

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021



LILY

from

Sonepar Sverige AB



CARDI

Version date: 2026-03-10

Validity date: 2031-03-09

GENERAL INFORMATION

Type of EPD: EPD of multiple products, based on a representative product.

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: prof. Ing. Silvia Vilčeková, PhD., Silcert, s.r.o.

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

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.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: Sonepar Sverige AB

Address: 191 83 Sollentuna

Contact: Fredrik Lindeberg fredrik.lindeberg@cardi.se

Address and contact information of the LCA practitioner commissioned by the EPD owner:

Mg.sc.ing. Evita Kairiša, Lightholm

“Ezisi”, Marupe Rural Territory, Marupe Municipality, Latvia

Contact information: evita.kairisa@lightholm.com

Description of the organisation: **Sonepar Sverige** is part of the Sonepar Group. Sonepar Sverige offers electrical materials and systems to customers operating within electrical installation, industry, infrastructure, security, and lighting. The company provides a wide assortment from the world's leading suppliers and stocks over 40,000 items. Logistics is the driving force behind all operations, and the logistics services simplify everyday work for customers. With solid expertise, Sonepar Sverige strives to contribute to increased efficiency and profitability in customers' purchasing and sales organizations. Cardi Belysning is a nationwide sales organization within Sonepar, specializing in lighting solutions. Lighting sales professionals and designers provide expert support throughout the entire project – from concept to completion.

The Cardi brand offers a comprehensive range of both functional and design-oriented luminaires, suitable for all types of indoor and outdoor environments.

Product-related or management system-related certifications: Manufacturing unit has ISO 9001 and ISO 14001 certificate. LED luminaires are manufactured to fulfil the requirements of IEC 60598-1, IEC 60598-2-3

PRODUCT INFORMATION

Product name: LILY

Included products: The LILY product family covers power levels from 20 W to 40 W. The products are available with multiple colour temperature (CCT) and colour rendering index (CRI) options. The LILY is compatible with smart lighting systems via the Zhaga interface.

Product identification: Standard products are identified by E-number (see in Additional Information) Customized products are identified LILY + [Luminous flux indicator] + [CCT and/or CRI indicator] + [dimming indicator]

UN CPC code: 4653 Lighting equipment

Product description: The LILY is a highly adaptable park lighting luminaire that seamlessly blends timeless design with modern LED performance. Its elegant form and advanced optical system provide uniform, glare-free illumination for parks, residential areas, squares, parking lots, and other public spaces.

Crafted from high-quality aluminum housing and top cover, LILY features a robust polycarbonate diffuser for enhanced light distribution and durability. The luminaire is designed for post-top mounting on poles with a 60 mm or 108 mm spigot, ensuring flexible installation across various environments.

For LILY, technical parameters are as follows:

Product	Park luminaire with LED module
Rated voltage	220 – 240 Vac
Rated frequency	50/60 Hz
Rated power	20 – 40 W
Ambient temperature range	ta: -40...50°C
Classification	Class I, Class II
Degree of protection	IP66, IK10

LILY 3200 ALU 4K CLO - is declared as a representative product, based on production volumes.

Name and location of production site(s): "Ezisi", Marupe Rural Territory, Marupe Municipality, Latvia

In case of EPDs owned by a trader, the location of the final process in direct control of the trader: Örebro

Name of manufacturer(s) (if EPD of goods), if different from the EPD owner: Pedrobeat AS

References to any relevant websites for more information or explanatory materials, if applicable:
www.cardi.se

CONTENT DECLARATION

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Aluminum	3,3800	0	0	0
Polycarbonate	2,4400	0	0	0
Silicon	0,1000	0	0	0
Steel	0,3080	0	0	0
Stainless steel	0,1000	0	0	0
PCB	0,5200	0	0	0
LED Driver	0,2000	0	0	0
Cable	0,4800	0	0	0
Polyamide	0,0100	0	0	0
TOTAL	7,5380	0	0	0

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Cardboard box (kg)	1,280	16,98	0,5888
Paper packaging (kg)	0,010	0,13	0,0046
Plastics packaging (kg)	0,020	0,27	0
Wood pallets (kg)	1,250	16,58	0,5500
TOTAL	2,560	33,96	1,1434

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

Hazardous substances from the candidate list of SVHC	EC No.	CAS No.	Mass-% per product or declared unit
No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in this product either above the threshold for registration with the European Chemicals Agency or above 0,1% weight.			

LCA INFORMATION

Declared unit: 1 piece of the luminaire, equals to 7,538 kg.

Conversion factor: The conversion factor to mass of 1 kg is 0,133. To convert the results per 1 kg, the values must be multiplied by this factor.

Reference service life: 100 000 h

Time representativeness: Site specific data from producer is based on 1 year average for process data (reference year 2024). Time scope less than 10-years was applied for background data. Time scope less than 2 years was applied for specific data.

Geographical scope: Global, Europe, Latvia

Database(s) and LCA software used: Software LCA for Experts (version 10.9.1.19). Ecoinvent database (version 3.11.), EPD of LED driver.

Description of system boundaries:

The system boundary is cradle to grave and module D (A+B+C+D) according to EN 15804 + A2/AC:2021. It covers the production of raw materials, all relevant transport down to the factory gate, manufacturing of luminaire LILY by Pedrobeat AS, transport from the Pedrobeat AS plant to the site (836 km truck, 500 km ship), installation of luminaire including product unpacking, operational energy of use of luminaire (considered European residual electricity grid mix), deconstruction of the luminaire, transport of deconstructed materials, waste processing and recycling of used luminaire.

System diagram:

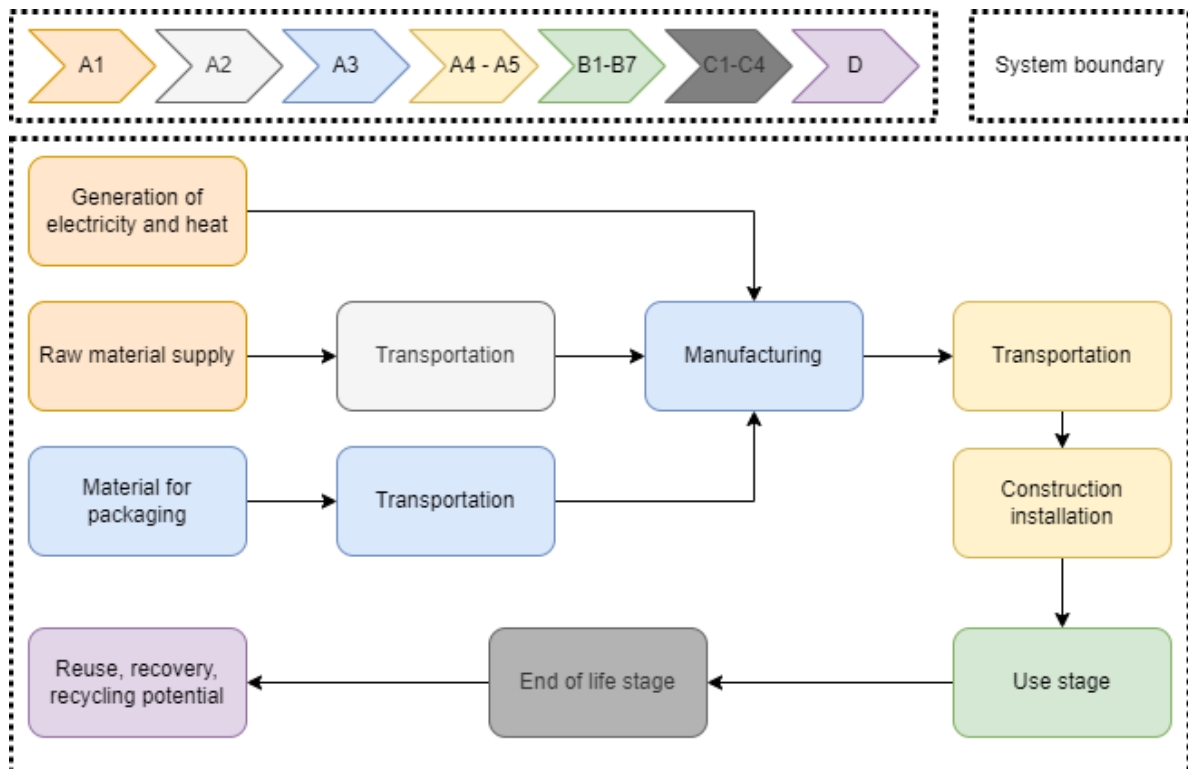


Figure 1 System boundary of the LCA study conducted on production of LILY

More information:

Cut off rules: More than 99% of flows were included.

Allocations: As a general allocation rule the production of 1 piece of product was chosen. Common inputs (electricity, thermal energy, water), material inputs, transport and common outputs (waste generated) are allocated to this product, i.e. to declared unit of this product.

97% of aluminium scrap in aluminium ingot production (for holder) is used in production of a luminaire. No secondary fuels are used in production.

Information about declared modules:

Module A1 covers the production of materials and components for producer and includes fuels and energy carriers (electricity, natural gas). This consists of the production of input materials.

Module A2 covers the transport of material into the site of production. Generic DB processes with site-specific parameters for distance were used.

Module A3 covers on-site operated processes dealing with LILY production and packaging. These processes are under the operational control of Pedrobeat AS and these are specific processes modelled based on data collection.

Module A4 covers the transport of product from the site of production Pedrobeat AS to the site of installation (considered weighted average 836 km by truck and 500 km by ship). Generic DB processes with site-specific parameters for distance were used. According to the assumption a weighted average of transportation modes and distances, based on transportation to several customers or markets, representing the geographical scope of the EPD was used in module A4.

Module A5 covers the phase of treatment and disposal of waste generated from the unpacking and installation of LILY. Default processes were used for recycling of packaging materials. It is assumed energy recovery from plastic and material recycling of wood and paper.

Module B6 covers operational energy use during the use phase of luminaires (considered European residual electricity grid mix).

It is assumed, that product is to 100% sent to recycling.

Module C1 covers estimated energy for deconstruction related to the mass of deconstructed material. Assumption of 1,1 kWh/t of energy carrier Diesel was used for deconstruction of luminaire.

Module C2 covers the transport of material into recycling facility. Generic DB processes with estimated general distances were used. Distance for the transport of material for recycling was set at 80 km.

Module C3 covers the processing for loading and unloading at sorting facility, sorting, treatment of materials before recycling and recycling of aluminium, steel, stainless steel and copper of used luminaire according to the assumption.

Module C4 covers the process for disposal/landfilling for steel, stainless steel, copper and aluminium.

Module D covers declared benefits and loads regarding recycling potential of steel, stainless steel, aluminium, copper and energy recovery from incineration of other materials from used luminaire and used packaging.

Electricity mix: DB process of Latvian residual grid mix is used for consumed electricity in production process in Pedrobeat AS The used dataset has impact of 0,43 kg CO₂ eq./kWh for GWP-GHG indicator.

Characterisation factors: Characterisation factors are based on Environmental Footprint 3.1. (EF 3.1).

Data quality of processes contributing with more than 10% to the GWP-GHG results of modules A1-A3:

Process	Source Type	Source	Reference year	Data category
Production of LED driver	EPD	Supplier EPD	<5 years old	Primary
Production of PCB	Database	Ecoinvent 3.11	2024	Secondary
Production of aluminium	Database	Ecoinvent 3.11	2024	Secondary

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage	
	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	X
Geography	GLO	GLO	LV	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	
Specific data used	2,62%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – products	-0,0%;+0,22%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-	

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.

ENVIRONMENTAL PERFORMANCE

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

Mandatory impact category indicators according to EN 15804

Results per 1 piece of luminaire LILY										
Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1,30E+02	9,26E-01	8,56E-03	6,58E+02	2,19E-03	6,36E-02	1,31E-02	1,98E-03	-3,36E+01
GWP-biogenic	kg CO ₂ eq.	-1,99E+00	5,37E-04	1,99E+00	2,14E+01	7,12E-05	3,89E-05	1,78E-04	9,02E-06	4,42E+00
GWP-luluc	kg CO ₂ eq.	2,73E-01	3,43E-04	1,22E-05	1,94E+00	6,47E-06	2,28E-05	1,66E-05	5,27E-07	-4,11E-01
GWP-total	kg CO ₂ eq.	1,28E+02	9,27E-01	2,00E+00	6,81E+02	2,27E-03	6,37E-02	1,33E-02	1,99E-03	-2,96E+01
ODP	kg CFC 11 eq.	9,53E-06	2,00E-08	1,43E-10	1,22E-05	4,08E-11	1,39E-09	2,16E-10	6,59E-11	-8,83E-07
AP	mol H ⁺ eq.	1,17E+00	3,89E-03	7,95E-05	3,79E+00	1,26E-05	2,10E-04	1,27E-04	2,19E-05	-2,11E-01
EP-freshwater	kg P eq.	7,48E-02	6,43E-05	3,95E-06	6,32E-01	2,11E-06	4,49E-06	5,35E-06	3,24E-06	-5,06E-02
EP-marine	kg N eq.	1,61E-01	1,22E-03	2,98E-05	6,10E-01	2,03E-06	7,20E-05	4,93E-05	5,57E-06	-4,07E-02
EP-terrestrial	mol N eq.	1,70E+00	1,33E-02	3,18E-04	5,35E+00	1,78E-05	7,78E-04	5,28E-04	5,97E-05	-4,56E-01
POCP	kg NMVOC eq.	5,89E-01	5,34E-03	9,05E-05	1,71E+00	5,71E-06	3,34E-04	1,50E-04	2,16E-05	-1,56E-01
ADP-minerals&metals*	kg Sb eq.	1,35E-02	2,55E-06	5,65E-08	8,88E-03	2,96E-08	1,79E-07	7,69E-08	3,31E-09	-8,41E-04
ADP-fossil*	MJ	1,91E+03	1,35E+01	1,58E-01	1,64E+04	5,48E-02	9,34E-01	2,33E-01	4,66E-02	-6,11E+02
WDP*	m ³	4,10E+01	7,95E-02	2,73E-03	4,25E+02	1,42E-03	5,57E-03	3,71E-03	-2,27E-02	-3,68E+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 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.

Additional mandatory and voluntary impact category indicators

Results per 1 piece of luminaire LILY										
Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1,30E+02	9,26E-01	8,57E-03	6,58E+03	2,20E-03	6,36E-02	1,31E-02	1,98E-03	-3,41E+01

Resource use indicators

Results per 1 piece of luminaire LILY										
Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
PERE	MJ	2,29E+02	2,06E-01	2,54E-02	4,10E+03	1,37E-02	1,44E-02	3,43E-02	8,78E-04	-1,34E+02
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
PERT	MJ	2,29E+02	2,06E-01	2,54E-02	4,10E+03	1,37E-02	1,44E-02	3,43E-02	8,78E-04	-1,34E+02
PENRE	MJ	1,91E+03	1,35E+01	1,58E-01	1,64E+04	5,48E-02	9,34E-01	2,33E-01	4,66E-02	-6,11E+02
PENRM	MJ.	2,24E+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	1,91E+03	1,35E+01	1,58E-01	1,64E+04	5,48E-02	9,34E-01	2,33E-01	4,66E-02	-6,11E+02
SM	kg	8,54E-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
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
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
FW	m ³	9,76E-01	1,85E-03	6,35E-05	9,90E+00	3,30E-05	1,30E-04	8,64E-05	-5,29E-04	-8,56E-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									

Waste indicators

Results per 1 piece of luminaire LILY										
Indicator	Unit	A1-A3	A4	A5	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,44E+01	1,40E-02	1,28E-04	1,78E+01	5,94E-05	9,61E-04	1,79E-04	5,40E-05	-5,63E+00
Non-hazardous waste disposed	kg	8,48E+01	1,29E-01	1,03E-03	1,46E+02	4,86E-04	8,97E-03	1,43E-03	6,26E-01	-2,23E+01
Radioactive waste disposed	kg	7,23E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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 CO₂ is set to zero.

Output flow indicators

Results per 1 piece of luminaire LILY										
Indicator	Unit	A1-A3	A4	A5	B6	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
Material for recycling	kg	1,43E+00	0,00E+00	2,54E+00	0,00E+00	0,00E+00	0,00E+00	7,54E+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
Exported energy, electricity	MJ	-2,63E-04	0,00E+00	-3,60E-03	0,00E+00	0,00E+00	0,00E+00	-2,79E-02	0,00E+00	0,00E+00
Exported energy, thermal	MJ	-4,53E-04	0,00E+00	-6,20E-03	0,00E+00	0,00E+00	0,00E+00	-4,81E-02	0,00E+00	0,00E+00

ADDITIONAL ENVIRONMENTAL INFORMATION

Conversion factors B6

For the conversion of B6 results for a products with a different power consumption use a conversion factor from the table below.

	B6 conversion factor
≤25W	1,0000
26W - 35W	1,4000
36W - 40W	1,6000

Additional information

Standard products identified by E-numbers

Product name	E-number
LILY 3200 ALU 3K CLO	E7749963
LILY 3200 ALU 3K ZD4I-U CLO	E7749965
LILY 3200 ALU 4K CLO	E7749964
LILY 3200 ALU 4K ZD4I-U CLO	E7749966
LILY 3200 SVART 3K CLO	E7749967
LILY 3200 SVART 3K ZD4I-U CLO	E7749969
LILY 3200 SVART 4K CLO	E7749968
LILY 3200 SVART 4K ZD4I-U CLO	E7749970
LILY 4200 ALU 3K CLO	E7749973
LILY 4200 ALU 3K ZD4I CLO	E7749975
LILY 4200 ALU 4K CLO	E7749974
LILY 4200 ALU 4K ZD4I CLO	E7749976
LILY 4200 SVART 3K CLO	E7749977
LILY 4200 SVART 3K ZD4I-U CLO	E7749979
LILY 4200 SVART 4K CLO	E7749978
LILY 4200 SVART 4K ZD4I-U CLO	E7749980

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
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
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)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)

Lifecycle Stages / Modules	
A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
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
NM VOC	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

REFERENCES

ISO 14025: EN ISO 14025:2006-11: Environmental labels and declarations - Type III environmental declarations — Principles and procedures

ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework, 2006-07

ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines, 2006-07

EN 15804+A2:2019 European Committee for Standardization: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products, 2019

ecoinvent: www.ecoinvent.org, ecoinvent database

Sphera: LCA for Experts software, 2025, Sphera solutions.