



Environmental Product Declaration

Schindler 6000

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in accordance to ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.



Schindler

Program-related information and verification

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Geographical scope:	Europe
Product category rules (PCR):	EN 15804:2012+A2:2019/AC:2021 as Core PCR PCR 2019:14 Construction Products, version 1.3 C-PCR-008 Lifts (to PCR 2019:14), version 2020-10-30
PCR review was conducted by:	The Technical Committee of the International EPD® System. See www.environdec.com/about-us/the-international-epd-system-about-the-system for a list of members. Review chair: Gorka Benito Alonso. The review panel may be contacted via the Secretariat www.environdec.com/contact-us .
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Verification:

CEN standard EN15804 serves as the core PCR
Independent verification of the declaration and data, according to EN ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> external
Third party verifier: <i>Angela Schindler</i> Angela Schindler, Umweltberatung und Ingenieurdienstleistungen Approved by The International EPD(R) system

About Schindler

Founded in Switzerland in 1874, the Schindler Group is a leading global provider of elevators, escalators, and related services. Schindler mobility solutions move more than one billion people every day all over the world.

Behind the company's success are over 69,000 employees in more than 1,000 branches in over 100 countries throughout Europe, North & South America, Asia-Pacific, and Africa with manufacturing plants strategically located in Europe, Brazil, USA, China, and India.

Schindler manufactures, installs, services, and modernizes elevators, escalators, and moving walks for almost every type of building worldwide. Schindler's offerings range from cost-effective solutions for low-rise residential buildings to sophisticated access and transport management concepts for skyscrapers.

Schindler moves people and materials, and connects vertical and horizontal transport systems through intelligent mobility solutions driven by green and user-friendly technologies. Schindler products can be found in many well-known buildings across the globe, including residential and office buildings, airports, shopping centers / retail establishments, and buildings with special requirements.



A network of more than 1,000 branches in over 100 countries.

Comparability between EPDs based on this c-PCR-008 (to PCR 2019:14) and EPDs based on PCR 2015:05 is not conceivable and shall be avoided. Any comparability of this kind shall be considered as false and misleading the EPD user. EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

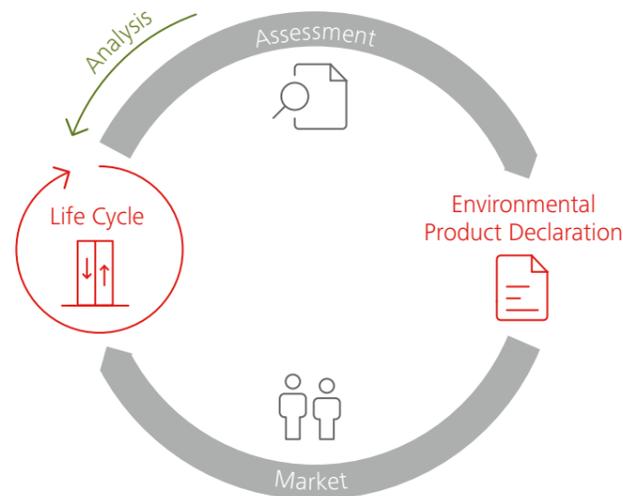
We Elevate... Sustainability

Schindler's commitment to sustainability is enshrined in our Corporate Sustainability Policy, which defines our approach to sustainability based on four pillars – People, Product, Planet, and Performance – and the journey we have embarked on regarding key sustainability challenges.

Sustainability is a dual commitment for Schindler: we want to fulfill our vision of leadership in urban mobility solutions and strive to optimize our environmental impact while investing in people and society. Schindler has demonstrated this commitment by achieving the ISO 9001/14001 certification in 2020.

Mobility is essential in the world we live and work. Every day, more than one billion people all over the world place their trust in Schindler. That is why we are committed to continuously improving the environmental impact of our products and services along the whole life cycle.

With over 145 years of history, Schindler has grown around the world and is recognized as a responsible corporate citizen. We firmly intend to continue evolving along this path with a global perspective on sustainability and a focus on the most relevant key performance indicators.



From design to recycling

From the first sketches in design, right through to disposal and recycling, environmental assessment considerations are an integral part of the Schindler product development process. The assessment rigidly follows the ISO 14040 standard and is embedded in the ISO 14001 Environmental Management System, which is applied at Corporate Research & Development and provides transparency in all phases.

Life Cycle Assessment (LCA)

Schindler conducts Life Cycle Assessments of its products. The objective is to continuously improve the environmental performance of the products. A holistic approach is applied all the way from initial product development through to the product improvement initiatives.

Environmental Product Declaration (EPD)

The EPD provides verified information on the environmental impact of a product. The declaration is based on a comprehensive LCA and follows the ISO 14025 guideline. A complex issue made understandable.

Product Category Rules (PCR)

Product Category Rules define the rules and requirements for EPDs of a certain product category. They are a key part of ISO 14025 as they enable transparency and comparability between EPDs.

Thinking globally. Acting locally.

Local production

With manufacturing plants strategically located in Europe, Brazil, USA, China, and India, Schindler focuses on local production for the local market. This reduces the environmental impact from shipping and transport around the world.

In Europe, Schindler has manufacturing plants in Switzerland, Slovakia. With over 30% of the components in the Schindler 6000 produced or assembled in Switzerland and more than 65% of components produced or assembled in the European Union, we can ensure the most effective and efficient transport methods are used to ship material to each jobsite and minimize our carbon footprint.

Modular products

Our modular approach to system development enables us to share components across products, including the Schindler 1000, Schindler 3000, Schindler 5000 and Schindler 6000. This enables better sourcing management with our suppliers and sub-suppliers and consolidation of shipments to reduce the environmental impact caused by the transport of material to Schindler manufacturing plants.

By optimizing our logistic activities and manufacturing supplier base, our European supply chain has reduced the logistic carbon dioxide footprint of the Schindler 6000 by over 30%.

Recyclable packaging

Packaging of the Schindler 6000 is mainly comprised of environmentally friendly and recyclable material, such as cardboard, paper, PE plastic and wood. It is made with materials that are free from fumigation. This enhanced packaging features a robust and damage-resistant shell to protect our products in transit and on the construction site, while also reducing waste. It has been qualified in a test lab to ensure durability.

The packaging concept has been defined in combination with the installation process and has been designed to support the sequence of activities during the elevator installation. This ensures material remains un-damaged since it can remain packaged and protected until it is required for installation.

Digital processes

To improve our installation process and drive sustainability in the field, Schindler has digitized the installation and commissioning manuals for our fitters. By making these documents available on mobile devices, we have reduced our impact on natural resources.





Perfectly suited to the environment

Key figures Schindler 6000

Schindler 6000

This premium product offers high-end and robust design solutions to meet the needs of the most ambitious projects around the world.

Schindler 6000 combines high-rise performance with maximum flexibility – for any rise up to 150 meters, speed up to 3.0 m/s, and groups up to eight cars. This flexibility also extends to the design, dimensions, configurations, and application range – even addressing the needs of demanding public transit, mixed-use and commercial projects.

Schindler 6000 integrates the latest technology, a flexible, durable structure, and the highest quality materials to deliver faster handling times for higher passenger volumes – all with optimum ride quality and greater reliability.

Schindler 6000	
Elevator System	E55.1 and E55.2
Capacity	Max 2500kg
Travel height	Up to 150m
Door width	800 - 1800mm
Door height	Up to 3,000mm
Drive	Synchronous machine with regenerative drive with STO technology
Speed	1.0 - 3.0 m/s
Number of stops	Up to 50, with a maximum of 80 openings
Car groups	Up to 8 cars, unlimited with Schindler PORT technology
Entrances	One- or two-sided



Overall system

- Robust and durable design that optimizes material usage
- Remote connectivity improves service efficiency and reduces unnecessary trips to the installation

Drive

- Lubrication-free, gearless machine for smooth ride quality
- Regenerative frequency converter, available as an option, to return energy to the grid for use in the building or elevator operation
- Stable start without high peak current, quickly reaching a low energy consumption level
- Permanent magnet machine for higher energy efficiency
- Disk brake provides a smooth stop for passengers

Car

- Ceiling lights, car indicator and landing indicators feature energy saving LED lights
- Door drive with stand-by mode for safety and energy conservation
- Lightweight interior materials improve operational efficiency and energy usage

Hoistway

- Updated elevator positioning system eliminates unnecessary trips to reset the system
- Roller guide shoes improve the ride quality and the efficiency of the elevator, especially while traveling at higher speeds

Control

- System switches car lights and ventilation into stand-by mode when not in use
- Smart operation, down collective and selective collective controls for efficient passenger transportation

Representative unit

based on an average mid-rise commercial building in Europe

Elevator System	5.1
Rated Load	1600 kg
Speed	1 m/s
Travel height	12 m
Number of floors / entrances	5 / 1

In case of major deviations to the given configuration, please contact Schindler to anticipate the impact.

Car W/D/H (mm)	1400x2400x2300
Door W/H (mm)	1100x2100
Operation days per year	365
Usage category	3
Reference service life (RSL)	25 years

Elevator life cycle insights

System boundary

This EPD covers the full life cycle with a cradle to grave approach. The PCR focuses on four main stages. The Product stage (A1-A3) includes the raw material extraction and production, transport to the manufacturing site (primarily by truck), and manufacturing and assembly of components, considering the demand of energy, auxiliary and operational materials, and packaging. The Construction process stage (A4-A5) includes the transportation to the installation site by truck and the installation, considering the energy demand and auxiliary materials including related Volatile Organic Compound (VOC) emissions. The Use stage (B1-B7) includes the maintenance, considering the transportation of employees to the installation site and auxiliary materials, including related VOC emissions and replacement parts production and

energy use during operation and standby during the reference service life. All other modules are not relevant and modernization is not foreseen. The End-of-life stage (C1-C4) includes the deconstruction, considering the energy demand and auxiliary materials, the transportation by truck to waste processing facilities, the waste processing, considering sorting, and the waste disposal, considering a scenario with recycling, incineration, and landfill. Finally, the benefits and loads beyond the system boundaries stage (D) include the potential for recycling by substitution of primary material and energy recovery. Infrastructure and capital goods are included in most background data fromecoinvent. No additional infrastructure and capital goods were considered for own factory balances.

Cut-off criteria

General quality and cut-off criteria were considered, as defined for the evaluation in the PCR and EN 15804. The total mass of the elevator materials considered equals the total mass of the elevator. All inflows and

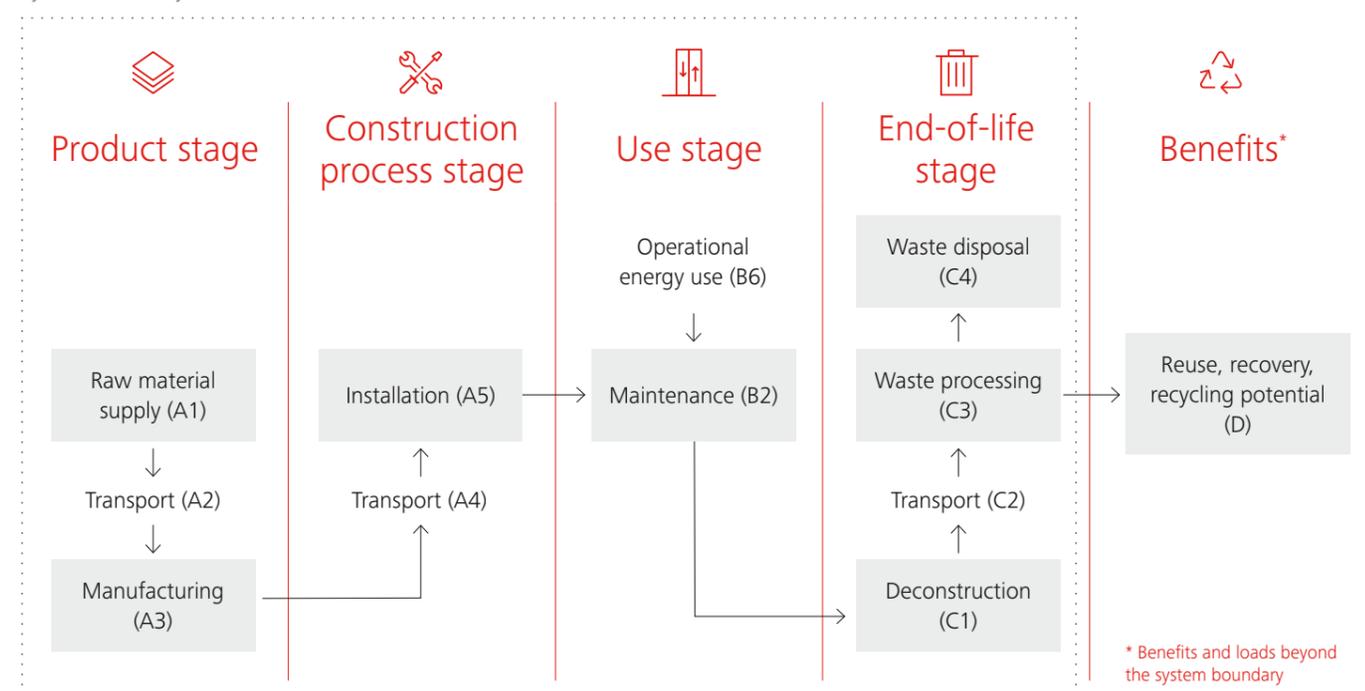
outflows, for which data are mandatory, are included in the calculations. Special emphasis was given to material and energy flows that are known to have a large impact.

		Modules declared	Geography	Share of specific data
Product stage	Raw material supply	A1 ✓	Global	> 90%
	Transport	A2 ✓	EU/Global	
	Manufacturing	A3 ✓	EU*/CN	
Construction Process stage	Transport	A4 ✓	EU	> 90%
	Installation	A5 ✓	FR	
Use stage	Use	B1 ND	ND	
	Maintenance	B2 ✓	FR	
	Repair	B3 ND	ND	
	Replacement	B4 ND	ND	
	Refurbishment	B5 ND	ND	
	Operational energy use	B6 ✓	FR	
	Operational water use	B7 ND	ND	
End-of-life stage	Deconstruction	C1 ✓	FR	
	Transport	C2 ✓	EU	
	Waste processing	C3 ✓	EU	
	Waste disposal	C4 ✓	EU	
Beyond the system boundaries	Reuse, recovery, recycling, potential	D ✓	EU	

This declaration covers "cradle to grave". All mandatory modules covered in the EPD are marked with a ✓. For non-relevant fields, ND is marked in the table.

* Manufacturing locations in CH, CZ, ES, FL, FR, IT, SK

System boundary

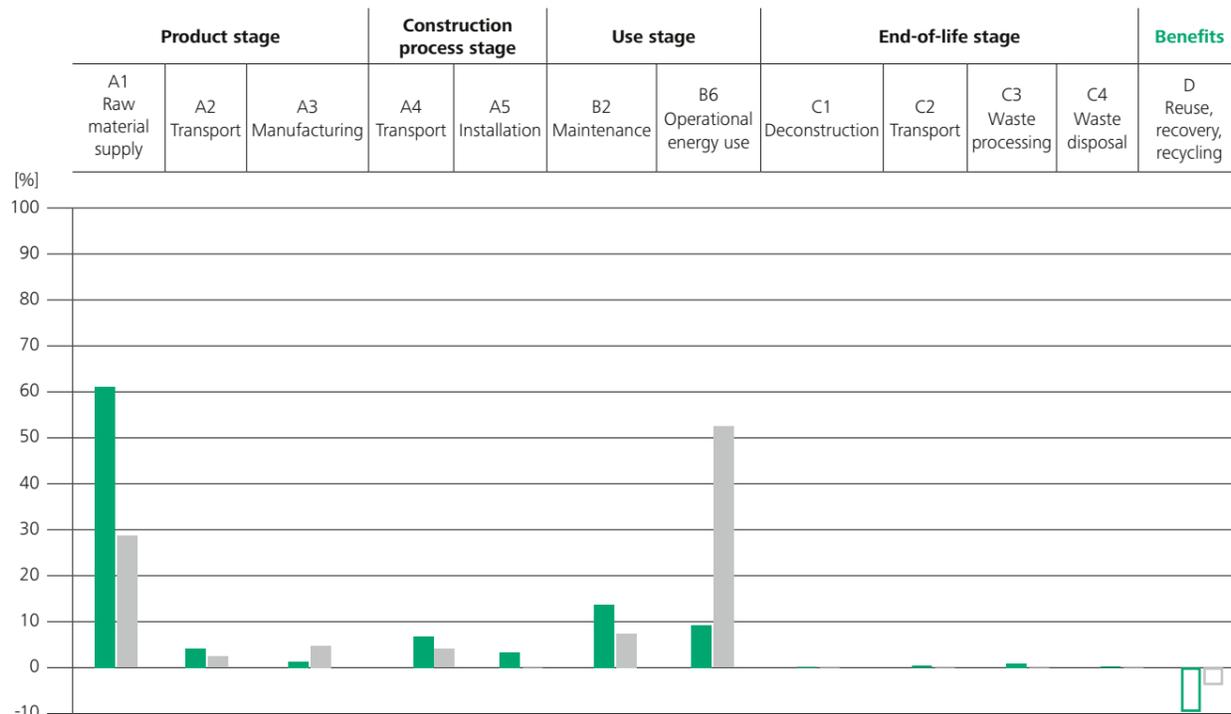


Our mission: reduce emissions

Consolidated impact

Values shown refer to the representative unit of Schindler 6000, as shown on page 7 based on a RSL of 25 years. The most relevant processes, energy, and material flows are indicated.

- Climate change total (GWP_{tot})
- Resource use - fossil fuels (ADPF)



Data reflects UC3 results

Summary

Energy rating efficiency has been further improved compared to the previous product generation. In the operations stage, we have achieved a Class A energy efficiency rating for the defined representative elevator. The energy consumption of the elevator during operation followed by the material supply for production have the biggest impact on resources. The profile of the impacts of the energy consumption

depends on the chosen electricity supply. The French supply mix was considered for the installation in Paris. Further relevant factors are the lifetime of elevator parts and the usage category. With shorter lifetime of parts and lower usage, the portion of materials becomes more important.

Environmental impact

In the LCA, impact assessment methods and characterization factors were used at the midpoint level, as requested in the PCR (i.e. without normalization and weighting). Selected core environmental impact categories for this study were global warming (IPCC 2013 100 year horizon), effects on the stratospheric ozone layer (WMO, 2014), acidification (Seppälä et al., 2006), eutrophication (Struijs et al. 2009b), photochemical ozone creation (Van Zelm et al.), abiotic depletion of elements (CML 2001, baseline, August 2016 version), abiotic depletion of fossil fuels (Guinée et al.), and water deprivation potential (Boulay et al., 2016).

Impacts per functional unit

The PCR defines the following functional unit for product comparison.

The primary purpose of an elevator is to vertically transport goods and passengers. Therefore, for the purpose of this EPD, the functional unit is the result of a load transported over a distance, expressed in tonne-kilometer [tkm].

The Transportation Performance (TP) indicates the total amount of tkm performed by the elevator over the defined service life with an average load, according to ISO 25745-2.

For the defined representative unit and a RSL of 25 years, the TP per applied usage category is:

Usage Category	Transportation Performance (TP)
3	772.6 tkm



Minimizing material, maximizing space

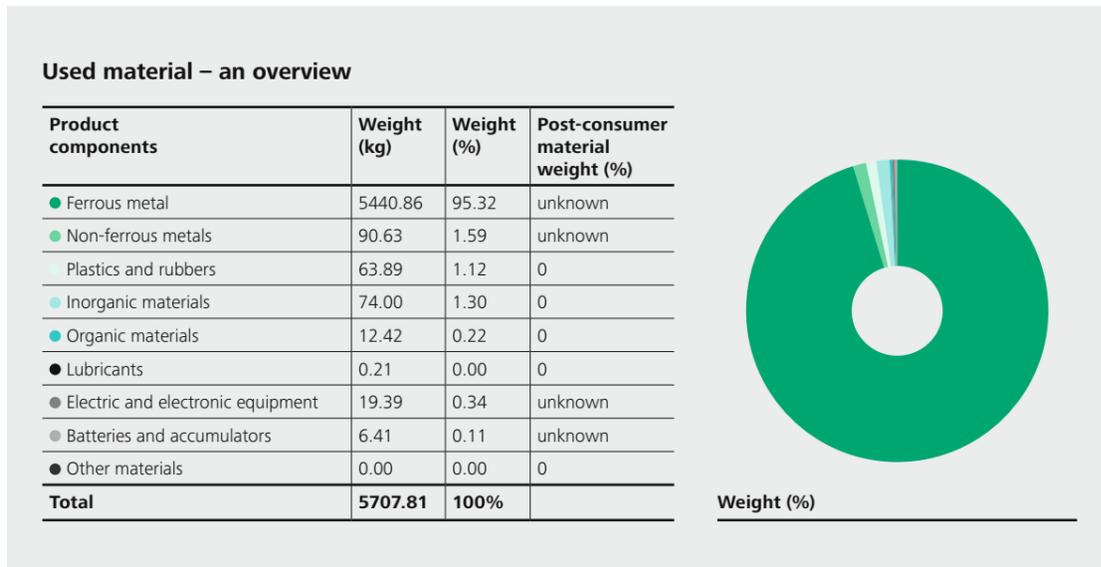
Potential environmental impact

Material that matters

The table and graph below show the resulting material composition of the installed elevator with a total weight of 5707.80 kg, without packaging. It is mainly composed of ferrous metals. The biogenic carbon content in the product is below 5%

At the end of use almost all material is suitable for recycling. An average material loss of 5% in production was assumed additionally for the consumption of raw material. The Schindler 6000 elevators emit no VOCs

or other harmful substances once installed. The cabling and wiring in a Schindler elevator can also be ordered halogen free. Hazardous substances are avoided as much as possible, in accordance with REACH, its candidate list and other regulations. However in some articles used in our products substances of the candidate list, in particular lead (CAS-No. 7439-92-1) may still exist and are reported in ECHA's SCIP database at <https://echa.europa.eu/de/factsheet/-/factsheet/173869632>.



Packaging material

The table shows the typical composition of material used for packaging in relation to the total weight of the elevator system – once the elevator arrives on the construction site.

Schindler seeks to maximize the transport capacity per pallet for each delivery. Furthermore, almost all materials are suitable for recycling, e.g. paperboard and wood.

Composition of packaging material				
Product components	Weight (kg)	Weight (%)	Weight (%) packaging vs product	Biogenic carbon content (kg C)
Wood*	326.40	78.39	5.72	1.63E+02
Cardboard*	83.30	20.00	1.46	3.83E+01
Plastic	4.50	1.08	0.08	0.00E+00
Steel	2.20	0.53	0.04	0.00E+00
Total	416.40	100%	7.30%	2.02E+02

*Renewable material

Table of results – core environmental impact UC 3 per tkm

Impact category	Unit	Product stage				Construction process stage		Use stage		End-of-life stage				Total without D	Net Benefits
		A1	A2	A3	Sum A1–A3	A4	A5	B2	B6	C1	C2	C3	C4		
GWP _{tot}	kg CO ₂ eq.	1.88E+01	1.26E+00	3.52E-01	2.04E+01	2.06E+00	9.77E-01	4.16E+00	2.82E+00	4.55E-03	1.23E-01	2.42E-01	4.46E-02	3.08E+01	-2.96E+00
GWP _{fos}	kg CO ₂ eq.	1.87E+01	1.25E+00	1.29E+00	2.13E+01	2.06E+00	2.03E-02	4.16E+00	2.81E+00	4.53E-03	1.23E-01	2.42E-01	3.30E-02	3.07E+01	-2.96E+00
GWP _{bio}	kg CO ₂ eq.	1.05E-02	3.63E-04	-9.47E-01	-9.36E-01	5.98E-04	9.56E-01	5.44E-03	1.00E-02	1.61E-05	4.52E-05	1.25E-04	1.16E-02	4.78E-02	3.65E-03
GWP _{uluc}	kg CO ₂ eq.	2.36E-02	6.15E-04	7.78E-03	3.20E-02	1.00E-03	8.16E-06	4.06E-03	1.92E-03	3.10E-06	7.21E-05	4.15E-05	3.15E-06	3.91E-02	2.88E-04
ODP	kg CFC 11 eq.	3.90E-07	2.74E-08	3.90E-08	4.57E-07	4.51E-08	6.65E-10	1.27E-07	1.16E-07	1.88E-10	2.68E-09	4.80E-09	5.11E-11	7.53E-07	-9.27E-08
AP	mol H ⁺ eq.	1.48E-01	5.29E-03	5.61E-03	1.59E-01	8.51E-03	1.53E-04	2.44E-02	1.97E-02	3.17E-05	4.75E-04	2.03E-04	2.06E-05	2.13E-01	-2.74E-02
EP _{fw}	kg P eq.	1.26E-02	8.82E-05	4.17E-04	1.31E-02	1.45E-04	6.53E-06	2.12E-03	1.18E-03	1.90E-06	1.04E-05	1.41E-05	8.62E-07	1.66E-02	-2.25E-03
EP _{mar}	kg N eq.	2.22E-02	1.98E-03	1.13E-03	2.53E-02	3.25E-03	5.34E-05	4.89E-03	3.80E-03	6.13E-06	1.73E-04	8.21E-05	3.76E-04	3.79E-02	-2.50E-03
EP _{ter}	mol N eq.	3.13E-01	2.11E-02	1.07E-02	3.45E-01	3.47E-02	4.88E-04	5.10E-02	3.12E-02	5.03E-05	1.85E-03	6.68E-04	8.07E-05	4.65E-01	-3.77E-02
POCP	kg NMVOC eq.	9.54E-02	7.62E-03	4.40E-03	1.07E-01	1.25E-02	2.21E-04	1.85E-02	1.06E-02	1.71E-05	6.78E-04	1.88E-04	2.45E-05	1.50E-01	-1.98E-02
ADPE*	kg Sb eq.	7.39E-04	4.03E-06	9.27E-06	7.53E-04	6.65E-06	2.67E-07	4.46E-04	1.32E-04	2.14E-07	5.37E-07	1.22E-07	1.14E-08	1.34E-03	-2.96E-04
ADPF*	MJ	2.10E+02	1.79E+01	3.41E+01	2.62E+02	2.94E+01	8.99E-01	5.42E+01	3.83E+02	6.17E-01	1.73E+00	4.01E-01	4.34E-02	7.32E+02	-2.76E+01
WDP*	m ³ depriv.	3.44E+00	7.31E-02	3.74E-01	3.89E+00	1.19E-01	3.22E-03	7.11E-01	1.04E+00	1.68E-03	7.16E-03	9.39E-02	1.69E-03	5.87E+00	-3.58E+00
Additional impact															
GWP _{GHG} **	kg CO ₂ eq.	1.88E+01	1.26E+00	1.31E+00	2.13E+01	2.06E+00	2.03E-02	4.16E+00	2.82E+00	4.55E-03	1.23E-01	2.42E-01	3.32E-02	3.08E+01	-2.96E+00

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 method Environmental Footprint 3.1 was applied for the assessment.

- GWP_{tot} Climate change total
- GWP_{fos} Climate change – fossil
- GWP_{bio} Climate change – biogenic
- GWP_{uluc} Climate change – land use and land use change
- ODP Ozone Depletion
- AP Acidification
- EP_{fw} Eutrophication aquatic freshwater
- EP_{mar} Eutrophication aquatic marine
- EP_{ter} Eutrophication terrestrial
- POCP Photochemical ozone formation
- ADPE Depletion of abiotic resources – minerals and metals
- ADPF Depletion of abiotic resources – fossil fuels
- WDP Water use
- GWP_{GHG} Climate change - greenhouse gas

* 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 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. Thus, this indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

Impact on natural resources

Use of resources

Material resources are based on specific data of the product, i.e. new and replacement material, packaging, and auxiliary materials used in the manufacturing.

Energy resources are calculated based on measurements or LCI-data. All data has been extended to their life cycle scope.

Table of results – use of resources UC 3 per tkm

Impact category	EN15804 Unit	Product stage				Construction process stage		Use stage				End-of-life stage				Total without D	Net Benefits
		A1	A2	A3	Sum A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	C1	C2		
PERE	MJ	1.27E+01	2.77E-01	3.30E-01	1.33E+01	4.57E-01	1.07E+01	4.83E+00	3.24E+01	5.23E-02	3.76E-02	1.82E-01	2.28E-03	6.19E+01	-2.98E+00		
PERM**	MJ	3.21E-01	0.00E+00	1.06E+01	1.09E+01	0.00E+00	-1.06E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.46E-01	0.00E+00	1.75E-01	0.00E+00		
PERT	MJ	1.53E+01	2.77E-01	1.09E+01	2.65E+01	4.57E-01	6.01E-02	4.83E+00	3.24E+01	5.23E-02	3.76E-02	3.57E-02	2.28E-03	6.44E+01	-2.98E+00		
PENRE	MJ	2.07E+02	1.79E+01	3.39E+01	2.59E+02	2.94E+01	1.07E+00	5.35E+01	3.83E+02	6.17E-01	1.73E+00	1.41E+00	4.34E-02	7.29E+02	-2.76E+01		
PENRM**	MJ	2.63E+00	0.00E+00	1.75E-01	2.81E+00	0.00E+00	-1.75E-01	7.13E-01	0.00E+00	0.00E+00	0.00E+00	-1.01E+00	0.00E+00	2.33E+00	0.00E+00		
PENRT	MJ	2.10E+02	1.79E+01	3.41E+01	2.62E+02	2.94E+01	8.99E-01	5.43E+01	3.83E+02	6.17E-01	1.73E+00	4.01E-01	4.34E-02	7.32E+02	-2.76E+01		
SM*	kg	2.25E+00	0.00E+00	1.13E-01	2.36E+00	0.00E+00	0.00E+00	2.65E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.38E+00	0.00E+00		
RSF	MJ	0.00E+00	0.00E+00	1.05E-01	1.05E-01	0.00E+00	0.00E+00	5.35E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-01	0.00E+00		
NRSF	MJ	0.00E+00	0.00E+00	1.05E-01	1.05E-01	0.00E+00	0.00E+00	5.35E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-01	0.00E+00		
FW	m³	1.00E-01	2.00E-03	1.62E-02	1.19E-01	3.29E-03	2.40E-04	1.98E-02	1.09E-01	1.76E-04	2.32E-04	2.57E-03	4.64E-05	2.54E-01	-7.69E-02		

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 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

* Average recycled content was considered for metal supply; ferrous metal 30% (World Steel Association), aluminum 74%, copper 20% (ecoinvent).

** For modeling the balance of input and output PERM and PENRM the approach B from Annex 3 of the construction PCR (v1.3.1) was used.

The balance considers the energy used as raw material in product and packaging, minus the usable energy that has left the product system.

The result A-C describes the overall loss of usable energy

Recognizing value at the end of life

Waste – Categories

Information on waste is given in three categories, considering potential risks from deposition of materials. The highest amount of waste is related to categories with low risk „non-hazardous waste“. Relevant

contributions result from raw material extraction and transformation including mining and processing of metals and from manufacturing.

Table of results – waste categories UC 3 per tkm

Impact category	EN15804 Unit	Product stage				Construction process stage		Use stage		End-of-life stage				Total without D	Net Benefits
		A1	A2	A3	Sum A1-A3	A4	A5	B2	B6	C1	C2	C3	C4		
HWD	kg	2.88E-03	1.14E-04	1.55E-04	3.15E-03	1.87E-04	8.21E-07	4.41E-04	2.47E-04	3.99E-07	1.10E-05	1.61E-06	1.90E-07	4.04E-03	-3.60E-04
NHWD	kg	5.59E+00	8.85E-01	1.46E-01	6.62E+00	1.43E+00	9.26E-03	1.09E+00	7.08E-01	1.14E-03	5.52E-02	3.06E-02	1.31E-01	1.01E+01	-9.64E-01
RWD	kg	1.87E-04	5.79E-06	2.05E-04	3.98E-04	9.58E-06	8.15E-06	5.94E-05	4.96E-03	8.00E-06	8.51E-07	6.95E-07	4.61E-08	5.45E-03	-4.52E-06

HWD Hazardous waste disposal

RWD Radioactive waste disposal

NHWD Non-hazardous waste disposal

Waste – Output flow

The elevator consists of a high number of materials with recycling potential. Plastic and organic material

delivered to municipal incineration were considered for energy recovery. No parts are considered for re-use.

Table of results – environmental output flow UC 3 per tkm

Impact category	EN15804 Unit	Product stage				Construction process stage		Use stage		End-of-life stage				Total
		A1	A2	A3	Sum A1-A3	A4	A5	B2	B6	C1	C2	C3	C4	
CRU	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
MFR	kg	0.00E+00	0.00E+00	6.33E-01	6.33E-01	0.00E+00	5.39E-01	1.40E-01	0.00E+00	0.00E+00	0.00E+00	2.77E-03	7.19E+00	8.50E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-02	0.00E+00	0.00E+00	0.00E+00	5.32E-02	0.00E+00	7.51E-02
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.01E+00	3.00E-01	0.00E+00	0.00E+00	0.00E+00	5.16E-01	0.00E+00	3.82E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.62E+00	5.61E-01	0.00E+00	0.00E+00	0.00E+00	9.63E-01	0.00E+00	7.14E+00

CRU Components for re-use

EEE Exported Energy Electrical

MFR Materials for recycling

EET Exported Energy Thermal

MER Materials for energy recovery

Scenarios

Electricity and district heat in manufacturing (A3) and operation (B6) stage

Electricity and district heat are used during the manufacturing stage from suppliers in different countries. Each country has its own electricity and district heat mix with its own composition and environmental impact. The following table shows the GWP_{GHG} emission factors in kg CO₂ eq./kWh of the country specific supply mix. French supply mix was applied for the operational energy use stage (B6).

Country	Electricity kg CO ₂ eq./kWh	Specification data used	District Heat kg CO ₂ eq./kWh
China	0.97	Supply mix	0.13
Switzerland / FL	0.03	Residual mix	0.06
Slovakia	0.28	Slovakia residual mix	0.16
Czech Republik	0.76	Czech residual mix	
France	0.092	France residual mix	
France, county mix	0.088	France supply mix	
Italy	0.61	Italy residual mix	0.14
Spain	0.42	Spain residual mix	

Transport to installation site (A4)

Transport from Schindler hub to the installation site in Paris. A load factor based onecoinvent 3.9 including empty returns has been considered.

Means of transport	Distance	Load factor
Truck 16 – 32 metric tons, EURO 4, Diesel	1360 km	5.79 t
Truck 7.5 – 16 metric tons, EURO 4, Diesel	23.5 km	3.29 t

Installation (A5))

For the installation phase, energy, ancillary materials, and packaging waste have been considered.

Scenario	Amount
Ancillary materials: PU Foam	0.6 kg with 366g VOC
Water use	0 m ³
Energy consumption	40 kWh
Waste material	416.4 kg

Maintenance (B2)

Proper maintenance and replacement of worn out parts are necessary to support proper operation over the reference service life. For the commuting of the maintenance personnel, an annual average per installation was applied based on the fleet mileage of the region.

Scenario	Amount
Preventive maintenance interval	As per component individual plan
Commuting to installation	202 km / year Passenger car diesel with DPF
Ancillary material	0.25 l/ year Lubricants

Preventive maintenance replacement materials	Weight (kg)	Weight (%)
Ferrous metal	63.98	47.75
Non-ferrous metals	5.82	4.34
Plastics and rubbers	27.86	20.79
Inorganic materials	0.70	0.52
Lubricants	0.01	0.01
Electric and electronic equipment	10.03	7.49
Batteries and accumulators	25.60	19.10
Total	134.00	100%

Energy consumption in operation phase (B6) and energy efficiency classification

Increasing energy efficiency is essential in order to reduce the environmental impact of the elevator and the building. The longest phase in the life cycle is the usage stage, which can extend beyond the 25 years used for EPD calculations, depending on maintenance, replacement of parts and modernization.

Schindler energy efficiency calculation and classification is performed according to ISO 25745-2. The typical usage expectation for a Schindler 6000 is between 200 to 500 trips per day. The classification and estimated annual energy consumption always refer to a specific configuration. Usage, load capacity, energy saving options and site conditions also influence the final rating.

End of life (C2 – C4)

Most materials are suitable for recycling, for example metal and glass, where a recycling rate of 97% is assumed. Plastic and wood are assumed to be disposed of using waste incineration. Energy recovery is assumed standard for municipal waste incineration facilities.

The amount of material delivered to recovery systems is used for the calculations of net benefits in module D. A net flow calculation is used according to EN 15804. Input and outflows of recycled materials are considered.

Usage category	Assumption	Estimated annual energy consumption	Energy efficiency classification
3	300 trips per day	992.2 kWh	Class A

The classification refers to a specific customer configuration as defined for the Life Cycle Assessment, see page 7. Usage pattern, load capacity, customer specific options and site conditions influence the final rating.

Processes	Unit	Amount kg/kg
Collection process	kg collected separately	1
	kg collected with mixed construction waste	0
Recovery system	kg for re-use	0.00
	kg for recycling	0.97
Disposal	kg for energy recovery	0.01
	kg product or material for final deposition	0.02
Distance for end-of-life treatment	km	30





References

References

ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

PCR 2019:14 V 1.3 Construction Products

C-PCR-008 (TO PCR 2019 :14) Lifts (Elevators)

ISO 25745-2:2015 Energy performance of lifts, escalators and moving walks - Part 2: Energy calculation and classification for lifts (elevators)

ecoinvent database v3.9, SimaPro V9

Glossary

LCA – Life Cycle Assessment: Assessment methodology of the environmental impact of all relevant material and energy flows throughout the entire life cycle of a product, according to ISO 14040.

LCI – Life Cycle Inventory: Creation of inventory of input and output flows for a product system. These flows include inputs such as water, energy, and raw materials. Outputs are releases to air, land, and water. Inventories are based on literature analysis or process simulation.

EPD – Environmental Product Declaration: A declaration that provides quantified environmental data using predetermined parameters defined in a Product Category Rule, according to ISO 14025.

PCR – Product Category Rule: A set of specific rules, requirements, and guidelines for developing environmental declarations for one or more product categories.

REACH – Registration, Evaluation, Authorization and Restriction of Chemicals: EU regulation (EC 1907/2006) that addresses the production and use of chemical substances, and their potential impacts on both human health and the environment.

RSL – Reference Service Life: The reference service life considered for the LCA corresponds to the definition of C-PCR-008 for a generic lift.

FU – Functional Unit: For lifts it is defined as the transportation of a load over a distance, expressed as one tonne [t] transported over one kilometer [km], i.e. tonne-kilometer [tkm] over a vertical (or inclined) trajectory.

UC – Usage Category: Defines the intensity of the lift usage by categories, based on average number of trips per day, according to ISO 25745-2.



Sustainability

We Elevate... Our World

Sustainability at Schindler is more than striving to minimize the use of natural resources. We facilitate sustainable, smart urban mobility, while committing to a sustainable supply chain for all our products and driving innovation for green building management.

Sustainability at Schindler also means enabling an inclusive work environment where our workforce, which is as diverse as our customers and passengers, can thrive. It also means creating value in the communities where we operate by helping develop young talent through education and training, by fostering lifelong learning for our technicians, and by designing products and systems that make it easy and safe for people to move about in cities.

If you would like to learn more about Schindler's sustainability initiatives or access the latest Sustainability Report, you can find them here:
<https://www.schindler.com/com/internet/en/about-schindler/sustainability.html>

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