poles for outdoor and professional lighting applications. The company serves customers across the Nordic region, including municipalities and electrical contractors, with a focus on long service life, quality, and energy-efficient solutions. STRIHL offers complete lighting solutions for public outdoor environments (e.g., streets, parks, and sports venues) as well as indoor professional settings such as industrial facilities, warehouses, and sports halls. Its operations include the manufacturing, import, and sale of lighting products, with production based in Sweden. The company is headquartered in Fjärås (Kungsbacka municipality), Sweden. STRIHL is part of the Indutrade group and works with structured environmental and quality ambitions, emphasizing durable products and responsible resource use.
Website link: https://strihl.se/
Product-related or management system-related certifications: ISO 9001, ISO 14001 certified

PRODUCT INFORMATION

Product name: Lightmast 2 – 42m
Product identification: The Lightmast product group comprises lattice lighting masts intended for outdoor area lighting applications requiring elevated mounting heights and wide illumination coverage. The range includes modular mast variants from 2 m to 42 m, designed for installation in environments such as sports facilities, parking areas, industrial sites, port areas, traffic areas, airports, and other large outdoor spaces.

UN CPC code: *4219*

Product description: The Lightmast series is a modular lattice mast system developed to support floodlights and related lighting equipment in demanding outdoor environments. The product is intended for large-area outdoor lighting applications such as sports facilities, parking areas, industrial sites, port areas, freight terminals, substations, transformer stations, traffic areas, airports, ski installations and illuminated trails. The mast structure is manufactured in high-grade solid steel, grade S355J2, and is hot-dip galvanized in accordance with SS-EN ISO 1461 for durable outdoor use. The design and structural calculations are carried out in accordance with EN 1090-1.

The mast is based on a triangular lattice construction made from modular sections in solid round steel. The standard product system is built from prefabricated 6-metre sections that are inserted into each other to achieve the required installation height while also reducing transport volume and simplifying handling during installation. STRIHL's standard stocked sections are 230x6, 340x6, 450x6, 560x6, 690x6, 890x6 and 1160x6. Smaller upper sections are combined with larger and heavier lower sections in order to meet structural requirements as the mast height increases.

The product family covered by this EPD includes mast variants from 2 m to 42 m. Standard mast configurations are assembled from the 6-metre modular sections, while non-standard mast heights can also be provided through customized configurations based on the same construction principle. The differences between variants are therefore primarily related to total mast height, total mass, and the combination of sections used in the final assembly, while the material concept and intended function remain the same.

Lightmast 42m is selected as the representative reference product for the Lightmast product family. This is justified because all included Lightmast variants are based on the same fundamental construction principle, use the same main material (steel), and differ primarily in height, total mass, and the combination of modular 6-metre sections. Since the declared unit of the EPD is 1 kg of product, the environmental performance is assessed on a mass basis rather than per complete mast configuration. The 42 m variant is the most comprehensive configuration in the product family and includes the widest combination of section sizes, thereby reflecting the full structural design logic of the Lightmast range.

Table 1: Description of sections that are used for Lightmast.

Standard section	Length	Weight (kg)
Section 230x6	6 m	78
Section 340x6	6 m	104
Section 450x6	6 m	132
Section 560x6	6 m	221
Section 690x6	6 m	270
Section 890x6	6 m	331
Section 1160x6	6 m	525

Multiple products: The Light Mast product group included in this EPD comprises lattice lighting masts available in heights from 2 m to 42 m. All variants are based on the same fundamental product concept and are intended for the same type of outdoor lighting applications, but they differ in overall height and in the combination of modular mast sections used to build the final structure. The mast system consists of triangular modular sections in solid round steel, where each section has a standard length and specific cross-sectional dimensions. As the mast height increases, additional sections are required, and the section dimensions vary throughout the structure in order to meet functional and structural requirements. The upper sections are smaller, while the lower sections are larger and heavier. Since all variants are manufactured from the same main material and according to the same construction principle, the primary differences between the included products are related to mast height, total mass, and the number and size of sections included in the assembly. In this project, this means that taller variants have a higher material demand and therefore a higher potential environmental impact than shorter variants, while the underlying material composition and intended function remain the same. This project does only include the product lightmast without any accessories. The lightmast product is very often combined

with lighting fixtures but these can be chosen depending on the customers request, this is why the life cycle assessment and EPD of lightmast does not cover auxiliaries. Instead, separate LCA's and EPD's are performed for other lighting fixtures. Combining lightmast with Exact lighting fixture is the most popular combination.

Table 2: Product characteristics

Product name	Unit	Mass (kg)	Height (mm)	Outer round bar dimensions (mm)
Lightmast 2m	Piece	28	6000	230
Lightmast 42m	Piece	1661	42 000	1160, 890, 690, 560, 450, 340, 240

Name and location of production site(s): Äskatorpsvägen 6, 439 74 Fjärås

CONTENT DECLARATION

For the Lightmast product group, the declared product is presented as a representative product expressed as 1 kg of mast structure. This approach is used because all included Lightmast variants are based on the same modular construction principle and consist of the same main material, i.e. steel. The differences between the included mast variants are primarily related to total mast height, total mass, and the combination of modular sections used in the final assembly, rather than differences in material composition per kg. The environmental variation between mast variants is therefore mainly driven by the total amount of material used in each finished mast.

Table 3 presents the content declaration of the representative product scenario product. Note, however, that the environmental impact results are calculated per declared unit and are allocated across the product's constituent materials according to their respective shares. The product does not contain any substances of very high concern (SVHC) listed on the ECHA Candidate List in concentrations exceeding 0.1% (w/w) in any individual component, in accordance with REACH Article 33. Therefore, the product does not exceed any applicable threshold for SVHC and no SVHC substances need to be declared in this Environmental Product Declaration.

Table 3: Table of content, Lightmast representative product.

Component	Chemical composition	Weight (kg)	Distribution
Round steel bars	Coal: 0,25% Sour: 0,2% Mangan: 1,16% Phosphor: 0,011% Sulfur: 0,004% Aluminium: 0,035% Niobium: 0,019% Vanadiun: 0,010% Titanium: 0,017% Iron: 98,294%	1 kg	100%

Table 4: Packaging material

Component	Material	Weight (kg)
Packaging	Not relevant	Not relevant

Biogenic carbon content for both product and packaging is presented. The product and packaging does not contain any biogenic carbon content.

Table 5: Biogenic carbon content.

Materials	Mass (kg)	Biogenic carbon content (Dry weight)	Biogenic material, kg c/declared content
Packaging (Cardboard)	-	-	-
Product	-	-	-
Total	-	-	-

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Table 6: Recycled content

Component	Recycled content	Pre/Post consumer
Round steel bars	92,5%	89,5% Post consumer 3% Pre consumer

LCA INFORMATION

Declared unit: 1 kg
Time representativeness: 2025
Geographical scope: The geographical scope of this EPD for Lightmast is centred on STRIHL Lighting AB's operations in Fjärås, Sweden, where the product is assembled and welded according to customer requirements. In contrast to the luminaire products, Lightmast also includes an additional processing step outside Sweden, since the welded mast is transported to a facility in Poland for surface treatment before being returned to STRIHL's site in Fjärås. The upstream product stage therefore combines global and European background data for raw materials and transport with site-specific foreground processes in Sweden and Poland. For downstream life cycle stages, the geographical scope reflects STRIHL's main customer markets in Sweden, Norway, and Finland, which are also used for modelling distribution, installation-related assumptions where relevant, end-of-life treatment, and module D. In the system boundary table, modules A1 and A2 are represented with global scope, A3 is represented by Swedish foreground production together with the product-specific surface treatment route in Poland, and modules A4–D are modelled using Scandinavian market assumptions for Sweden, Norway, and Finland. Packaging for Lightmast is considered negligible and is therefore excluded from the product-specific modelling.

Database(s) and LCA software used: Ecoinvent 3,11 and Simapro software.

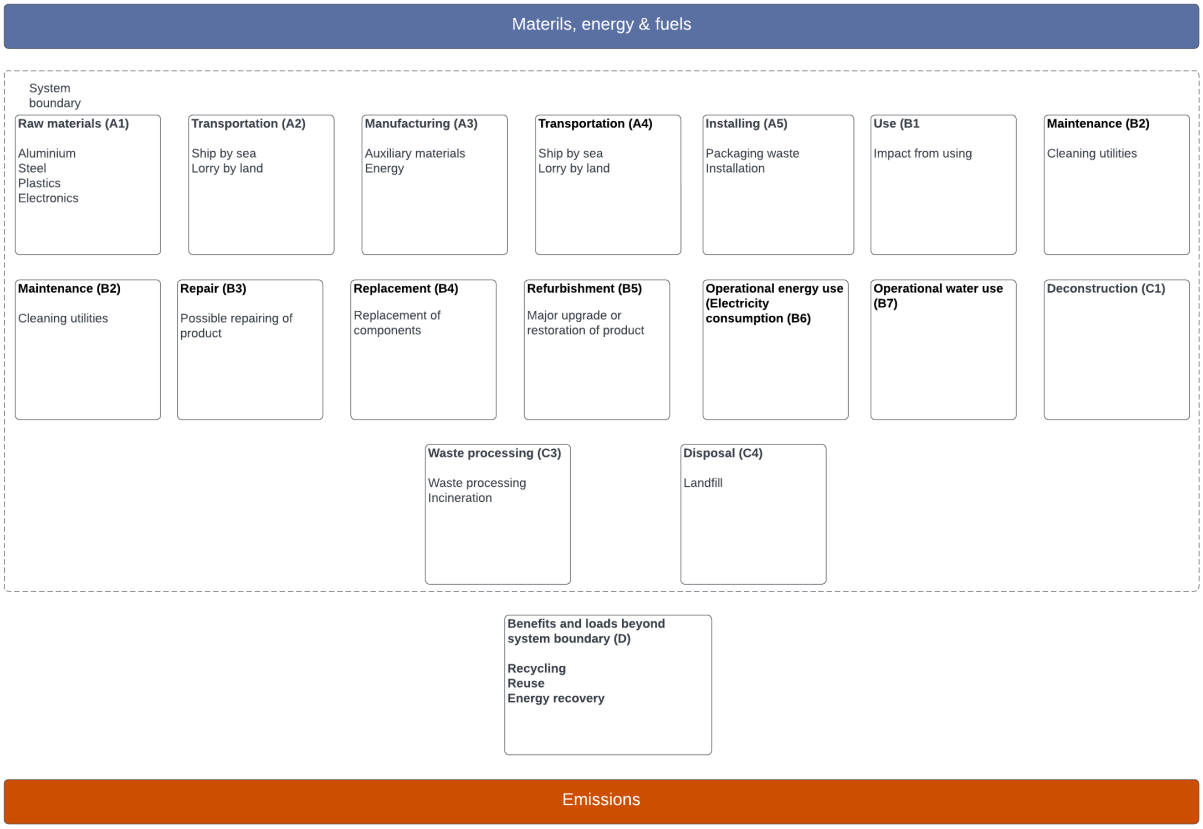
EPD/LCA Tool used: Simapro Software

Description of system boundaries:

The system boundary applied in this EPD is cradle-to-grave including module D, i.e., modules A1–A3, A4, A5, B1–B7, C1–C4 and D are covered in accordance with EN 15804+A2 and the applicable PCR. For Lightmast, the product stage includes raw material supply, upstream transport, welding/assembly, and surface treatment, where the latter is included in module A3 as part of the manufacturing stage. Module A4 covers transport from the production site in Fjärås to the average customer market in Sweden, Norway, and Finland. Module A5 is included, but installation itself is considered negligible because the mast is assumed to be installed manually in the model, and packaging is treated as negligible for Lightmast. During the use stage, modules B1–B7 are declared, but no operational electricity use is included since Lightmast is assessed as a passive structural product; accordingly, module B6 is zero and the remaining B-modules are also assumed to be zero because no maintenance, repair, replacement, refurbishment, or operational water use is modelled. End-of-life is represented through modules C1–C4, where C1 covers deconstruction/dismantling, C2 transport to waste treatment, C3 waste processing including recycling preparation and incineration-related treatment, and C4 final disposal. Module D reports potential benefits and loads beyond the system boundary associated primarily with material recovery, which is particularly relevant for this steel-intensive product. No life cycle stages required for the declared cradle-to-grave system boundary have been omitted; where individual modules are reported as zero or negligible, this reflects the stated modelling assumptions for Lightmast.

Process flow diagram:
The process flow diagram summarizes the product system contributing to the environmental impacts of Lightmast across its life cycle. Module A1 includes the extraction and processing of raw materials into the main product constituents, which for Lightmast are dominated by steel. A2 covers transport of materials and components to the production system and also reflects the additional transport steps associated with the product's external surface-treatment route. A3 represents the manufacturing stage

and differs from the luminaire products in that Lightmast is assembled and welded at STRIHL's facility in Fjärås according to customer requirements, after which it is transported to a facility in Poland for surface treatment and then returned to Fjärås. As a result, the environmental impact in A3 is linked not only to supporting site electricity and heating, but also to the welding and surface-treatment operations included in the product stage. A4 includes outbound distribution from STRIHL to the average customer market in Sweden, Norway, and Finland. A5 is declared, but installation and packaging are considered negligible for Lightmast and therefore do not make a significant contribution. All B-modules are declared, but no relevant environmental impact occurs during use, since Lightmast is a passive structural product without operational energy or water use. Modules C1–C4 include deconstruction, transport to waste treatment, waste processing and sorting, and final treatment of the material fractions. For recyclable fractions, the End-of-Waste point is reached after waste processing in module C3, while the potential benefits and loads associated with subsequent material recovery are reported in module D, which is particularly relevant for the steel content of Lightmast.



More information

Module A1–A2

Module A1 covers the raw material supply of the declared Lightmast representative product. Lightmast is modelled as a steel-intensive structural product consisting of round steel bars and excluding luminaires and other optional accessories. In this study, the declared product is expressed as 1 kg of Lightmast, since the included mast variants are based on the same material concept and differ mainly in height and total mass rather than in composition per kg. The main raw material input for Lightmast is based on a supplier-specific EPD for the steel round bars used in the mast. This supplier-specific EPD was used directly to represent the main A1 burden and was considered product-specific primary data for the dominant material flow. Material losses and production scrap were not modelled as separate

foreground flows in A1, but are considered to be included in the underlying datasets used in the model. No supplier-documented recycled content has been declared for the Lightmast product.

Module A2 covers transport of materials and semi-finished product flows associated with the production route to STRIHL's facility in Fjärås. For Lightmast, the supplier is located in Poland, and the upstream steel EPD already includes raw material transport within the supplier's declared system. In addition to this, product-specific transport flows were modelled to reflect the actual logistics route linked to mast production and outsourced treatment. The A2 route includes road and sea transport between Trelleborg and Gothenburg, Swinoujscie and Trelleborg, and Swinoujscie and Szczecin. These flows represent the logistics chain associated with welding and the outsourced surface-treatment route. Transport was modelled using ecoinvent freight datasets for lorry and sea transport. Load factor and empty return assumptions are included in the underlying transport datasets; for the applied road freight dataset this corresponds to a 50% load factor reflecting empty return trips.

Module A3

Module A3 represents the manufacturing stage of Lightmast and is modelled using primary data collected from STRIHL Lighting AB for the foreground processes at the production site. Lightmast includes additional product-specific processing. At STRIHL's facility in Fjärås, the mast is assembled and welded according to customer-specific requirements. After welding, the mast is transported to an external contractor in Poland for surface treatment and is then transported back to STRIHL's site in Fjärås. In the final model, the outsourced surface treatment and the associated transport flows to and from Poland are included in A3, since these activities are considered part of the manufacturing process before the finished product leaves the production system. However, the surface treatment process is modelled using a dataset to illustrate this process.

Shared site-related processes, such as general electricity and heating, are economically allocated, while Lightmast-specific processes such as welding and external surface treatment are only assigned to this product group. According to the production data used in the study, no hazardous or radioactive waste is generated in relation to the assessed Lightmast system, while non-hazardous production waste is generated and allocated to the declared unit. The study further states that all waste handling included in A3 is modelled up to end-of-waste where applicable, or otherwise to final disposal. No direct emissions from production have been reported, and no consumables have been separately reported in the foreground inventory. The most important A1–A3 result drivers for Lightmast are the supplier EPD for round bars, road transport, welding, and zinc coating.

Module A4

Module A4 covers outbound distribution of the finished Lightmast from Fjärås to the customer market. Distribution is modelled using STRIHL's 2025 market split, where 69% of sales are to Sweden, 20% to Norway, and 11% to Finland. Since detailed customer addresses were not available, representative destinations were selected for each country and used to calculate average transport distances. These country-specific averages were then combined using the documented sales distribution.

The resulting average distribution scenario consists of 628.8 km by road freight and 43.6 km by ferry transport from Fjärås to customer. As in the rest of the study, the selected ecoinvent freight datasets are used to represent the transport operations. Following datasets were used:

Load factor	Fuel type	Vehicle type	Transport Dataset
50%	Diesel	Truck	Transport, freight, lorry 16-32 metric ton, EURO5 | transport, freight, lorry 16-32 metric ton, EURO5 | Cutoff, U
50%	Heavy fuel oil	Ferry	Transport, freight, sea, ferry, heavy fuel oil {GLO}| transport, freight, sea, ferry, heavy fuel oil | Cut-off, U

Module A5

Module A5 includes installation of the Lightmast product at the site. In the model, installation is represented by a short local transport step and the use of diesel-powered lifting equipment, reflecting the practical need to handle heavy mast sections during installation. For the declared Lightmast representative product, the installation scenario therefore includes road transport and diesel use in building machinery. Packaging is excluded for Lightmast in the study due to its low relevance and is considered negligible for this product group. As a result, module A5 is primarily represented by installation transport and lifting operations.

Modules B1–B7

Modules B1–B7 are declared but considered negligible for Lightmast under the assumptions of the study. Lightmast is assessed as a passive structural product and does not generate direct emissions during use, does not consume operational water or electricity, and is not modelled with repair, replacement, or refurbishment activities during the use stage. The use stage is therefore limited and does not contribute significantly to the overall environmental profile of the declared product.

Modules C1–C4

Modules C1–C4 describe the end-of-life stage of Lightmast, including deconstruction, transport to waste treatment, waste processing, and final disposal. The modelling follows the cut-off approach in accordance with the applied standards and PCR, meaning that the burdens from waste treatment remain with the product system generating the waste, while benefits from subsequent material recovery are reported separately in module D. In C1, Lightmast is modelled as deconstruction/demolition of a steel product using diesel burned in building machinery, following the PCR default assumption for steel products. In C2, the discarded Lightmast product is assumed to be collected by a third-party waste management company and sent to a recycling route. Waste transport is modelled as 80 km by road transport, in line with the PCR default scenario.

The model therefore assumes that the product enters a recycling-oriented waste management system at end of life. However, the final handling at the treatment facility is modelled using the waste scenarios applied in the study for Sweden, Norway and Finland, based on the market split used throughout the assessment. This means that, although the product is assumed to be collected for recycling, the final treatment outcome at the receiving waste facility may include both material recycling and residual treatment depending on the waste scenario applied. In C3, the collected steel is prepared for recycling, and in C4, the remaining fraction not captured for recycling in the applied waste scenarios is modelled as final disposal. Since Lightmast is a steel-based product, the end-of-life stage is mainly governed by steel recovery and the waste treatment assumptions used for the Nordic market scenario.

Module D

Module D reports the potential benefits and loads beyond the system boundary associated with material recovery after the end-of-waste point has been reached. At the end of life, 100% of the product is assumed to be collected and sent to relevant waste treatment processes for recycling. In line with the cut-off approach, these benefits are not credited to the original product system before waste generation, but are reported separately in module D. For Lightmast, module D is particularly relevant because the product is dominated by steel, and the report identifies steel recycling as the main source of potential avoided burdens beyond the system boundary.

Allocation

Allocation procedures follow the cut-off approach described in the report. No co-product allocation is applied. Allocation for electricity, heat and waste data in module A3 is based on yearly sales of the included products relative to STRIHL's total yearly sales, and economic allocation is used for the shared site processes. Lightmast accounts for 11.3% of annual sales according to the allocation basis used in the study.

At the same time, the report states that all processes specifically related to Lightmast are allocated only to this product variant, while the only shared processes are mainly electricity usage required to maintain the facility and test products. This means that Lightmast receives an allocated share of common site electricity, whereas welding and surface treatment are treated as product-specific processes.

Summary of dataquality assessment:

Overall, the data quality for Lightmast is considered relatively strong compared with the luminaire products, since the product is dominated by one main raw material, steel, for which an underlying supplier EPD has been used in the modelling. This gives the study a more product-specific basis for the main material input than would have been the case if generic background datasets alone had been used. However, since no verified information was available on the share of primary data embedded in that supplier EPD, a conservative assumption of 0% primary data contribution was applied for that part of the inventory when assessing the primary data share in A1–A3. The modelling is performed in SimaPro using ecoinvent v3.11 and the data quality assessment combines a general evaluation of temporal, geographical and technical representativeness with a screening of the most influential datasets for Lightmast.

For the product stage (A1–A3), the climate-change result is driven by the main steel input together with a limited number of supporting processes, particularly transport, welding and surface-treatment related datasets. The primary data contribution to GWP-GHG in A1–A3 is reported as 26.4%, mainly related to site-specific electricity use and foreground manufacturing data, while the remaining share is represented by the supplier EPD for the steel input and by secondary datasets for transport, welding, zinc coating and other background processes. Temporal representativeness is considered good, since site-specific production data were collected for the year 2025 and the applied background datasets are regarded as recent, although some supporting sources may pre-date 2025. Geographical representativeness is assessed as generally good to moderate: supplier- and customer-specific information has been used where available, while broader proxy regions such as RER, RoW and GLO are applied for certain background processes where no more specific dataset was available. Technical representativeness is considered generally good, since Lightmast consists of one homogeneous main material and the modelling of the main steel input is supported by a product-specific EPD, while remaining uncertainty is mainly linked to supporting datasets for transport and surface treatment rather than to the core material itself. To strengthen reliability, the applied secondary datasets were subjected to a proportionate plausibility screening. The remaining limitations are therefore mainly associated with transport- and

coating-related background data, and with the lack of verified information on the internal primary data share of the supplier EPD, rather than with the modelling of the main steel input itself.

Infrastructure and capital goods: Infrastructure and capital goods are included in the background datasets applied in this study. The study uses Ecoinvent v3.11 datasets, which inherently contain contributions from infrastructure and capital goods as part of the dataset system modelling. Consequently, these contributions are reflected in the results through the use of the selected background data.

Infrastructure and capital goods related to electricity and energy supply are included in this LCA through the applied ecoinvent 3.11 datasets. The electricity and energy datasets used in the model include the upstream infrastructure required for generation and supply (e.g., power plants and associated equipment) in accordance with the dataset system boundaries, and no additional, separate modelling of electricity/energy infrastructure has therefore been performed outside the selected ecoinvent processes.

	Product stage			Distribution/ installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	SE	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI	SE, NO, FI
Share of primary data	72,6%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites						-	-	-	-	-	-	-	-	-	-	-	-

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
A1 manufacturing of steel	Collected data	Supplier EPD	2025	Primary	46,3%
A1 Packaging	Collected data	EPD Owner/Ecoinvent v3.11	2025	Secondary data	0%
A2 Transportation of raw materials	Database	EPD owner/Ecoinvent v3.11	2025	Secondary data	0%
A3 Generation of electricity used in manufacturing/assembling	Collected data	EPD Owner	2025	Primary data	26,4%
Other Processes (A1-A3)	Collected data/Database	Ecoinvent v3.11	2025	Secondary data	0%
Total share of primary data, of GWP-GHG results for A1-A3			72,7%		

The table below presents the four datasets that each contribute more than 10% to GWP-total in modules A1–A3. As shown, steel production is the largest contributor, followed by transport and the welding process.

Category	Unit	Value	Dataset
GWP-Total	kg CO_2 eq.	3,52E-01	EPD of Round Bars
GWP-Total	kg CO_2 eq.	2,99E-01	Transport, freight, lorry, 16-32 metric ton, diesel, EURO 5 {RER}| transport, freight, lorry, 16-32 metric ton, diesel, EURO 5 | Cut-off, S
GWP-Total	kg CO_2 eq.	9,06E-02	Welding, arc, steel {RER}| welding, arc, steel | Cut-off, S
GWP-Total	kg CO_2 eq.	7,44E-02	Zinc coat, pieces {RER}| zinc coating, pieces | Cut-off, S

Impact from 1 kWh electricity using “Electricity, high voltage {SE}| electricity production, hydro, reservoir, non-alpine region | Cut-off, U”

**Impact from 1 kWh electricity using “Electricity, high voltage {SE}| electricity production, hydro, reservoir, non-alpine region	Cut-off, U”**		
Impact category	Unit	Unit
GWP-total	kg CO2-eq	0,051

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	7,61E-01	1,25E-01	8,82E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,99E-04	1,52E-02	2,12E-01	6,88E-03	-1,57E+00
GWP-biogenic	kg CO_2 eq.	3,02E-03	8,13E-05	1,80E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,07E-08	1,04E-05	1,28E-01	5,87E-03	-2,62E-03
GWP-fossil	kg CO_2 eq.	7,53E-01	1,25E-01	8,82E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,99E-04	1,52E-02	8,39E-02	1,00E-03	-1,57E+00
GWP-luluc	kg CO_2 eq.	4,95E-03	4,21E-05	9,07E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,08E-08	5,04E-06	6,37E-06	2,62E-09	-6,72E-04
ODP	kg CFC 11 eq.	6,89E-09	2,68E-09	1,31E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,92E-12	3,32E-10	2,35E-10	3,82E-13	-8,14E-09
AP	mol H^+ eq.	3,77E-03	5,38E-04	7,87E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,56E-06	4,89E-05	1,20E-04	6,10E-07	-6,22E-03
EP-freshwater	kg P eq.	1,48E-04	8,33E-06	2,85E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,28E-08	1,04E-06	1,09E-05	8,27E-07	-1,08E-03
EP-marine	kg N eq.	9,72E-04	1,68E-04	3,66E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,66E-06	1,65E-05	1,02E-04	1,69E-05	-1,37E-03
EP-terrestrial	mol N eq.	1,06E-02	1,84E-03	4,01E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,82E-05	1,79E-04	5,86E-04	1,23E-06	-1,47E-02
POCP	kg NMVOC eq.	3,16E-03	6,99E-04	1,20E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,43E-06	7,41E-05	1,55E-04	2,55E-06	-4,95E-03
ADP-minerals&metals*	kg Sb eq.	2,93E-05	4,08E-07	3,21E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,42E-10	5,13E-08	1,64E-08	9,17E-12	-1,29E-05
ADP-fossil*	MJ	1,04E+01	1,76E+00	1,15E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,19E-03	2,16E-01	1,50E-01	3,34E-04	-1,63E+01
WDP*	m^3	1,54E-01	6,71E-03	2,46E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,11E-05	8,37E-04	8,81E-03	7,14E-07	-3,57E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. Disclaimer: The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). Biogenic carbon leaving the product system in module A5 has not been balanced out in modules A1–A3. The associated biogenic carbon flow is therefore accounted for in module A5 in accordance with Annex 2 of the PCR.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	7,58 E-01	1,25 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	3,99 E-04	1,52 E-02	8,39 E-02	1,00 E-03	-1,57 E+00

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.*

Resource use indicators

Results per functional or declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3,11E +00	2,81E -02	7,26E -03	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	3,27E -05	3,51E -03	8,26E -03	2,11E -06	-1,81E +00
PERM	MJ	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00
PERT	MJ	3,11E +00	2,81E -02	7,26E -03	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	3,27E -05	3,51E -03	8,26E -03	2,11E -06	-1,81E +00
PENRE	MJ	1,07E +01	1,87E +00	1,22E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	5,52E -03	2,29E -01	1,61E -01	3,55E -04	-1,73E +01
PENRM	MJ	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00
PENRT	MJ	1,07E +01	1,87E +00	1,22E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	5,52E -03	2,29E -01	1,61E -01	3,55E -04	-1,73E +01
SM	kg	9,25E -01	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00
RSF	MJ	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00
NRSF	MJ	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00
FW	m^3	0,00E +00	1,11E -01	3,20E -02	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	0,00E +00	1,44E -04	1,39E -02	3,16E -02	9,31E -06	-1,14E +01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Waste indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Output flow indicators

Results per functional or declared unit																
Indicator	**Unit**	**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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,18E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	1,11E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Additional LCA results (other environmental performance results) of the product(s)

Table 8 illustrates the variation between two Lightmast variants for GWP-GHG total when the results are normalized to 1 kg of product. The purpose is to show that the environmental impact per kg is identical for the included variants, since they are based on the same material composition and construction principle. The difference in total environmental impact between variants therefore arises from differences in mast height and total mass, rather than from differences in environmental impact per kg.

Table 7: Product variation, calculated using EN 15804.

Impact category	Unit	Belysningsmast - 2m (A1-A3), normalized to 1 kg	Belysningsmast - 42m (A1-A3), normalized to 1 kg
GWP - GHG	kg CO2 eq	7,61E-01	7,61E-01

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CLC	Co-location centre
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SE	Sweden
FI	Finland
NO	Norway
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse gas
GWP	Global Warming Potential (kg CO_2 eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO_2 eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO_2 eq.)

GWP-luluc	Global Warming Potential from land use and land use change (kg CO_2 eq.)
GWP-total	Total Global Warming Potential (kg CO_2 eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO_2 eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H^+ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m^3)
Resource Use Indicators	
PERE	Use of renewable primary energy excluding renewable primary energy resources used as raw materials (MJ)
PERM	Use of renewable primary energy resources used as raw materials (MJ)
PERT	Total use of renewable primary energy resources (MJ)
PENRE	Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials (MJ)
PENRM	Use of non-renewable primary energy resources used as raw materials (MJ)

PENRT	Total use of non-renewable primary energy resources (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m^3)
Waste Indicators	
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
SVHC	Substances of Very High Concern
EC No.	European Community Number
CAS No.	Chemical Abstracts Service Number

MJ	Megajoule
kg	Kilogram
m^3	Cubic Meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony Equivalents
P eq.	Phosphorus Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2 eq.	Carbon Dioxide Equivalents
kg C	Kilograms of Carbon
kg CO_2 eq.	Kilograms of Carbon Dioxide Equivalent
ND	Not Declared

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