Orona

Environmental product declaration

In accordance with EN ISO 14025:2010 and with EN 15804:2012+A2:2019

ORONA NEXT SMART LIFT

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GlobalEPD
A VERIFIED ENVIRONMENTAL DECLARATION

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EPD®
THE INTERNATIONAL EPD® SYSTEM
IntEPD- GlobalEPD B62.11-003

EPD
EN 15804 VERIFIED

01 Company information

We are a leading European business group in vertical transportation. We provide 360° solutions that cover the entire value chain of design, manufacture, installation, maintenance, modernization, rehabilitation and replacement of lifts, escalators, ramps and corridors, for all market segments.

Our organizational model, committed to people, is made up of a team of 5,400 professionals, present in 12 European countries where we operate throughout the value chain of vertical transportation. Our production facilities have the highest production capacity of complete lifts in Europe, where we have more than 250,000 lifts installed. 1 out of every 10 new lifts in Europe is Orona.

We are present in more than 100 countries around the world through an extensive network of qualified distributors.

We also participate in initiatives to promote eco-innovation and respect for the environment and the society.

5,400 professionals, present in 12 European countries

250,000 lifts installed

1 out of every 10 new lifts in Europe is Orona

Presence in more than 100 countries around the world

Through our pragmatic and relevant innovation, our vertical transport solutions encompass cutting-edge technologies in people mobility management, digitalization, optimization of available space, energy-efficient technology, user experience and safety in the use of the lift.
The organizational commitment to environmental sustainability made Orona the first lift company in the world to obtain the ISO 14006 ecodesign certification. Furthermore, its corporate headquarters, was also the first to be qualified for an extraordinary point of innovation by BREEAM International certification.

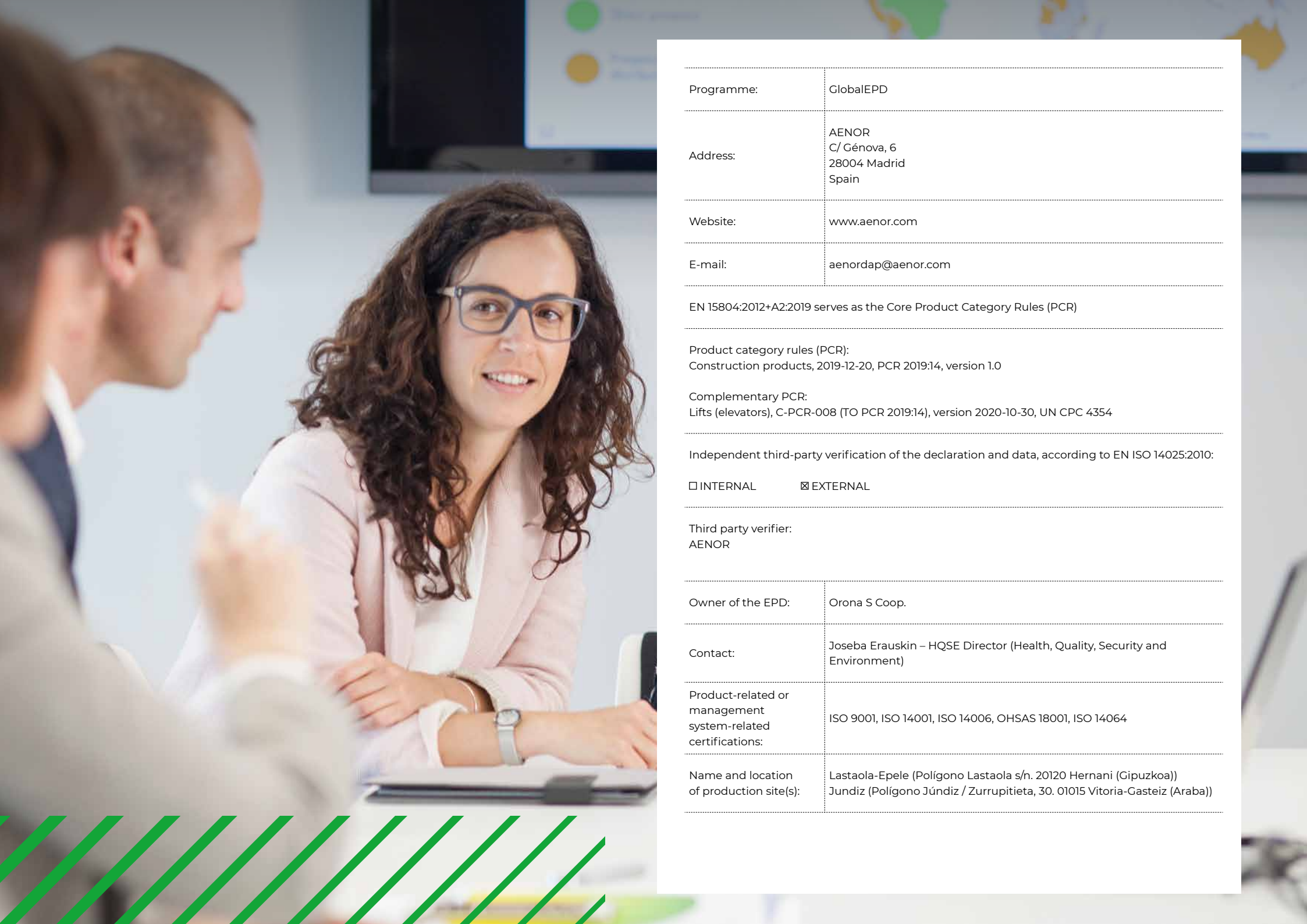
Orona is aligned with the current global situation and with the Sustainable Development Goals of the United Nations Global Compact. In line with its responsibility not only to society but also to its working partners, customers and other stakeholders, it has been maintaining and promoting Environmental Management (ISO 14001) and Ecodesign Management (ISO 14006) certifications for more than 10 years.
In 2011, Orona became the first company in the lift sector to obtain the ISO 14006 certification and, from that moment on, Orona continues on making products and services more sustainable. Moreover, Orona has been certified by ISO 14064, thanks to its work to reduce the greenhouse gas emissions.
For more information about our company, visit https://www.orona.es/es-es

02 Programme information

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

Comparability between EPDs based on this c-PCR-008 (to PCR 2019:14) are not conceivable and shall be avoided. Any comparability of this kind shall be considered as false and misleading the EPD use. Comparability between EPDs based on this c-PCR-008 (to PCR 2019:14) is only achievable, if the following performance characteristics are equivalent: functional unit, reference service lifetime, usage category, travel height, number of stops, rated load, rated speed and geographic region.

For further information about comparability, see EN 15804:2012+A2:2019 and EN ISO 14025:2010.



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EN 15804:2012+A2:2019 serves as the Core Product Category Rules (PCR)

Product category rules (PCR):
Construction products, 2019-12-20, PCR 2019:14, version 1.0

Complementary PCR:
Lifts (elevators), C-PCR-008 (TO PCR 2019:14), version 2020-10-30, UN CPC 4354

Independent third-party verification of the declaration and data, according to EN ISO 14025:2010:

☐ INTERNAL ☒ EXTERNAL

Third party verifier:
AENOR

Owner of the EPD:	Orona S Coop.
Contact:	Joseba Erauskin – HQSE Director (Health, Quality, Security and Environment)
Product-related or management system-related certifications:	ISO 9001, ISO 14001, ISO 14006, OHSAS 18001, ISO 14064
Name and location of production site(s):	Lastaola-Epele (Polígono Lastaola s/n. 20120 Hernani (Gipuzkoa)) Jundiz (Polígono Júndiz / Zurrupitieta, 30. 01015 Vitoria-Gasteiz (Araba))

03 Product information

Orona Next Smart

Our world is growing ever more global and digital every day, where physical distance between people is overcome thanks to the technology that closes the gap.

Let us imagine now that you have a partner that develops and incorporates digital innovation and, at the same time, brings you closer to whom and where you want; a companion that combines the best of both worlds to make each journey an in-car experience.

Orona Next® is born: a platform that provides users with building mobility solutions and aims at shortening distances between people, enabling them to get closer together; a catalogue of solutions that comprises lifts, escalators, moving walks and accessibility products.

Move without a care and freely around your building. Next Move offers several access forms, destination selection and access control. Flow in and out the building smoothly thanks to the connectivity solutions Next Connect offers.

When sustainability and, environmental and social commitment are carried deep within, all the elements that shape solutions are designed and integrated with the present and the future in mind. Next Green offers sustainable and energy efficient elements that make our systems the most environmentally efficient ones.

Our purpose is to bring people together by shortening distances, looking after you and your love ones along the journey. We introduce you Next Care, a set of solutions that contribute to your welfare aboard our cabins.

Orona Next Smart is the adaptable solution to all types of buildings; a safe bet that responds to the demands of each project. It offers greater versatility to meet the requirements of your installation without compromising on comfort.

3.1 4 alternatives for reducing energy consumption in the use of your lift

GEARLESS LOW-ENERGY DRIVE

- Reaching 90% energy efficiency, one of the highest in the market.
- Consumes 70% less energy compared with a hydraulic lift.
- Consumes 50% less than a two-speed electric lift with similar features.

GEARLESS DIRECT-DRIVE MOTOR

- When the lift is on stand-by:
  - Car and landing position indicators are dimmed.
  - The power elements (frequency inverter) switch to stand-by mode.
  - The car lighting switches off.

EFFICIENT LED LIGHTING AND AUTOMATIC CAR LIGHTING SWITCH-OFF

- Orona solutions offer both these elements with our products, saving up to 80% power consumption.
- LED lighting is more efficient as its energy is used to generate light, not heat.
- Useful life is up to 10 times longer.
- Lighting lux levels are up to 50% above standard requirements.

ORONA GRID REGEN. ENERGY REGENERATION SYSTEM

- When the lift is travelling up with reduced load, or down with a heavy load, the motor generates energy rather than consuming it with a regenerative drive fitted.
- The energy generated by the lift can be used by other devices connected to the same network or (depending on the country) returned to the network, reducing consumption and contributing to cost savings.

Our lifts are designed to achieve an A Class Energy Efficiency classification according to the ISO 25745 standard.

3.2 Specifications

The Life Cycle Analysis (LCA) scope calculated for Orona Next Smart lift is a typical “cradle to grave” assesment. The whole product is manufactured in Spain (Europe) from the raw material supply and its manufacturing processes through product transport, installation, use, end-of-life and resource recovery stages.

Table 1. Technical specifications of Orona Next Smart lift

	Values	Representative values chosen case of declaration of ranges	
Commercial name	**Orona Next Smart**	**Orona Next Smart (S15)**	**Orona Next Smart (S19)**
CNAE rev.2 code	28.22 Manufacture of lifting and handling equipment		
Type of installation	New generic lift		
Main purpose	Transport of passengers		
Type of lift	Electric		
Rated load	320 to 1250 kg	1000 kg	1000 kg
Capacity	4 to 16 people	13 people	13 people
Speed	1 – 1.6 m/s	1 m/s	1 m/s
Number of stops	16 to 21 stops	5 stops	5 stops
Travelled height	40 to 60 m	12 m	15 m
Type of drive system	Gearless traction		
Number of operating days per year	365 days per year		
Designed Reference Service Life (RSL)	25 years		
Applied Usage Category (UC) according to ISO 25745-2	UC 1 to 6	UC 2	UC 2
Geographical scope	Global		
Recommended applications	Residential buildings, hospitals, hotels, offices and shopping centers among others		

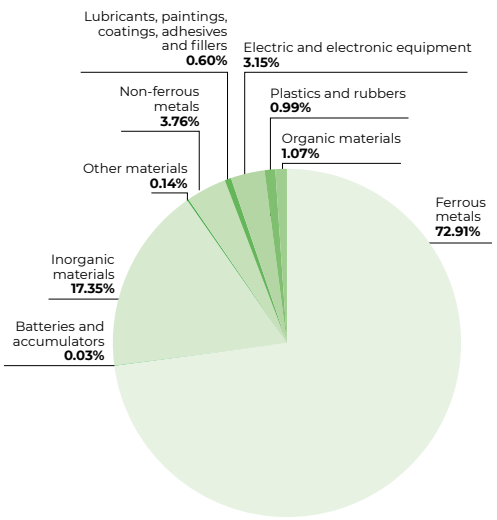
3.3 Content declaration

The Orona Next Smart lift packaging is made of PEFC certified (Program for the Endorsement of Forest Certification) wood pallets.

The present tables report the product composition and the packaging used in this lift as delivered and installed in the building.

Table 2. Declared product composition

Type of materials	Weight %	
	Orona Next Smart (S15)	Orona Next Smart (S19)
Ferrous metals	72.91%	92.84%
Inorganic materials	17.35%	0.41%
Non-ferrous metals	3.76%	1.13%
Electric and electronic equipment	3.15%	2.66%
Organic materials	1.07%	1.26%
Plastics and rubbers	0.99%	0.94%
Lubricants, paintings, coatings, adhesives and fillers	0.60%	0.53%
Other materials	0.14%	0.21%
Batteries and accumulators	0.03%	0.02%
Total	**100.00%**	**100.00%**



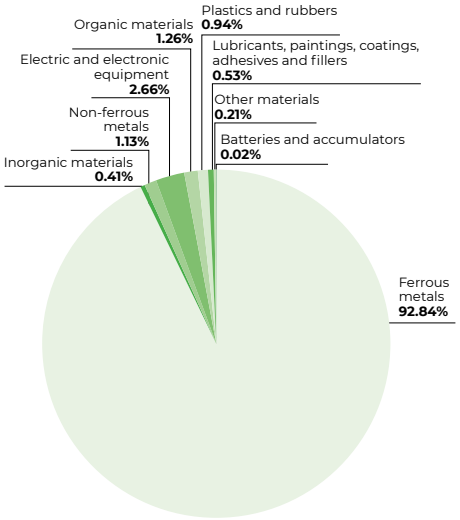
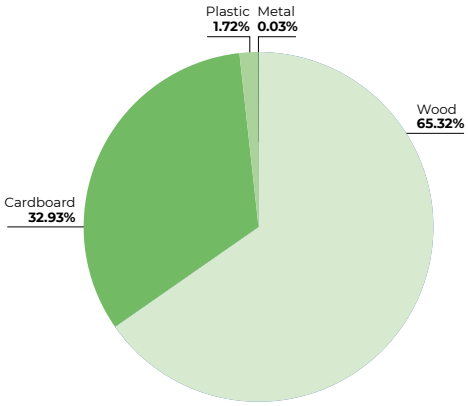
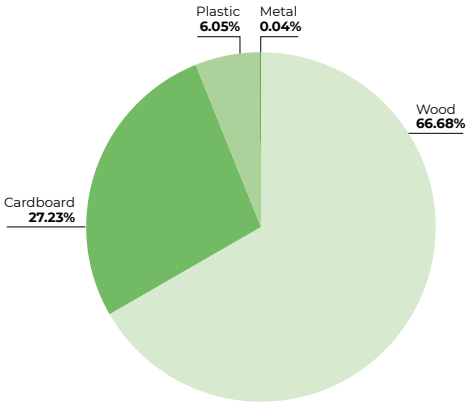


Table 3. Declared product packaging

Packaging materials	**Weight %** (packaging)		**Weight %** (versus the product)	
	Orona Next Smart (S15)	Orona Next Smart (S19)	Orona Next Smart (S15)	Orona Next Smart (S19)
Wood	65.32%	66.68%	3.41%	3.65%
Cardboard	32.93%	27.23%	1.72%	1.49%
Plastic	1.72%	6.05%	0.09%	0.33%
Metal	0.03%	0.04%	0.00%	0.00%
Total	**100.00%**	**100.00%**	**5.22%**	**5.48%**



Orona Next Smart (S15)



Orona Next Smart (S19)

The information related to Substances of Very High Concern (SVHC) defined by article 59 (10) of Regulation (CE) nº 1907/2006 (dated 2020-06-25), also known as the REACH candidate list, is available in the following website: www.orona.es

3.4 Production process

Orona is based in Spain, with two production plants, where manufactures equipment and provides service to customers all over the world.

The main production center, consists of 70,000 m² of floorspace, 23 floors and a 70-m-tall test tower. Orona boasts the biggest production capacity for **complete lifts** in Europe. In addition, the second production center has a surface area of 27,700 m² with the ability to expand by 8,000 m² with another 60-m-tall test tower.

These production plants are organized in self-managed mini-factories where each of them incorporates its own engineering, procurement logistics, material transformation and quality control. Industrial buildings are divided into different sections where the different components of the elevators are manufactured. All the components of the elevator are fully produced in these production plants, ensuring that the whole lift is shipped completely.

Together, these industrial centers have annual production capacity of 25,000 lifts.

04 Life Cycle Analysis

Life Cycle Analysis (LCA) is an international methodology that quantifies the environmental impacts associated with products and services, detecting areas for improvement throughout the study of the entire life cycle of the product.

The present study is based on a cradle to grave LCA.

This EPD has been drawn up and verified according to UNE-EN ISO 14025:2006 and the EN 15804:2012+A2:2019 and the following Product Category Rules:

- Construction products: 2019-12-20 PCR 2019:14, Version 1.0

- Lifts (elevators): C-PCR-008 (TO PCR 2019:14) Version 2020-10-30, UN CPC 4354

4.1 System boundary

The table below indicates the modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation.

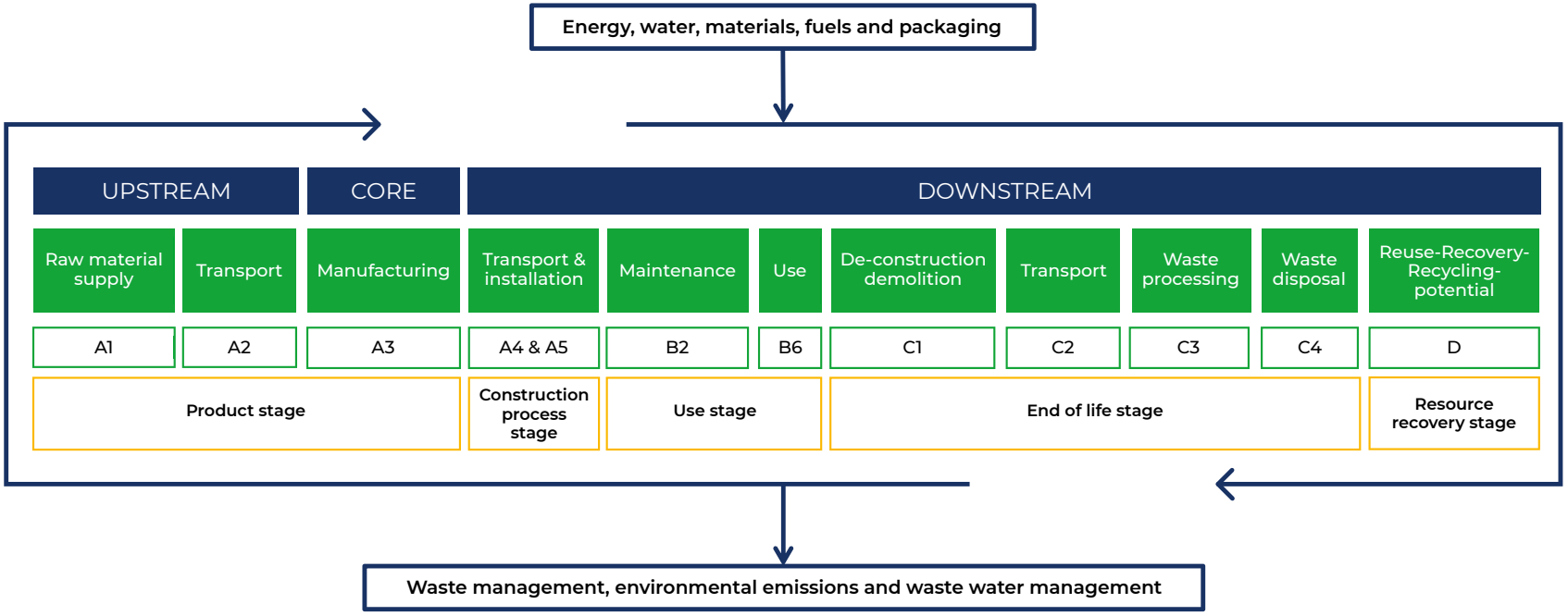
Table 4. Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation

	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	De-construction demolition	Transport	Waste processing	Waste disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	D
Modules declared	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Geography	ES			Global		Global						Global				–
Specific data used	>95%			>65%	–	–	–	–	–	–	–	–	–	–	–	–
Variation – products	Not relevant															
Variation – sites	Not relevant															

LCA has been assessed according to cradle to grave and module D.

Modules B1, B3 and B7 are excluded, according to de c-PCR.

Modules B4 is merged with B5, according to the c-PCR, but do not have any impact since there is no intention of prolonging the use for more than 25 years.


Energy, water, materials, fuels and packaging
UPSTREAM
CORE
DOWNSTREAM
Raw material supply
Transport
Manufacturing
Transport & installation
Maintenance
Use
De-construction demolition
Transport
Waste processing
Waste disposal
Reuse-Recovery-Recycling-potential
A1
A2
A3
A4 & A5
B2
B6
C1
C2
C3
C4
D
Product stage
Construction process stage
Use stage
End of life stage
Resource recovery stage
Waste management, environmental emissions and waste water management

4.2 Functional Unit

According to the c-PCR, the Functional Unit (FU) evaluated for this study is defined as the transportation of a load over a distance, expressed as one tonne [t] transported over one kilometre [km], i.e. tonne-kilometre [tkm].

It should be calculated as the average car load %Q [t] times the distance travelled by the lift during the service life S_{RSL} [km]:

$$FU=\%Q \times s_{RSL}$$

The average car load was calculated using Table 3 in ISO 25745-2 by the following equation:

$$\%Q = \frac{Q}{1000} \; x \; [Percentage\ value\ from\ Table\ 3\ of\ ISO\ 25745\text{-}2]=0.047\ [t]$$

where Q is the lift rated load, 1,000 kg.

The distance travelled by the lift during the Reference Service Life (RSL) of 25 years is:

$$s_{RSL} = \frac{s_{av}}{1000} \times n_d \times d_{op} \times RSL$$

where s_{av} is the one-way average travel distance for target installation, n_d is the number of trips per day according to the selected usage category (defined in Table 1 of ISO 25745-2) and d_{op} is the number of operating days per year.

	Orona Next Smart (S15)	Orona Next Smart (S19)
s_{av}	5.88 m	7.35 m
Usage Category (UC)	UC 2	
d_{op}	365 days	

So, the distance travelled by the lift during the RSL in each case is:

	Orona Next Smart (S15)	Orona Next Smart (S19)
s_{av}	6,707 km	8,384 km

The Functional Unit (FU) of Orona Next Smart lift is 301.81 tkm for Orona Next Smart (S15) and 377.26 tkm for Orona Next Smart (S19).

For the lift analysed, the aspects shown in the following table have been taken into account.

Table 5. LCA data for the analysed product

Parameter	Value
Reference service life	25 years
Time representativeness for the manufacturing activities	2019
Main database for generic data and LCA software used	Ecoinvent 3.6
Distribution, use and end-of-life scenarios	The countries to which the lift is distributed in the reference year have been considered
Programmes used to carry out the LCA	SimaPro v.9.1.1.0

4.3 Additional information about the underlying LCA-based information

4.3.1 Allocation and cut-off criteria

The allocation of manufacturing module (A3) is made by taking into account the total consumption in production in respect to total lift expeditions in 2019. In addition, all the inventories and impacts are calculated per lift unit and then, the FU is assigned depending on the calculation of tkm that the lift is able to make throughout its RSL.

The Life Cycle Inventory (LCI) data must include, according to the EN 15804 standard, a minimum of 95% of the total mass and energy for each life cycle stage (only an exclusion of 5% is allowed). The following table shows the cut-off criteria established for each module of the lift's life cycle:

Table 6. Applied cut-off criteria by Life Cycle Stages

Life Cycle Stages	Information modules		Cut-off criteria
A1-A3 Product stage	A1	Raw material supply	No cut-off criteria applied.
	A2	Transport	No cut-off criteria applied.
	A3	Manufacturing	No cut-off criteria applied.
A4-A5 Construction process stage	A4	Transport	No cut-off criteria applied.
	A5	Installation	No cut-off criteria applied.
B1-B7 Use stage	B2	Maintenance	No cut-off criteria applied.
	B6	Operational energy use	No cut-off criteria applied. Only one calculation criterion is applied for the electricity mix of the use stage. The electricity mix of 2019 is calculated for those countries that represent more than 5% of total sales. For all other countries, a generic mix from Ecoinvent 3.6 (2016) is applied.
C1-C4 End of life stage	C1	De-construction demolition	No cut-off criteria applied.
	C2	Transport	No cut-off criteria applied.
	C3	Waste processing	No cut-off criteria applied.
	C4	Waste disposal	No cut-off criteria applied.
D Resource recovery stage	D	Reuse-Recovery-Recycling-potential	No cut-off criteria applied.

4.3.2 Representativeness and quality of data

The data related to inventory, transports and consumption are from 2019.

In the cases in which primary data about certain material or process can not be accessed estimations, calculations or approaches have been carried out with data proceeding from the inventory database of life cycles internationally known as Ecoinvent 3.6. About indicators, these have been taken from official sources and adjusted to the geography and time frame to minimize their uncertainty.

4.3.3 Scenarios

Processes that precedes manufacturing (A1-A2)

Transportation of first level suppliers (the transportation to provide material directly to Orona) has been considered. In order to know the environmental impact associated with the transportation from the suppliers, the distance between them and the Orona factory has been calculated. Most transportation is carried out by lorry, and the criteria chosen in case of alternative routes existing has been the length of the route. For ship routes, the transportation from the production plants to the port of origin has been deemed irrelevant compared to the distance that the product needs to travel by ship.

Manufacturing of the product (A3)

The main material of the Orona Next Smart model is the ferric metal, which constitutes 72.91% and 92.84% of the lift's total weight for the Orona Next Smart (S15) and Orona Next Smart (S19) lifts respectively. All the subassemblies that form the lift are manufactured in the Orona production plants where, once manufactured, they are grouped together and dispatched to the lift installation site. The emission factor of the electric mix of the organisation used in this module is 317.4 g CO_2 eq./kWh.

Construction process stage (A4-A5)

The distances employed in the calculation of the transport of the lift between the Orona plant and the installation site have been obtained through an average of distances based on sales per country of each lift model in 2019. For this, an average distance from the Orona plant to the capital of each of the countries has been generated (until summing up 95% of the shipments).

To each distance, its corresponding transport has been assigned:

Type of transport	Unit	Amount	
		Orona Next Smart (S15)	Orona Next Smart (S19)
Truck	tkm	2.7	2.3
Ship	tkm	1.5	0.3

Within the installation phase of the Orona Next Smart lift both the mechanic and electronic assemblies have been considered.

Parameter	Unit	Amount	
		Orona Next Smart (S15)	Orona Next Smart (S19)
Electricity	kWh	6.33E-02	6.44E-02
Cardboard	kg	2.35E-01	1.91E-01
Wood	kg	4.66E-01	4.68E-01
Packaging plastic	kg	1.23E-02	4.24E-02
Metal	kg	2.32E-04	2.92E-04

Maintenance (B2)

In this phase, environmental aspects related to the movement of the lift technicians during their visits and energy consumption during revisions are included. Along the service life of the lift, certain replacements and maintenance processes will be needed. Two types of maintenance have been considered: the preventive maintenance and the corrective maintenance.

Operational energy use (B6)

The geographical area has been selected based on the sales distribution (%) in the different countries where Orona markets the lifts. With the data from 2019, the electric mix data of each country has been updated, using the information on the IEA webpage (International Energy Agency) for countries with a share of more than 5% of the total sales:

Parameter	Unit	Amount	
		Orona Next Smart (S15)	Orona Next Smart (S19)
Electricity	kWh	44.82	41.83

End-of-life stage (C1- C4)

The waste management has been conducted based on a series of end-of-life scenarios which depend on the destination country of the lift and the components of the lift. Three end-of-life stages have been identified: Spain, rest of Europe and rest of the world. The following have been taken into account for each of these stages: recovery, landfill and incineration.

Different sources have been consulted when developing the three end-of-life stages:

- In the European stage, percentages derived from the tables in the Annex C of Product Environmental Footprint Category Rules and Organisation Environmental Footprint Sector Rules. In those cases where this value was no available, the Eurostat value has been adopted.
- In the case of Spain, the values available in the INE (Instituto Nacional de Estadística) statistics tables about collection and treatment waste have been used.
- In the rest of the world stage, a conservative scenario has been considered where 100% of the waste is sent to the landfill.

To calculate module C2, an estimated distance of 65 km has been adopted, based on the information available in Guidance 6.3 of the Product Environmental Footprint.

05 Environmental performance

The results for the complete service lifetime of Orona Next Smart lift were calculated according to the PCR and presented per functional unit (tkm). The tables below indicate the potential environmental impact (mandatory and voluntary indicators), the use of resources, the waste production, the output flows and the information on biogenic carbon content for the UC 2, respectively.

5.1 Potential environmental impact

Table 7. Potential environmental impact – additional mandatory and voluntary indicators according to EN 15804 for Orona Next Smart (S15) UC 2.

Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-total	**kg CO_2 eq.**	4.29E+01	3.60E-01	7.38E-01	4.40E+01	3.64E+00	4.45E-02	6.10E+00	2.10E+01	1.48E-01	1.48E-01	0.00E+00	1.31E-01	-1.13E+01
GWP-fossil	**kg CO_2 eq.**	4.24E+01	3.60E-01	1.19E+00	4.40E+01	3.64E+00	3.28E-02	6.09E+00	2.06E+01	1.48E-01	1.48E-01	0.00E+00	1.30E-01	-1.16E+01
GWP-biogenic	**kg CO_2 eq.**	4.28E-01	2.27E-04	-2.30E-01	1.98E-01	1.22E-03	1.16E-02	1.59E-03	2.90E-01	5.03E-04	7.90E-05	0.00E+00	1.74E-04	3.14E-01
GWP-luluc	**kg CO_2 eq.**	8.28E-02	1.28E-04	2.78E-02	1.11E-01	1.62E-03	4.77E-05	8.01E-03	3.37E-02	1.15E-04	5.18E-05	0.00E+00	7.37E-05	-1.97E-02
ODP	**kg CFC 11 eq.**	3.86E-06	8.19E-08	1.90E-07	4.13E-06	7.96E-07	2.90E-09	8.16E-07	1.87E-06	2.30E-08	3.36E-08	0.00E+00	2.71E-08	-5.81E-07
AP	**mol H+ eq.**	2.96E-01	1.85E-03	9.19E-03	3.07E-01	2.32E-02	1.57E-04	5.35E-02	1.06E-01	6.62E-04	6.05E-04	0.00E+00	8.02E-04	-9.53E-02
EP-freshwater	**kg P eq**	3.59E-02	2.83E-05	5.02E-04	3.65E-02	2.98E-04	1.60E-05	6.11E-03	1.12E-02	4.03E-05	1.08E-05	0.00E+00	2.39E-05	-1.82E-02
EP-marine	**kg N eq.**	5.05E-02	5.09E-04	1.61E-03	5.27E-02	6.27E-03	5.66E-05	7.63E-03	1.83E-02	1.38E-04	1.81E-04	0.00E+00	8.66E-04	-1.59E-02
EP-terrestrial	**mol N eq.**	5.25E-01	5.59E-03	1.90E-02	5.50E-01	6.90E-02	2.97E-04	8.29E-02	1.89E-01	1.48E-03	1.99E-03	0.00E+00	2.67E-03	-1.78E-01
POCP	**kg NMVOC eq.**	1.81E-01	1.71E-03	7.95E-03	1.91E-01	1.99E-02	8.08E-05	2.62E-02	4.98E-02	4.80E-04	6.08E-04	0.00E+00	7.75E-04	-6.41E-02
ADP-minerals & metals*	**kg Sb eq.**	2.52E-02	8.55E-06	1.86E-05	2.52E-02	1.08E-04	1.75E-07	2.01E-03	1.19E-04	8.44E-06	4.01E-06	0.00E+00	1.41E-06	-4.19E-03
ADP-fossil*	**MJ**	5.42E+02	5.47E+00	2.50E+01	5.73E+02	5.35E+01	5.44E-01	8.34E+01	3.72E+02	2.20E+00	2.23E+00	0.00E+00	2.18E+00	-1.17E+02
WDP	**m3**	1.56E+01	1.77E-02	1.19E+00	1.68E+01	1.81E-01	7.40E-03	1.21E+00	5.16E+00	2.00E-02	6.22E-03	0.00E+00	8.02E-02	-1.98E+00
GWP-GHG**	**kg CO_2 eq.**	4.29E+01	3.60E-01	7.38E-01	4.40E+01	3.64E+00	4.45E-02	6.10E+00	2.10E+01	1.48E-01	1.48E-01	0.00E+00	1.31E-01	-1.13E+01
Ionising radiation	**kBq U-235 eq**	4.23E+00	2.85E-02	3.67E-01	4.62E+00	2.78E-01	1.01E-02	6.44E-01	7.05E+00	2.13E-02	1.15E-02	0.00E+00	1.22E-02	-3.19E-01
Ecotoxicity, freshwater	**CTUe**	2.76E+03	4.40E+00	3.29E+01	2.79E+03	4.31E+01	4.02E-01	4.35E+02	2.68E+02	2.73E+00	1.79E+00	0.00E+00	2.41E+02	-1.35E+03
Particulate matter	**disease inc.**	1.00E-04	2.70E-08	1.02E-07	1.01E-04	2.13E-07	7.75E-10	3.06E-07	4.55E-07	5.42E-09	1.03E-08	0.00E+00	1.34E-08	-8.93E-07
Human toxicity. Non-cancer	**CTUh**	3.73E-05	4.80E-09	2.13E-08	3.74E-05	4.57E-08	3.27E-10	2.22E-07	2.14E-07	2.19E-09	1.95E-09	0.00E+00	2.01E-09	4.09E-07
Human toxicity. Cancer	**CTUh**	2.03E-05	1.22E-10	6.03E-09	2.03E-05	1.46E-09	1.20E-11	5.61E-09	7.34E-09	1.09E-10	5.03E-11	0.00E+00	5.39E-11	-4.96E-08
Land use	**Pt**	2.12E+02	4.63E+00	6.94E+01	2.86E+02	3.00E+01	2.83E-01	6.97E+01	1.68E+02	9.64E-01	1.54E+00	0.00E+00	3.85E+00	-6.33E+01

* 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.

** The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

GWP-total: Climate change total

GWP-fossil: Climate change - fossil

GWP-biogenic: Climate change - biogenic

GWP-luluc: Climate change – land use and land use change

ODP: Ozone Depletion

AP: Acidification

EP-freshwater: Eutrophication aquatic freshwater

EP-terrestrial: Eutrophication terrestrial

POCP: Photochemical ozone formation

ADP-minerals & metals*: Depletion of abiotic resources – minerals and metals

ADP-fossil*: Depletion of abiotic resources – fossil fuels

WDP: Water use

Table 8. Potential environmental impact – additional mandatory and voluntary indicators according to EN 15804 for Orona Next Smart (S19) UC 2.

Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
GWP-total	**kg CO_2 eq.**	4.85E+01	3.34E-01	7.05E-01	4.95E+01	2.45E+00	4.66E-02	4.86E+00	1.59E+01	1.12E-01	1.39E-01	0.00E+00	4.94E-02	-2.02E+01
GWP-fossil	**kg CO_2 eq.**	4.76E+01	3.34E-01	1.15E+00	4.91E+01	2.44E+00	3.47E-02	4.85E+00	1.54E+01	1.11E-01	1.39E-01	0.00E+00	4.94E-02	-2.04E+01
GWP-biogenic	**kg CO_2 eq.**	7.66E-01	2.04E-04	-2.64E-01	5.02E-01	1.05E-03	1.19E-02	3.76E-04	4.44E-01	7.00E-04	7.40E-05	0.00E+00	-5.25E-06	2.37E-01
GWP-luluc	**kg CO_2 eq.**	7.40E-02	1.16E-04	2.24E-02	9.65E-02	1.09E-03	6.96E-05	6.41E-03	4.50E-02	1.15E-04	4.85E-05	0.00E+00	2.40E-05	-2.48E-02
ODP	**kg CFC 11 eq.**	3.78E-06	7.65E-08	1.68E-07	4.03E-06	5.36E-07	2.94E-09	6.43E-07	1.70E-06	1.83E-08	3.15E-08	0.00E+00	7.88E-09	-9.73E-07
AP	**mol H+ eq.**	3.07E-01	1.38E-03	8.43E-03	3.17E-01	1.43E-02	1.39E-04	4.24E-02	8.43E-02	5.04E-04	5.67E-04	0.00E+00	2.35E-04	-1.45E-01
EP-freshwater	**kg P eq**	3.54E-02	2.53E-05	4.67E-04	3.59E-02	2.01E-04	1.73E-05	4.87E-03	1.11E-02	3.33E-05	1.02E-05	0.00E+00	7.62E-06	-2.59E-02
EP-marine	**kg N eq.**	5.50E-02	4.11E-04	1.49E-03	5.69E-02	3.92E-03	5.66E-05	6.08E-03	1.48E-02	1.07E-04	1.70E-04	0.00E+00	3.60E-04	-2.55E-02
EP-terrestrial	**mol N eq.**	5.65E-01	4.50E-03	1.79E-02	5.87E-01	4.31E-02	2.76E-04	6.61E-02	1.54E-01	1.15E-03	1.86E-03	0.00E+00	7.79E-04	-2.81E-01
POCP	**kg NMVOC eq.**	2.01E-01	1.41E-03	7.20E-03	2.09E-01	1.26E-02	7.18E-05	2.06E-02	3.84E-02	3.70E-04	5.69E-04	0.00E+00	2.26E-04	-1.12E-01
ADP-minerals & metals*	**kg Sb eq.**	2.21E-02	8.34E-06	1.80E-05	2.21E-02	8.20E-05	1.80E-07	1.62E-03	1.11E-04	6.76E-06	3.75E-06	0.00E+00	4.85E-07	-5.41E-03
ADP-fossil*	**MJ**	6.05E+02	5.09E+00	2.44E+01	6.34E+02	3.60E+01	5.44E-01	6.60E+01	3.41E+02	1.75E+00	2.09E+00	0.00E+00	6.42E-01	-2.02E+02
WDP	**m^3**	1.61E+01	1.57E-02	1.13E+00	1.72E+01	1.09E-01	8.37E-03	9.69E-01	5.30E+00	1.68E-02	5.82E-03	0.00E+00	2.28E-02	-2.56E+00
GWP-GHG**	**kg CO_2 eq.**	4.85E+01	3.34E-01	7.05E-01	4.95E+01	2.45E+00	4.66E-02	4.86E+00	1.59E+01	1.12E-01	1.39E-01	0.00E+00	4.94E-02	-2.02E+01
Ionising radiation	**kBq U-235 eq**	4.71E+00	2.63E-02	3.14E-01	5.05E+00	1.89E-01	1.48E-02	5.11E-01	9.52E+00	2.21E-02	1.08E-02	0.00E+00	3.79E-03	-4.13E-01
Ecotoxicity, freshwater	**CTUe**	2.77E+03	4.13E+00	2.99E+01	2.80E+03	2.99E+01	4.21E-01	3.47E+02	2.45E+02	2.17E+00	1.67E+00	0.00E+00	1.90E+01	-1.95E+03
Particulate matter	**disease inc.**	3.73E-05	2.58E-08	9.52E-08	3.74E-05	1.44E-07	6.41E-10	2.44E-07	3.21E-07	4.16E-09	9.68E-09	0.00E+00	3.83E-09	-1.60E-06
Human toxicity. Non-cancer	**CTUh**	2.36E-05	4.56E-09	1.97E-08	2.36E-05	3.12E-08	3.45E-10	1.78E-07	1.99E-07	1.75E-09	1.83E-09	0.00E+00	6.35E-10	6.39E-07
Human toxicity. Cancer	**CTUh**	4.97E-06	1.13E-10	5.80E-09	4.98E-06	9.81E-10	1.41E-11	4.46E-09	7.16E-09	8.75E-11	4.71E-11	0.00E+00	1.60E-11	-9.33E-08
Land use	**Pt**	2.11E+02	4.48E+00	6.40E+01	2.79E+02	2.05E+01	3.40E-01	5.86E+01	1.90E+02	8.28E-01	1.44E+00	0.00E+00	1.11E+00	-8.53E+01

* 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.

** The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

GWP-total: Climate change total

GWP-fossil: Climate change - fossil

GWP-biogenic: Climate change - biogenic

GWP-luluc: Climate change – land use and land use change

ODP: Ozone Depletion

AP: Acidification

EP-freshwater: Eutrophication aquatic freshwater

EP-terrestrial: Eutrophication terrestrial

POCP: Photochemical ozone formation

ADP-minerals & metals*: Depletion of abiotic resources – minerals and metals

ADP-fossil*: Depletion of abiotic resources – fossil fuels

WDP: Water use

5.2 Impact on natural resources

Table 9. Impact on natural resources - Information on use of resources, waste production and output flows and biogenic carbon content for Orona Next Smart (S15) UC 2.

	Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Use of resources	PERE	MJ	6.46E+02	7.99E-02	2.29E+00	6.48E+02	8.47E-01	1.25E-01	5.98E+00	8.78E+01	2.12E-01	3.15E-02	0.00E+00	3.40E-02	-1.77E+02
	PERM	MJ	2.11E+00	0.00E+00	1.24E+01	1.45E+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
	PERT	MJ	6.48E+02	7.99E-02	1.47E+01	6.63E+02	8.47E-01	1.25E-01	5.98E+00	8.78E+01	2.12E-01	3.15E-02	0.00E+00	3.40E-02	-1.77E+02
	PENRE	MJ	6.00E+03	5.81E+00	2.46E+01	6.03E+03	5.68E+01	5.81E-01	8.82E+01	3.96E+02	2.34E+00	2.37E+00	0.00E+00	1.19E+00	-1.24E+03
	PENRM	MJ	7.18E+00	0.00E+00	2.51E+00	9.68E+00	0.00E+00	0.00E+00	2.46E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PENRT	MJ	6.01E+03	5.81E+00	2.71E+01	6.04E+03	5.68E+01	5.81E-01	8.84E+01	3.96E+02	2.34E+00	2.37E+00	0.00E+00	1.19E+00	-1.24E+03
	SM	kg	1.14E+00	0.00E+00	0.00E+00	1.14E+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
	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
	FW	m^3	9.49E+00	6.43E-04	2.32E-02	9.52E+00	6.54E-03	5.14E-04	1.86E-01	3.41E-01	9.92E-04	2.35E-04	0.00E+00	1.14E-03	-7.84E-02
Waste production and output flows	Hazardous waste disposed	kg	1.69E+00	1.34E-05	2.51E-05	1.69E+00	1.24E-04	4.13E-07	7.05E-04	2.75E-04	7.28E-06	9.96E-07	0.00E+00	1.62E-06	-1.35E+03
	Non-hazardous waste disposed	kg	1.74E+02	3.35E-01	2.49E-01	1.75E+02	1.96E+00	8.03E-02	1.27E+00	1.25E+00	4.13E-02	1.07E-01	0.00E+00	5.70E+00	3.60E-07
	Radioactive waste disposed	kg	1.74E-02	3.72E-05	1.27E-04	1.75E-02	3.61E-04	2.95E-06	3.44E-04	2.00E-03	1.26E-05	1.52E-05	0.00E+00	6.58E-06	-6.33E+01
	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
	Material for recycling	kg	0.00E+00	0.00E+00	6.70E-01	6.70E-01	0.00E+00	6.49E-01	1.39E-01	0.00E+00	0.00E+00	0.00E+00	7.59E+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
	Exported energy. electricity	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
	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
Biogenic carbon content	Biogenic carbon content in product	kg C	19.78				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
	Biogenic carbon content in packaging	kg C	94.53				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

PERE: Use of renewable primary energy excluding renewable energy resources used as raw material

PERM: Use of renewable primary energy resources used as raw material

PERT: Total use of renewable primary energy resources (primary energy and primary energy resources used as raw material)

PENRE: Use of non-renewable primary energy excluding non-renewable energy resources used as raw material

PENRM: Use of non-renewable primary energy resources used as raw material

PENRT: Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw material

SM: Use of secondary material

RSF: Use of renewable secondary fuels

NRSF: Use of non-renewable secondary fuels

FW: Net use of fresh water

Table 10. Impact on natural resources - Information on use of resources, waste production and output flows and biogenic carbon content for Orona Next Smart (S19) UC 2.

	Indicator	Unit	A1	A2	A3	Tot.A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	D
Use of resources	PERE	MJ	1.83E+03	7.23E-02	1.63E+00	1.83E+03	5.90E-01	1.42E-01	4.78E+00	9.19E+01	1.87E-01	2.95E-02	0.00E+00	1.16E-02	-2.40E+02
	PERM	MJ	2.92E+00	0.00E+00	1.18E+01	1.47E+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
	PERT	MJ	1.83E+03	7.23E-02	1.34E+01	1.84E+03	5.90E-01	1.42E-01	4.78E+00	9.19E+01	1.87E-01	2.95E-02	0.00E+00	1.16E-02	-2.40E+02
	PENRE	MJ	1.95E+04	5.41E+00	2.30E+01	1.96E+04	3.82E+01	5.71E-01	6.97E+01	3.56E+02	1.85E+00	2.22E+00	0.00E+00	3.68E-01	-1.80E+03
	PENRM	MJ	4.17E+00	0.00E+00	3.37E+00	7.54E+00	0.00E+00	0.00E+00	2.00E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PENRT	MJ	1.95E+04	5.41E+00	2.64E+01	1.96E+04	3.82E+01	5.71E-01	6.99E+01	3.56E+02	1.85E+00	2.22E+00	0.00E+00	3.68E-01	-1.80E+03
	SM	kg	1.18E+00	0.00E+00	0.00E+00	1.18E+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
	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
	FW	m^3	2.82E+01	5.77E-04	2.31E-02	2.82E+01	4.18E-03	3.81E-04	1.48E-01	2.24E-01	6.32E-04	2.20E-04	0.00E+00	3.78E-04	-9.84E-02
Waste production and output flows	Hazardous waste disposed	kg	2.08E+00	1.30E-05	2.25E-05	2.08E+00	9.21E-05	3.65E-07	5.56E-04	2.17E-04	5.76E-06	1.09E-06	0.00E+00	5.59E-07	-1.95E+03
	Non-hazardous waste disposed	kg	4.12E+02	3.27E-01	2.26E-01	4.13E+02	1.35E+00	8.15E-02	1.01E+00	1.09E+00	3.29E-02	1.00E-01	0.00E+00	1.65E+00	5.46E-07
	Radioactive waste disposed	kg	6.65E-02	3.47E-05	1.09E-04	6.67E-02	2.43E-04	4.06E-06	2.71E-04	2.56E-03	1.13E-05	1.43E-05	0.00E+00	2.05E-06	-8.53E+01
	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
	Material for recycling	kg	0.00E+00	0.00E+00	5.36E-01	5.36E-01	0.00E+00	6.30E-01	9.75E-02	0.00E+00	0.00E+00	0.00E+00	1.09E+01	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
	Exported energy. electricity	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
	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
Biogenic carbon content	Biogenic carbon content in product	kg C	27.19				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
	Biogenic carbon content in packaging	kg C	110.94				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

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PERM: Use of renewable primary energy resources used as raw material

PERT: Total use of renewable primary energy resources (primary energy and primary energy resources used as raw material)

PENRE: Use of non-renewable primary energy excluding non-renewable energy resources used as raw material

PENRM: Use of non-renewable primary energy resources used as raw material

PENRT: Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw material

SM: Use of secondary material

RSF: Use of renewable secondary fuels

NRSF: Use of non-renewable secondary fuels

FW: Net use of fresh water

06 References

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EN ISO 14040:2006
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Environmental management systems — Requirements with guidance for use.

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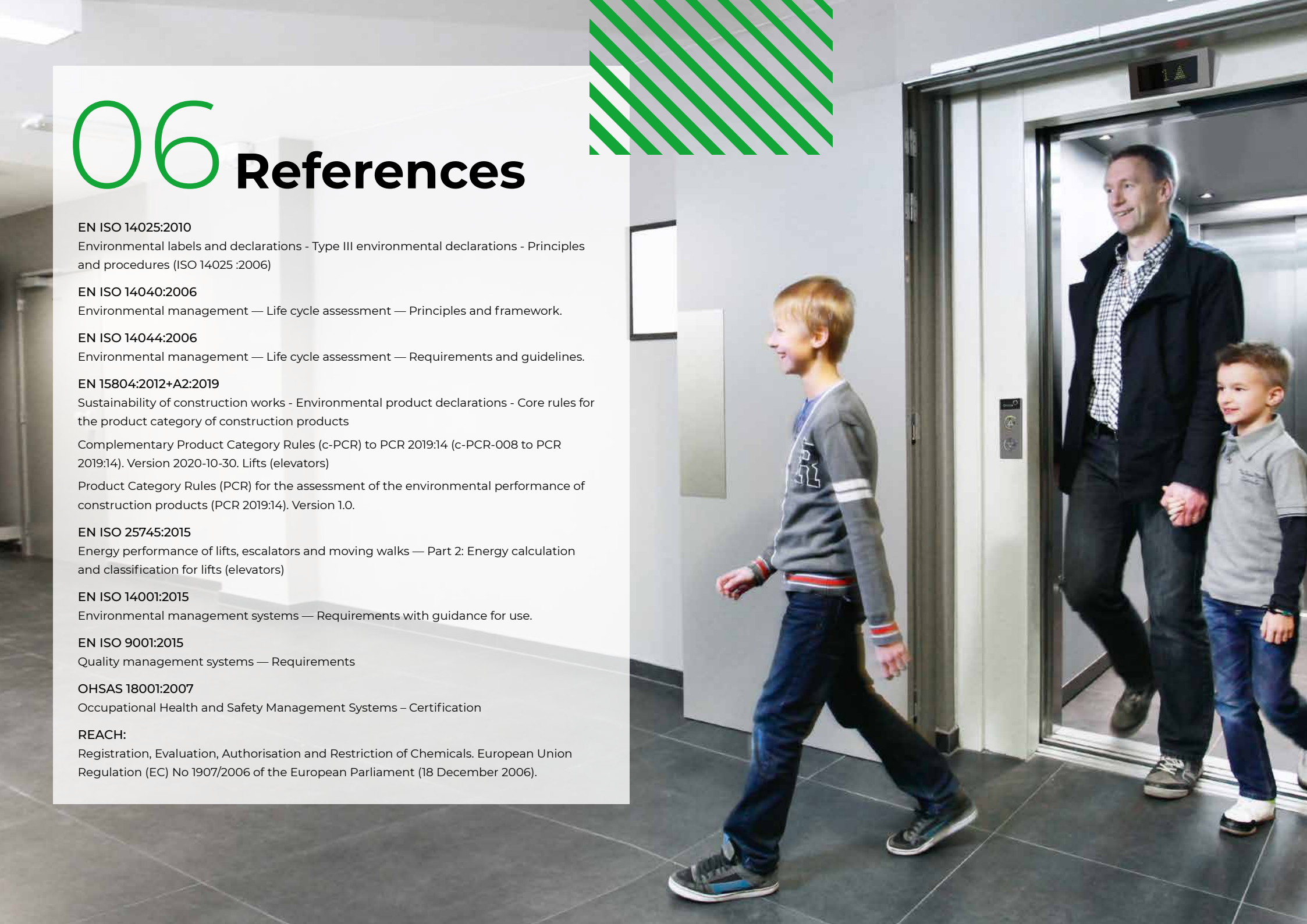
Registration, Evaluation, Authorisation and Restriction of Chemicals. European Union Regulation (EC) No 1907/2006 of the European Parliament (18 December 2006).



07 Glossary

EPD - Environmental Product Declaration

Environmental Product Declarations (EPD) are documents that are transparently displayed and verified by an independent third party, showing information related to the environmental profile of the product or service based on a Life Cycle Analysis (LCA) according to ISO 14040. Declarations are based on ISO 14025 (Environmental labels and declarations, Type III environmental declarations, principles).

FU - Functional Unit

The functional unit of a product system is a quantified description of the performance requirements that the product system fulfils. For lifts expressed as one tonne [t], transported over one kilometre [km], i.e. tonne-kilometre [tkm].

LCA - Life Cycle Assessment

The Life Cycle Analysis (LCA) is an international methodology that quantifies the environmental impacts associated with the products and services that are designed and manufactured, detecting areas for improvement through the study of the entire life cycle of the product, based on ISO 14040 and ISO 14044 standards.

PCR - Product Category Rules

Product Category Rules (PCRs) provide the rules, requirements, and guidelines for developing an EPD for a specific product category. They are a key part of ISO 14025 as they enable transparency and comparability between EPDs.

BREEAM - Building Research Establishment Environmental Assessment Methodology

BREEAM is the world's leading sustainability assessment method for master planning projects, infrastructure and buildings. It recognises and reflects the value in higher performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

PEFC –Program for the Endorsement of Forest Certification

PEFC, the Programme for the Endorsement of Forest Certification, is a leading global alliance of national forest certification systems. As an international non-profit, non-governmental organization, they are dedicated to promoting sustainable forest management through independent third-party certification. The consumer is guaranteed that the certified product comes from a responsibly-managed forest that meets environmental, social and economic criteria. In the case of recycled forest material, the chain of custody ensures that products can be traced from the consumer to the recovery centre.

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