Environmental Product Declaration

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

Lighting columns with motorized mobile top platform

from

NCM S.r.l

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company
EPD registration number:	EPD-IES-0028737
Version date:	2026-02-19
Validity date:	2031-02-18
	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

EPD of multiple products, based on a average product. This EPD covers multiple products listed in page 4 . The results for the environmental performance indicators declared in this EPD correspond to the average product.

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
E-mail:	support@environdec.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): CONSTRUCTION PRODUCTS PCR 2019:14 VERSION 2.0.1
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members. The review panel may be contacted via the Secretariat www.environdec.com/contact.

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Marcel Gomez Ferrer Marcel Gómez Consultoria Ambiental, info@marcelgomez.com Phone: +34 630 64 35 93 - Email: info@marcelgomez.com Approved by: The 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: NCM S.r.l.
Address: Via Bramante, 24 - 20020 MAGNAGO (MI) – Italy
Contact: ncm@ncm.it
Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable: Esalex srl, www.esalex.eu , mei@esalex.it
Description of the organisation:
The technological and production know-how, developed over three generations of growth, makes NCM today the ideal partner in the development of solutions dedicated to the lighting of large public and private spaces.

The technological evolution, established in Industry 4.0 production facilities covering an area of 50,000 sqm in Magnago, in the metropolitan city of Milan, allows the 50 selected professionals in the work team to optimally develop products and support structures for lighting.

NCM has achieved certification to testify it's commitment to high quality standard for products, energy efficency and environmental compliance;
• ISO 14001:2015
• ISO 45001:2018
• UNI EN ISO 3834 Part 2:2021
• EN 40-5:2002

More information : ncm@ncm.it

PRODUCT INFORMATION

Product name: Lighting columns with motorized mobile top platform
Product identification: Pole for streetlight and other usage
Visual representation (e.g., an image) of the product

UN CPC code: 42190 Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium; plates, rods, angles, shapes, sections, profiles, tubes and the like, prepared for use in structures, of iron, steel or aluminium; props and similar equipment for scaffolding, shuttering or pitpropping

Product description: The products under study are lighting columns, structures to hold one or more lanterns on the top or edge, consisting of one or more parts: a pole, possibly an extension piece and a bracket. An electric motor to elevate the top structure is included. Other denominations for this product are light pole, streetlight, lamp post, streetlamp.
Product are made of mainly steel and accessories, steel is obtained from sheet (coil) or tubes and galvanized with a zinc coating by an external company.
Lights are excluded.

Technical specification

- UNI EN 1461 – Hot-dip galvanizing coatings on finished ferrous products and steel articles.
- UNI EN 10025 – Hot-rolled products of steels for structural applications.
- UNI EN 15614 – Specification and qualification of welding procedures for metallic materials. Welding procedure qualification tests. Part 1: Arc and gas welding of steels.
- UNI EN ISO 15609 – Specification and qualification of welding procedures for metallic materials. Welding procedure specification. Part 2: Gas welding.
- UNI EN40 – Lighting poles. Part 2 – Part 3

Name and location of production site(s):

- Via G. Marconi, 103 - 20020 MAGNAGO (MI) - Italy
- Via Bramante, 24 - 20020 MAGNAGO (MI) - Italy

Geographical scope: Italy
The pretended communication of the EPD is B2B.

The products included in the study are:
Neofar, Megafar

More information : www.ncm.it

EPD shall not include rating, judgements, or direct comparisons with other products or companies.
“Other products” include previous or alternative versions of the studied product, i.e., the EPD shall not display changes in the environmental performance results of a product over time, or differences with regard to a hypothetical version of the product using, e.g., alternative production processes or input materials.
“Other companies” means that the EPD shall not in any way imply that the EPD owner is, for example, “a market leader” or “more sustainable” (or similar) compared to its competitors.

CONTENT DECLARATION

The mass (weight) of one unit of a product, per declared unit:
The declared unit of the study is 1 metric tonne of product with a useful life of 30 years.

Content of the product in the form of a list of materials and substances, and their mass:
The product is composed by the steel coated steel structure and comprehend:

- Metal accessories: Brackets, plates, adapters made of steel or aluminium
- Plastic accessories: Protective parts
- Electrical accessories: Terminal block (cables and lights excluded)
- Electric motor

Product components	**Weight, kg**	**Post-consumer material, weight-%**	**Biogenic material, weight-% and kg C/kg**
Steel, galvanized, zinc coated	967,5	8%	0
Metal accessories	2,0	0	0
Electrical accessories	2,1	0	0
Plastic accessories	10,1	0	0
Electric motor	18,3	0	0
TOTAL	1000,0	8%	
Use Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Wood	7,2	0,72%	0,47
Plastic	4,2	0,42%	0,00
TOTAL	11,4	1,14%	0,30

Information on the environmental and hazardous/toxic properties of a substances contained in the product:
During the life cycle of the product any hazardous substance listed in the “Candidate List of Substances of Very High Concern (SVHC) for authorization” has not been used in a percentage higher than 0,1% of the weight of the product.

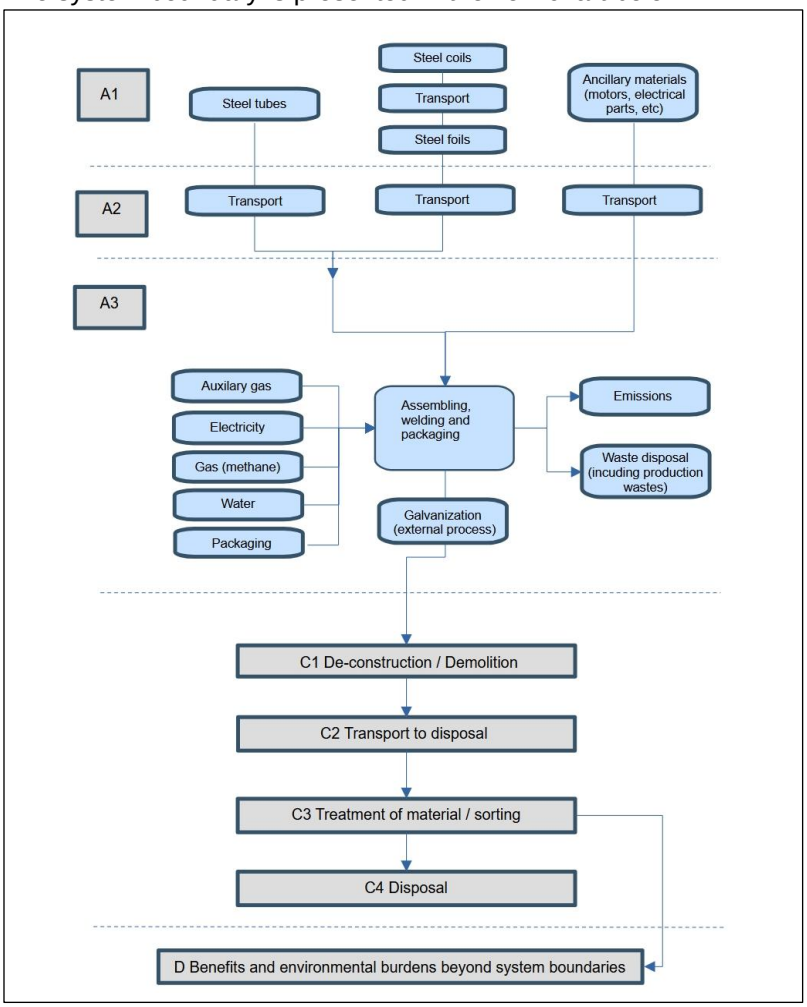
The declared share of biogenic/recycled materials:
The total share of biogenic carbon in product is 0%

LCA INFORMATION

Declared unit: The declared unit of the study is 1 metric ton of product
Time representativeness: 2024
Geographical scope: Italy and global, product manufactured in Italy, distribution global
Product distribution: BtoB
Database(s) and LCA software used: Ecoinvent 3.11(database); Simapro v.10.2.0.3 for the elaboration
Description of system boundaries:
Cradle to gate with modules C1–C4 and module D (A1–A3 + C + D);

Process flow diagram:

The system boundary is presented in the flow chart below:



The production process is characterized by innovative, highly automated and digitalised methods and technologies which increase its energy efficiency.

The production process begins with the raw material supply, steel coil, tubes and ancillary material. The coils are cut, bended and welded to the desired shape and dimension of the pole, same for the tubes which are cut to the desired dimension.

Ancillary part are assembled and metal part are sent to galvanization for the zinc coating process, pole are then packed and stocked for the later distribution.

More information:

- The allocation is applied in the LCA study: when necessary, mass allocation is used.
- Cut-off: at least 95% of the energy and materials used by module has been introduced, as well as 99% of the total use of energy and materials
- The modularity principle, as well as the polluter payer principle have been followed
- The long-term emissions have not been included.
- Infrastructure are excluded.
- The next processes have not been included since its impact is not significant:
    - Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process.
    - Personnel-related impacts, such as transportation to and from work.

- The impact methods used are:
    - Environmental footprint 3.1
    - Cumulative energy demand (LHV) v. 1.01 for resource use
    - EDIP 2003 v. 1.07 for waste production.

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

- Module A1 – Raw material supply: this module includes the production of raw material.
- Module A2 – Transport: this module includes the transportation of raw materials from the production site to the furthest production site.
- Module A3 – Manufacturing: this module considers consumption of energy, resources and emissions in air for internal process and external.
  The electricity modelled on the Italian residual mix and Italian grid operator production data converted from high to medium voltage including other impacts (infrastructure and emission), losses are also accounted.
  The climate impact (GWP-GHG indicator) of electricity purchased in the manufacturing process (A3) is: 7,01E-01 kg CO2 eq./kWh

- Module C1 – Deconstruction/demolition: Default data are taken from Construction PCR:2019:14 v2.0.1 (table 4 sec 4.8.4) for steel.
- Module C2 – Transport to waste processing: the product is then transported to disposal; the scenario provides the transport for 80 km.
- Module C3 – Waste processing: Default data are taken from Construction PCR:2019:14 v2.0.1 (table 4 sec 4.8.4) for steel.
- Module C4 - Disposal:
    - Disposal of steel: according to wordsteel.org on a global scale 85% of construction steel is recycled so a 15% is sent to landfill disposal (source https://worldsteel.org/about-steel/facts/steelfacts/wider-sustainability/steel-recovery-rates-by-market/)
    - Disposal of accessories: According to a conservative global scenario are sent to landfill disposal
- Module D - Reuse-Recovery-Recycling potential: Module D calculates the potential environmental benefits and impacts of the recycling or reuse of materials. The benefits/impacts linked to the use of pre-consumer material in A1 module are accounted in D module, applying the formula of EN 15804:2012+A2:2019/AC:2021.
  Benefits are calculated for 85% of structural steel.

<u>Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):</u>

	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	It	It	It	ND	ND	ND	ND	ND	ND	ND	ND	ND	Glo	Glo	Glo	Glo	Glo
Share of primary data	10,02%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-3%; +4%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Modules/processes/life-cycle stages declared shall be noted with “X”.
Modules/processes/life-cycle stages not declared shall be marked as “ND”.
Geographical scope shall be reported by the country code(s) (e.g., UK, FR, DE) and/or name of the region(s) (e.g., EU 27, Global).

Data quality

A summary of the data quality assessment, in line with requirements of PCR in Section 4.6.4. is listed below. The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Manufacturing of raw materials	EPD	EPD S-P-07027	2022	Secondary data	0,00%
Manufacturing of raw materials	EPD	EPD-IES-0014415	2024	Secondary data	0,00%
Manufacturing of raw materials	Database	Ecoinvent v3.11	2024	Secondary data	0,00%
Transport of raw materials	Collected data, database	Ecoinvent v3.11	2024	Primary data	1,28%
Generation of electricity used in manufacturing of product	Collected data, database	Ecoinvent v3.11	2024	Primary data	2,41%
Gas consumption in manufacturing of product	Collected data, database	Ecoinvent v3.11	2024	Primary data	0,51%
Emissions in manufacturing of product	Collected data, database	Ecoinvent v3.11	2024	Primary data	0,00%
Wastes generated in manufacturing of product	Collected data, database	Ecoinvent v3.11	2024	Primary data	0,01%
Production of packaging	Collected data, database	Ecoinvent v3.11	2024	Primary data	5,32%
Internal production process	Collected data, database	Ecoinvent v3.11	2024	Primary data	0,48%
External production process	Collected data, database	Ecoinvent v3.11	2024	Secondary data	0,00%
Total share of primary data, of GWP-GHG results for A1-A3					**10,02%**

Data from Upstream EPD are a sum of primary and secondary, for a more conservative approach those are not considered on the total share of primary data GWP-GHG results for A1-A3

The EPD covers fixed structural pole from NCM Srl two production site in Manago (MI), Italy, which provided data for the period 2024. The product is manufactured through a process described above. Background data was sourced from the ecoinvent 3.11. The data quality assessment is based on EN15804 Annex E Table E-1. In general, time representation of the dataset's selection is very good for the studied product, the technical representation is good, the geographical representation is good. No poor or very poor data was found during the assessment of relevant data. Overall quality of data for each phase is:

- A1: Good
- A2: Good
- A3: Good
- C1-C4: Fair

ENVIRONMENTAL PERFORMANCE

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

Mandatory impact category indicators according to EN 15804

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	5,16E-01	-1,51E+03
GWP-fossil	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	5,16E-01	-1,52E+03
GWP-biogenic	kg CO_2 eq.	-3,15E-01	1,70E-05	7,79E-04	1,11E-04	4,34E-05	2,04E+01
GWP-luluc	kg CO_2 eq.	1,85E+00	1,54E-05	6,68E-04	1,00E-04	2,60E-05	-8,84E-01
ODP	kg CFC 11 eq.	1,68E-05	5,70E-09	1,55E-07	3,71E-08	7,41E-09	-7,28E-06
AP	mol H^+ eq.	1,04E+01	3,46E-03	3,70E-02	2,25E-02	4,64E-03	-6,14E+00
EP-freshwater	kg P eq.	3,95E-01	3,53E-07	9,13E-05	2,30E-06	1,69E-06	-9,71E-02
EP-marine	kg N eq.	2,38E+00	1,63E-03	1,28E-02	1,06E-02	2,12E-03	-1,28E+00
EP-terrestrial	mol N eq.	2,60E+01	1,79E-02	1,41E-01	1,16E-01	2,32E-02	-1,40E+01
POCP	kg NMVOC eq.	8,40E+00	5,34E-03	5,27E-02	3,47E-02	7,04E-03	-5,00E+00
ADP-minerals&metals*	kg Sb eq.	8,04E-02	1,31E-08	1,07E-06	8,55E-08	1,72E-08	-8,62E-03
ADP-fossil*	MJ	3,14E+04	4,90E+00	1,71E+02	3,19E+01	6,60E+00	-1,64E+04
WDP*	m^3	5,31E+02	3,66E-03	2,28E-01	2,38E-02	5,76E-03	-5,32E+02
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.*

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).

Information on biogenic carbon content

Results per functional unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	3,39E+00

Additional mandatory and voluntary impact category indicators

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	5,16E-01	-1,53E+03

Additional voluntary impact category indicators required by EN 15804

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
Ionising radiation**	**kBq U-235 eq**	3,07E-05	9,97E-08	8,37E-07	6,49E-07	1,32E-07	-1,41E-04
Particulate matter	**disease inc.**	1,79E+01	4,07E-04	1,33E-02	2,65E-03	6,53E-04	-1,98E+01
Human toxicity, non-cancer*	**CTUh**	1,99E+04	1,40E-01	1,73E+01	9,14E-01	2,52E-01	-9,74E+03
Human toxicity, cancer*	**CTUh**	7,70E-07	2,00E-11	9,30E-10	1,30E-10	3,55E-11	-2,01E-06
Ecotoxicity, freshwater*	**CTUe**	2,48E-05	3,68E-10	8,38E-08	2,40E-09	6,81E-10	-2,57E-05
Land use*	**Pt**	2,02E+03	8,32E-03	1,80E+00	5,42E-02	7,78E+00	-2,63E+03

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

***Disclaimer: This impact category mainly addresses the potential effects of low-dose ionising radiation on human health arising from the nuclear fuel cycle. It does not take into account the effects of possible nuclear accidents, occupational exposure, or the disposal of radioactive waste in underground facilities. Potential ionising radiation from soil, radon, and certain construction materials is also not captured by this indicator."*

Resource use indicators

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
PERE	MJ	1,79E+03	1,05E-02	3,41E-01	6,84E-02	2,89E-02	-1,44E+03
PERM	MJ	3,06E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,09E+03	1,05E-02	3,41E-01	6,84E-02	2,89E-02	-1,44E+03
PENRE	MJ	3,09E+04	4,90E+00	1,71E+02	3,19E+01	6,60E+00	-1,65E+04
PENRM	MJ	4,69E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	3,14E+04	4,90E+00	1,71E+02	3,19E+01	6,60E+00	-1,65E+04
SM	kg	1,33E+02	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
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	4,58E+01	3,12E-03	1,34E-01	2,03E-02	4,87E-03	-1,28E+02
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						

Waste indicators

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7,73E-01	3,36E-05	1,12E-03	2,19E-04	4,37E-05	-1,15E-01
Non-hazardous waste disposed	kg	9,06E+01	1,72E-04	1,45E-02	1,12E-03	1,89E+02	-8,46E+01
Radioactive waste disposed	kg	2,89E-01	2,29E-07	7,46E-06	1,49E-06	3,73E-07	-1,29E-02

Output flow indicators

Results per declared unit							
Indicator	**Unit**	A1-A3	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
Material for recycling	kg	2,33E+00	0,00E+00	0,00E+00	0,00E+00	8,22E+02	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
Exported energy, electricity	MJ	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

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

For EPD of multiple products, if the EPD does not claim compliance with ISO 21930, variations above 10% are allowed. In such cases, the LCA report shall include an explanation of the variation and a justification of the grouping of products, and the EPD shall (in the LCA information section) declare the variation of each impact indicator results for which the variation is above 10% and include an explanation of the variation. EPDs based on worst-case results, that do not claim compliance with ISO 21930, are exempted from the requirement to declare the variation if above 10%.

The variability of results declared below is between the average product and the minimum/maximum product considering A to C modules.

Core environmental impact indicators (MANDATORY)	Min	Max
Global warming potential - total (GWP-total)	-3%	4%
Global warming potential - fossil fuels (GWP-fossil)	-3%	4%
Global warming potential - biogenic (GWP-biogenic)	-1217%	628%
Global warming potential - land use and land use change (GWP-luluc)	-34%	19%
Depletion potential of the stratospheric ozone layer (ODP)	-46%	24%
Acidification potential, accumulated exceedance (AP)	-27%	16%
Eutrophication potential - freshwater (EP-freshwater)	-180%	94%
Eutrophication potential - marine (EP-marine)	-25%	15%
Eutrophication potential - terrestrial (EP-terrestrial)	-22%	13%
Photochemical ozone creation potential (POCP)	-22%	13%
Abiotic depletion potential - non-fossil resources (ADPE)	-10%	5%
Abiotic depletion potential - fossil resources (ADPF)	-10%	7%
Water (user) deprivation potential (WDP)	-56%	31%
Additional mandatory environmental impact indicators (MANDATORY)		
Global warming potential (GWP-GHG)	-3%	4%
Additional voluntary environmental impact indicators (OPTIONAL)		
Particulate matter emissions (PM)	0%	0%
Ionizing radiation, human health (IRP)	0%	0%
Eco-toxicity - freshwater (ETP-fw)	0%	0%
Human toxicity, cancer effect (HTP-c)	0%	0%
Human toxicity, non-cancer effects (HTP-nc)	0%	0%
Land use related impacts/Soil quality (SQP)	0%	0%
Indicators describing resource use (MANDATORY)		
Use of renewable primary energy as energy carrier (PERE)	-49%	-22%
Use of renewable primary energy resources used as raw materials (PERM)	0%	0%
Total use of renewable primary energy (PERT)	-42%	-19%
Use of non renewable primary energy as energy carrier (PENRE)	-10%	-3%
Use of non renewable primary energy resources used as raw materials (PENRM)	0%	0%
Total use of non renewable primary energy resource (PENRT)	-10%	-3%

Use of secondary material (SM)	-103%	-48%
Use of renewable secondary fuels (RSF)	0%	0%
Use of non-renewable secondary fuels (NRSF)	0%	0%
Net use of fresh water (FW)	-17%	-8%
Environmental information describing waste categories (MANDATORY)		
Hazardous waste disposed (HWD)	-87%	-41%
Non-hazardous waste disposed (NHWD)	-49%	-23%
Radioactive waste disposed (RWD)	87%	46%
Environmental information describing output flows (MANDATORY)		
Components for re-use (CRU)	0%	0%
Materials for recycling (MFR)	-1%	0%
Materials for energy recovery (MER)	0%	0%
Exported electrical energy (EEE)	0%	0%
Exported thermal energy (EET)	0%	0%

Alternative end-of-waste scenario

Results for module C and D are based on a disposal scenario with 85% of construction steel recycling. The tables below shows the results for each module if 100 % of the steel material would be recycled or 100% would be landfilled. Results from A1 to C3 remain the same.

Mandatory impact category indicators according to EN 15804 (100% recycling of steel end-of-life scenario)

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	8,87E-02	-1,81E+03
GWP-fossil	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	8,87E-02	-1,84E+03
GWP-biogenic	kg CO_2 eq.	-3,15E-01	1,70E-05	7,79E-04	1,11E-04	7,46E-06	2,46E+01
GWP-luluc	kg CO_2 eq.	1,85E+00	1,54E-05	6,68E-04	1,00E-04	4,48E-06	-1,07E+00
ODP	kg CFC 11 eq.	1,68E-05	5,70E-09	1,55E-07	3,71E-08	1,27E-09	-8,78E-06
AP	mol H^+ eq.	1,04E+01	3,46E-03	3,70E-02	2,25E-02	7,98E-04	-7,41E+00
EP-freshwater	kg P eq.	3,95E-01	3,53E-07	9,13E-05	2,30E-06	2,49E-06	-1,05E+00
EP-marine	kg N eq.	2,38E+00	1,63E-03	1,28E-02	1,06E-02	3,64E-04	-1,64E+00
EP-terrestrial	mol N eq.	2,60E+01	1,79E-02	1,41E-01	1,16E-01	3,99E-03	-1,68E+01
POCP	kg NMVOC eq.	8,40E+00	5,34E-03	5,27E-02	3,47E-02	1,21E-03	-6,03E+00
ADP-minerals&metals*	kg Sb eq.	8,04E-02	1,31E-08	1,07E-06	8,55E-08	2,95E-09	-1,04E-02
ADP-fossil*	MJ	3,14E+04	4,90E+00	1,71E+02	3,19E+01	1,13E+00	-1,98E+04
WDP*	m^3	5,31E+02	3,66E-03	2,28E-01	2,38E-02	9,92E-04	-6,42E+02
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.*

Mandatory impact category indicators according to EN 15804 (100% of steel landfill end-of-life scenario)

Results per declared unit							
Indicator	**Unit**	A1-A3	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	2,73E+00	0,00E+00
GWP-fossil	kg CO_2 eq.	2,90E+03	3,75E-01	1,31E+01	2,44E+00	2,73E+00	0,00E+00
GWP-biogenic	kg CO_2 eq.	-3,15E-01	1,70E-05	7,79E-04	1,11E-04	2,29E-04	0,00E+00
GWP-luluc	kg CO_2 eq.	1,85E+00	1,54E-05	6,68E-04	1,00E-04	1,38E-04	0,00E+00
ODP	kg CFC 11 eq.	1,68E-05	5,70E-09	1,55E-07	3,71E-08	3,92E-08	0,00E+00
AP	mol H^+ eq.	1,04E+01	3,46E-03	3,70E-02	2,25E-02	2,45E-02	0,00E+00
EP-freshwater	kg P eq.	3,95E-01	3,53E-07	9,13E-05	2,30E-06	7,66E-05	0,00E+00
EP-marine	kg N eq.	2,38E+00	1,63E-03	1,28E-02	1,06E-02	1,12E-02	0,00E+00
EP-terrestrial	mol N eq.	2,60E+01	1,79E-02	1,41E-01	1,16E-01	1,23E-01	0,00E+00
POCP	kg NMVOC eq.	8,40E+00	5,34E-03	5,27E-02	3,47E-02	3,72E-02	0,00E+00
ADP-minerals&metals*	kg Sb eq.	8,04E-02	1,31E-08	1,07E-06	8,55E-08	9,07E-08	0,00E+00
ADP-fossil*	MJ	3,14E+04	4,90E+00	1,71E+02	3,19E+01	3,49E+01	0,00E+00
WDP*	m^3	5,31E+02	3,66E-03	2,28E-01	2,38E-02	3,05E-02	0,00E+00
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.*

ADDITIONAL ENVIRONMENTAL INFORMATION

REPORT OF COMPLIANCE WITH THE MINIMUM ENVIRONMENTAL CRITERIA

Compliance with the minimum environmental criteria applicable to street furniture
NCM products are included in Minimum environmental criteria for awarding playground design services, the supply and installation of street furniture and outdoor furniture, and the awarding of ordinary and extraordinary maintenance services for street furniture and outdoor furniture (DM 7th February 2023), published in Gazzetta Ufficiale n. 69 on 22/03/2023.
NCM products are mostly made in steel so applicable criteria are:

- 5.1.3 Ecodesign: maintenance, repair and disassembly
- 5.1.10 Steel products
- 5.2.1 Packaging requirements

a. Ecodesign: maintenance, repair and disassembly
NCM will present during the tender phase the technical manual that includes an exploded view of the product, illustrates the parts that can be removed and replaced, the required tools, and provides instructions for disassembly and repair.

b. Steel products
Steel elements are pipes and sheets.
NCM declares that the sum of recovered, recycled and by-product material in steel is:

- ≥12% for steels coming from blast furnace
- ≥75% for steels coming from an electric arc furnace.

In the table content of EPD only the post-consumer material is considered.

c. Packaging requirements
The packaging is made up of separate components of different materials:

Packaging	Material	Conformity to requirements	Recycled content
Strapping	High tenacity polyester filament yarn and homopolymer polypropylene	Energy recovery	NA
Special cases compliant with the ispm 15 fitok	Wood	Conformity to standard IPPC/FAO ISPM-15	NA
Standard cases	Wood	Conformity declaration to UNI EN 13430:2005 standard Registration to Rilegno*	NA

*Rilegno is the National Consortium for the Collection, Recovery, and Recycling of Wooden Packaging
The strapping and the cases cannot be made of recycled material because it is technically not feasible given the required resistance.
The packaging is made to reduce the volume of the transported packaged cargo.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
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
SVHC	Substances of Very High Concern
ND	Not Declared
GWP	Global Warming Potential
GHG	Green House Gases
VOC	Volatile Organic Compounds
LCA	Life Cycle Assessment
PCR	Product Category Rules
RSL	Reference Service Life

REFERENCES

a) General Programme Instructions of the International EPD® System. Version 5.1.
b) PCR 2019:14. CONSTRUCTION PRODUCTS. Version 2.0.1
c) ISO 14040:2006 Environmental management - Life Cycle Assessment - Principles and framework
d) ISO 14044:2006 Environmental management - Life Cycle Assessment-Requirements and guidelines
e) ISO 14025:2010 Environmental labels and declarations-Type III Environmental Declarations-Principles and procedures
f) EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental product declarations
g) Project Report NCM rev4 of 18/02/2026

VERSION HISTORY

Original version of the EPD of 2026/02/19

EPD
INTERNATIONAL EPD SYSTEM
www.environdec.com