Environmental Product Declaration

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

JCK108 and JCK118 by JC Kontakter AB

Covering 7 different variations of elbow switches, including:

- JCK108 standard size
- JCK118 standard size
- JCK108 600mm size
- JCK118 600mm size
- JCK108 850mm size
- JCK118 850mm size
- JCK108 900mm size
- JCK118 900mm size

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0026106:001
Version date:	2025-10-21
Valid until:	2030-10-21
Multiple product grouping	EPD of multiple products, based on weighted average results
EPD Version	Version 1.0
	An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

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THE INTERNATIONAL EPD® SYSTEM

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General information

Programme information

Programme:	EPD International AB
Address:	EPD International AB Box 210 60 SE-100 31, Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14, Construction Products, version 2.0.1 UN CPC code: 42999 – Metal goods n.e.c.
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Rob Rouwette (chair) and Noa Meron (co-chair). The review panel may be contacted via the Secretariat www.environdec.com/contact
Life Cycle Assessment (LCA)
LCA accountability: Alexander Munge, CHM Analytics AB
Third-party verification
External and independent (third-party) verification of the declaration and data, according to ISO 14025:2006, via EPD verification through individual EPD verification without a pre-verified LCA/EPD tool. Third-party verifier: Katrin Molina-Besch, Miljögiraff AB Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

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

Information on the use of the EPD

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

Results of modules A1-A3 should not be used without considering the results of module C.

This EPD follows additional requirements for construction products considered as Electronic or Electric Equipment.

The use of the EPD is restricted to the products defined in the Product Information chapter of this EPD. The results are based on weighted average results to account for the difference in production volume of the various products. In order to see the impacts from the specific product in this EPD, see chapter of additional environmental information for conversion factors. Contact JC Kontakter AB directly for information if this EPD is valid for a specific purchase.

Contact information

Owner of the EPD

JC Kontakter AB
Adress: Hagelvädersgatan 11, 418 34 Gothenburg

Contact

Peter Stangmo
Mail: peter@jcgt.se

Description of the organisation

JC Kontakter is a family-owned business specialized in design and manufacturing of elbow switches for automatic doors. The company was founded in 1984 and is now run by the second generation within the family. The business idea is built upon their vision of being the market leaders and they are therefore focused on a few products that is marketed and distributed to retailers in Sweden and Europe.

Website: www.jckontakter.se

Name and location of production site

JC Kontakter AB manufacturing site
Hagelvädersgatan 11
418 34, Gothenburg
Sweden

Product information

Product name

JC Kontakter AB designs and manufactures elbow switches for automatic doors in Gothenburg, Sweden. The product portfolio covers a wide variety of different elbow switches, consisting of metal and plastic frames. The products studied are the following elbow switches:

Product	Frame material	Sizes
JCK 108	Aluminium frame	245 mm (standard size), 600mm, 850mm, and 900mm
JCK 118	Aluminium frame	245 mm (standard size), 600mm, 850mm, and 900mm

Product description

JC Kontakter AB is a manufacturer of elbow switches used for buildings to operate doors. There are various customizations that are available to tailor the elbow switches, including engraving details on the elbow switches.

The results are based on a weighted average in accordance to PCR 2019:14 v. 2.0.1.

The UN CPC classification for the product is 42999 – Metal goods n.e.c. This classification is applicable to all variants of the elbow switches.

The studied system is a type b) EPD in PCR 2019:14 v. 2.0.1 (Cradle-to-gate with options module C1-C4, module D and optional modules A4, A5, and B1-B7). Modules B1-B7 are included as mandatory in accordance with PCR2019:14 v.2.0.1 for Electric and Electronic Equipment (EEE). All activities within the modules take place in Sweden, with the exception of raw material extraction and refinement at supplier site, as well as transport from supplier to JC Kontakter, which is global.

The products have the following physical properties:

Table 1: Physical properties of the studied product

Product	JCK108 and JCK118 (standard)	JCK108 and JCK118 (600 mm length)	JCK108 and JCK118 (850 mm length)	JCK108 and JCK118 (900 mm length)
Weight, in g	408	960	1 285	1 345
Nominal rated current	12 V, 6A (Resistive) 12 V, 6A (Inductive, L/R 5 ms) 24V, 6A (Resistive) 24V, 5A (Inductive, L/R ms)			
Lowest rated current	1 mA/4 V DC			

The EPD is declared as an EPD of multiple products based on the weighted average results, covering all products described above, in accordance with chapter 4.10.1 from PCR 2019:14 v. 2.0.1 (The International EPD Programme, 2025). The product is not considered an identical product as the end product is sold to customers as different types of products.

Geographical scope

The input material is purchased from tier-1 suppliers in Sweden, which is where the use phase and end-of-life treatment is assumed to take place as well based on primary customer locations. Transportation and processing from tier-2 suppliers located in other regions of the world (e.g. USA, parts of Asia, and other parts of Europe) have also been accounted for.

Content declaration

Below is an overview of the purchased materials that end up in the final product, presented as amount per declared unit. Each product covered in this EPD is presented below. The values presented are the average amounts, as well as the ranges which are presented in parentheses. The ranges for certain product components are based on the standard size (lowest value) and the 900mm (highest value).

Table 2: Overview of input material, pre- and post-consumer scrap, and biogenic content in material

Product components	Weight, g	Post-consumer, recycled material, weight-% of product	Biogenic material, weight-% of product	Biogenic material, kg C/declared unit
Aluminium	286.0 (284.0-1 103.0)	0%	0%	0
Polyoxymethylene copolymer	20.8	0%	0%	0
Carbon black	0.5	0%	0%	0
Titanium dioxide	1.3	0%	0%	0
Zinc oxide	0.5	0%	0%	0
Other chemicals[1]	2.9	0%	0%	0
Silicon	0.0	0%	0%	0
Copper	1.9 (1.8-3.6)	0%	0%	0
Polyvinyl chloride (PVC)	0.7 (0.7-1.4)	0%	0%	0
Nylon 6-6 (PA66)	1.9 (1.8-7.2)	0%	0%	0
Brass	3.1 (3.0-9.6)	0%	0%	0
Chromated steel	1.9 (1.8-7.2)	0%	0%	0
Steel, low-alloyed	8.4	0%	0%	0
Synthetic rubber	2.2 (2.1-3.5)	0%	0%	0
Polyethylene terephthalate (PET)	0.6	0%	0%	0
Polybutylene terephthalate (PBT)	4.9 (4.8-9.6)	0%	0%	0
Electrogalvanized steel	77.0 (76.0-152.0)	0%	0%	0
Total product weight	410 (408-1 345)			

No Substances of Very High Concern (SVHC) in accordance with the Candidate List of SVHC from the European Chemicals Agency that constitutes more than 0.1% of the weight of the product is included in the products. For packaging material, see the table below:

[1] From endcaps supplier, stated as confidential and therefore unknown what chemicals are used

Table 3: Overview of packaging material used for end products

Packaging materials	Weight, g	Weight-% (versus product)	Biogenic material, kg C/product
Corrugated board (standard size)	38.7	10%	0.02
Corrugated board (600 mm long)	91.9	10%	0.04
Corrugated board (850mm long)	129.7	10%	0.05
Corrugated board (900mm long)	136.7	10%	0.06
EU Pallet	8.3	1-3%	0.03
Total weight of packaging	47.1 (47.0-145.0)	11% (11-13%)	0.05 (0.05-0.09)

LCA information

Declared unit

The declared unit is one unit elbow switch. The conversion factor to mass can be seen in the table above stating the weight per product variant.

Reference service life

RSL is not applicable as the LCA and subsequent EPD is based on a declared unit in accordance with PCR 2019:14 v. 2.0.1. However, as modules B1-B7 are included, an estimated product lifetime is included to account for the amount of replacements required in module B4. The estimated product lifetimes is 15 years, based on a study on the product where the micro-switch needs to be replaced after a set amount of interactions.

Time representativeness

Specific data collected for production taking place during the period 1st January 2024 – 1st December 2024. The generic data used from ecoinvent 3.10 and Industry data 2.0 are all still valid and have less than 6 years difference from the last update of the dataset to the publication of this EPD.

Database(s) and LCA software used

The LCA was modelled in SimaPro 10.2.0.2 using ecoinvent 3.10 (EN15804 system library) as the primary database.

Description of system boundaries

The studied system is a type b) EPD in PCR 2019:14 v. 2.0.1 (Cradle-to-gate with options module C1-C4, module D and optional modules A4, A5, and B1-B7).

A1-A3 Cradle-to-gate

Modules A1-A3 presents the production of the product variants covered by this EPD. All raw materials from suppliers are transported to JC Kontakter ABs manufacturing site in Gothenburg, Sweden. At the manufacturing site, the components are adjusted and assembled to the final product before being sent to end customer for installation.

The transportation from supplier to JC Kontakter ABs manufacturing facility is presented below:

Table 4: Material transport distances

Material	Country of origin	Distance (km)	Type of transport
Tape microswitch	Germany	220	Hybrid diesel/electric truck
Rubber d-profile list	Denmark	503	Diesel truck
Microswitch	France	2 198	Diesel truck (+HVO100)
Endcap screw	Taiwan	22 900	Electric van (0.5) + Shipping (22 900)
Endcap	Sweden	34	Electric van
Connection terminal mounting screw	Germany	1 229	Electric van (0.5) + Diesel truck (1 229)
Connection terminal	Sweden	234	Diesel truck
Aluminium frame	Norway	294	Diesel truck
Microswitch metal console	Sweden	779	Diesel truck
Tape metal console	Germany	1 074	Hybrid diesel/electric truck

In module A3, the electricity consumption, packaging material, consumables, and waste generated from manufacturing is included (including waste processing). The electricity consumption is based on the energy certificate provided by the electricity supplier for the reference time period of this EPD. The electricity consumption was modelled by taking the share of 42.5% nuclear power and 57.5% renewables. The GWP-GHG impact of the modelled electricity mix is 0.0285 kg CO_2-eq/kWh.

A4 Transport to customer

The transportation to customer will vary depending on the location, however, in this EPD the distance to the three largest customers was taken and the distance was averaged. The average distance was estimated to 516 km, and the transportation method applied is a EURO6 truck.

A5 Installation

No activity is modelled here as the installation is done manually by hand. However, the treatment of packaging waste is modelled here in accordance with PCR 2019:14 v.2.0.1, based on the Swedish scenario that 75% of cardboard is recycled and the remaining waste streams after recycling is sent to either landfill (1.4% of remaining material) or incineration (98.6%) based on the PEF R2 recycling rates (European Commission, 2021).

Modules B1, B2, B3, B5, and B7

There is no activity modelled for the use phase (module B1), as the electricity consumption of the product is modelled in module B6. For modules B2 (maintenance), B3 (repair), B5 (refurbishment), and B7 (water use), no activity is modelled as it is not relevant for the products.

B4 Replacement

Over the course of the product lifetime of 15 years, some parts of the product are replaced. The parts replaced are the micro-switch, connection terminal, mounting screws, and tape.

B6 Energy use

This chapter covers the electricity consumption during product usage. When the product is used, i.e. when a person presses the elbow switch, the micro-switch closes the circuit and an electrical signal is transferred through to open the door. The product itself does not use electricity, only opens/closes the circuit through the micro-switch. When the elbow switch is pressed, it is the only time when electricity is transferred through the system for operating, whereas the remainder of the time the product is idle.

To calculate the electricity consumption during use of the product, the maximum power available is based on the specifications 24V and 6A (AC), resulting in 0.14 kW. Assuming the activation duration lasts approximately 2 seconds whenever the elbow switch is triggered, the energy consumption per usage is approximately 0.14 kW * 2/3600 hours = 0.00008 kWh. This value is used to model the electricity consumption per use.

The electricity use during the elbow switch lifetime will largely depend on where it is installed and the behaviour of the people using the switch. In order to create a scenario, the electricity consumption per usage is multiplied by the product lifetime of 15 years, multiplied by 365 days and an estimated average use of 50 per day. This would lead to approximately 0.00008 kWh*15*365*50 = 23 kWh over the product lifetime.

C1 Deconstruction

The product is manually dismantled at the end-of-life and therefore no activity is modelled in this module.

C2 Transport to waste processing

The transportation to waste treatment facility is assumed to be 130km based on the default data for module C2 provided in PCR 2019:14 v. 2.0.1. This value can vary significantly depending on where the customer is located.

C3 Waste processing for reuse, recovery and/or recycling

The waste pre-processing scenario is modelled based on table 4 in PCR 2019:14 v. 2.0.1 which provides default data for modelling modules C1-C4. The loading and unloading at sorting facility, as well as the mechanical sorting was applied to the entire product, corresponding to 1.8 Wh/kg and 2.2 Wh/kg respectively. Additionally, for all metal components, the fragging of steel value was chosen, corresponding to 7.4 Wh/kg, whereas for the other materials, the value for treatment of other materials was chosen, at 0.8 Wh/kg.

After the recycling stream of the materials are separated, the remaining materials are either sent to landfill, or incineration.

C4 Final disposal

Module C4 represents the landfilling and incineration of the remaining materials that was not sent to recycling. The end-of-life treatment for the materials are based on the PEF R2 recycling rates and final disposal for Sweden, as described for module A5 (treatment of product packaging waste). The corresponding rates of end-of-life treatment can be seen in the table below:

Table 5: Overview of end-of-life treatment for material types used as input in the products

Activity	Share of materials	Comment
Recycling	Ferro metals – 81.0%	Based on PEF R2 recycling rate.
	Aluminium – 76.2%	Based on PEF R2 recycling rate.
	Plastics – 53.2%	Based on PEF R2 recycling rate.
Landfill	Ferro metals – 0.3%	Based on landfill rate for Sweden from PEF R2 recycling rate. Landfill rate is 1.4% of material not recycled. Therefore, the values in this table is calculated by taking the amount remaining after recycling and multiplying by 1.4%.
	Aluminium – 0.3%	
	Plastics – 0.6%	
Incineration	Ferro metals – 18.7%	Based on incineration rate for Sweden from PEF R2 recycling rate. Landfill rate is 98.6% of material not recycled. Therefore, the values in this table is calculated by taking the amount remaining after recycling and multiplying by 98.6%.
	Aluminium – 23.5%	
	Plastics – 46.2%	

D Benefits and loads beyond the product system

The scenario for module D is calculating the net benefits and loads of avoiding production of new aluminium based on the recycling rate of the materials described in chapter 4.3.13.

The D module is calculated with a formula originally proposed in EN 15804 and adjusted with a factor for material yield (Y) in PCR:2019:14.

Formula for calculating net benefits and loads for export of secondary materials (recycling of materials):

$$e_1 = \Sigma Y \bullet (M_{MR,out} - M_{MR,in}) \bullet (E_{MR\ after\ EoW\ out} - E_{VM\ Sub\ out} \bullet \frac{Q_{R,out}}{Q_{Sub}}) \qquad \text{(Eq.1)}$$

Formula for calculating net benefits and loads for export of energy as a result of waste incineration:

$$e_2 = -M_{INC,out} \bullet (LHV \bullet X_{INC,heat} \bullet E_{SE,heat} - LHV \bullet X_{INC,elec} \bullet E_{SE,elec} \qquad \text{(Eq.2)}$$

$\mathbf{e_1}$ = Load or benefit from recycling of materials

$\mathbf{e_2}$ = Load or benefit related to the export of enegy as a result of waste incineration for $R_1 > 60\%$

$\mathbf{E_{MR\ after\ EoW\ out}}$ = Environmental impact from the recycling process

$\mathbf{E_{VM\ Sub\ out}}$ = Environmental impact from the replaced primary material

$\mathbf{M_{MR,In}}$ = Recycled material entering the system that was recycled in a previous system

$\mathbf{M_{MR,out}}$ = Material exiting the system that will be recycled at the EoW point

$\mathbf{M_{INC,out}}$ = Material exiting the system that will be incinerated at the EoW point

$\mathbf{X_{INC,heat}}$ = Efficiency of incineration process for heat

$\mathbf{X_{INC,elec}}$ = Efficiency of incineration process for electricity

$\mathbf{E_{SE,heat}}$ = Environmental impact from specific current average substituted energy source: heat

$\mathbf{X_{INC,heat}}$ = Environmental impact from specific current average substituted energy source: electricity

$\boldsymbol{LHV}$ = Lower heating value of material being incinerated

$\mathbf{Y}$ = Material yield from recycling process, calculated as the fraction between the EoW state and the Point of substitution (M_{EoW}/M_{PoS})

$\boldsymbol{Y_{INC}}$ = Material yield sent to incineration and the Point of substitution (M_{EoW}/M_{PoS})

$\mathbf{Q_{R,Out}}$ = Quality of the recycled material

$\mathbf{Q_{Sub}}$ = Quality of the replaced primary material

The difference between the secondary material (SM) is attributed as a bonus or load (All modules), as well as the exported heat and electricity generation from incineration of plastic:

Table 6: Incoming and exiting secondary material

Product	Material	Incoming post-consumer SM, in kg	Exiting SM, in g	Exported heat, in kJ	Exported electricity, in kJ
JCK108 and JCK118 standard size	Aluminium	0	216	0	0
	Steel	11	70	0	0

	Plastic	0	17	165	39
JCK108 and JCK118 600mm size	Aluminium	0	555	0	0
	Steel	24	136	0	0
	Plastic	0	28	265	63
JCK108 and JCK118 850mm size	Aluminium	0	793	0	0
	Steel	0	136	0	0
	Plastic	0	28	265	63
JCK108 and JCK118 900mm size	Aluminium	0	841	0	0
	Steel	0	136	0	0
	Plastic	0	28	265	63

The material yield is based on the recycling rate PEF R2 recycling rates in Sweden for aluminium (76.2%) and steel (85.8%). There is no assumed change in quality for either metal. Also, no change of quality of the replaced primary material is assumed. For plastic, the quality follows the PEF R2 value, corresponding to 0.75.

System diagram

The studied system is a type b) EPD in PCR 2019:14 v. 2.0.1 (Cradle-to-gate with options module C1-C4, module D and optional modules A4, A5, and B1-B7). Module A1 is represented by the extraction and processing of raw materials and components prior to being transported (module A2) to JC Kontakter ABs manufacturing facility in Gothenburg. Module A3 represents the processing of the materials and assembly of the components to the final product before being packaged and sent to customer (A4). Module A5 consists solely of the waste treatment of the product packaging.

Modules B1-B7 represents the use phase of the product. Module C1-C4 includes the dismantling of the product (done manually so there is no activity modelled), transport to waste processing, waste processing and eventually the final disposal of the materials that are not recycled. See the figure below for an overview of the modules.

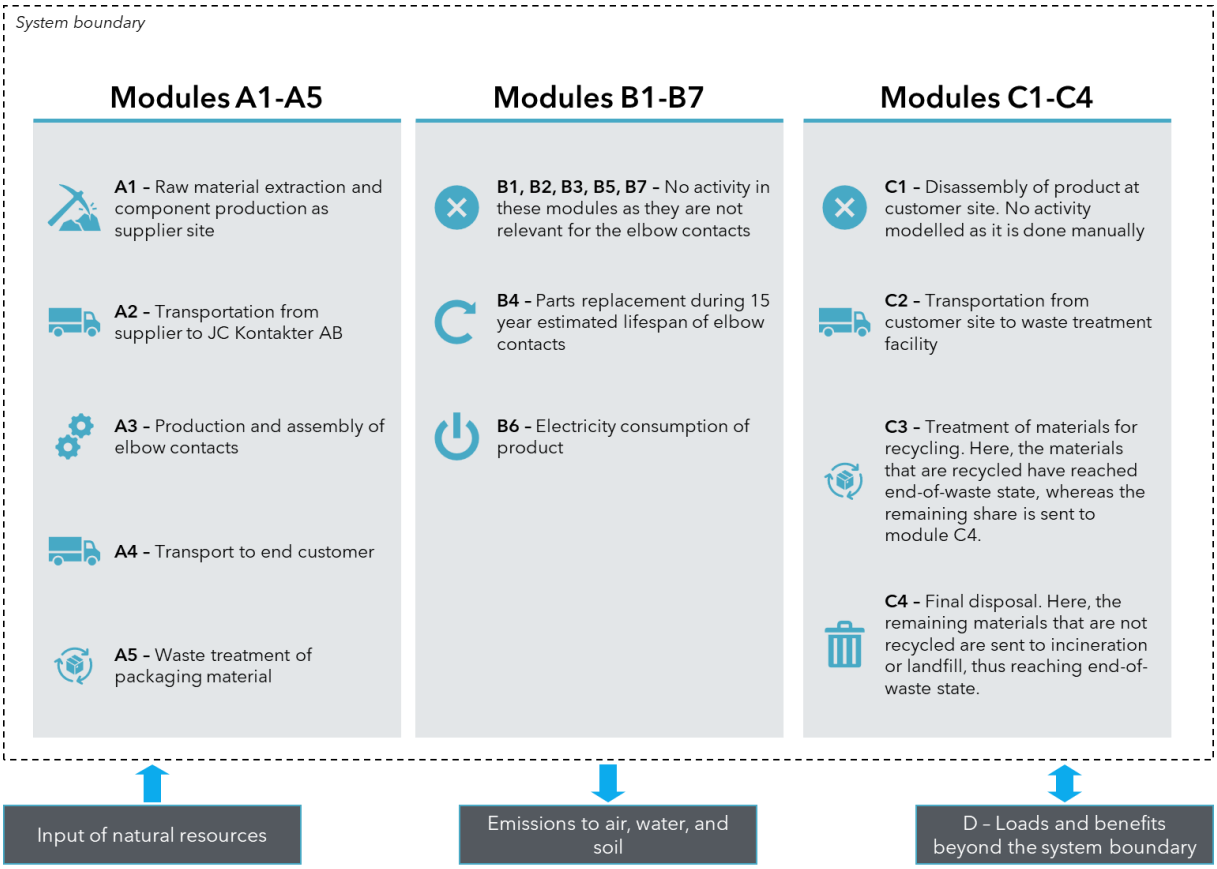

Figure 1: Included modules in the system boundary and exchange to nature

The system boundary to nature is set to include those processes that provide the material and energy inputs into the system and the following manufacturing, and transport processes up to the factory gate as well as the processing of any waste arising from the processes. Note that infrastructure is included as part of the ecoinvent 3.10 datasets, including e.g. infrastructure in electricity generation.

All modules declared are represented by one or several datasets, with the exception of modules B1, B2, B3, B5, B7, and C1, which have no activities included.

The end-of-waste (EoW) criteria are applied as described in Annex B of EN 15804+A2:2019. No burdens are declared for material that has reached the EoW point for flows exiting the system boundaries for JC Kontakter AB. As these flows are generally part of modules A1-A3, they must be dealt with through allocation unless it can be avoided. However, since there is no waste generated in these modules that exit the system boundary, there is no allocation required.

Raw materials and components are sent from various supplier sites to the JC Kontakter's production facility in Gothenburg Sweden. The components are either sawn or cut into the correct specifications depending on the product. This includes, cutting down the profiles to the relevant size, trimming the connection terminal from 12 poles to 2 poles, cutting rubber d-profile list, tape micro-switch, and the distance micro switch. The components are then assembled together to produce the elbow contact.

Once the product is assembled, it is packaged into cardboard boxes and sent to be transported to the customers. The aluminium and cable waste from the manufacturing process is collected and sold to companies specialized in recycling.

The end-of-life phase is modelled using relevant scenarios combined with generic datasets representative of the region, in this case Sweden.

Assumptions

This chapter deals with general assumptions that are used throughout the LCA study.

- Road transports not under JC Kontakter ABs control are assumed to be performed by Euro 6 class vehicles.

Cut-off rules

The cut-off criteria are in accordance with PCR 2019:14 v. 2.0.1 (The International EPD Programme, 2025), therefore a maximum of 1% of the renewable and non-renewable primary energy use and max 1% of the total mass input of a specific unit are excluded. For a full module, the combined cut-off of all unit processes do not exceed 5%. Particular care should be taken to include materials or processes that have the potential to cause significant emissions into air, water, or soil for any of the declared LCIA categories. No cut-offs were implemented in this LCA except for the cut-off defined in the EN15804+A2:2019 EPD used as input, as they are indirectly included by extension in this LCA.

Allocation

The A3 flows for electricity and consumable consumptions were allocated based on the amount of units produced. Since the products have similar economic value, application of allocation based on amount of units produced is permitted in accordance with PCR 2019:14 v. 2.0.1 (The International EPD Programme, 2025).

The allocation is calculated by taking the total value of the electricity, measured by reading values from the devices, divided by the reported total amount of products processed at each device. Through this calculation, the amount of electricity per product is retrieved.

An allocation procedure for the consumables was used as well, where the lubricant for the sawing machine is divided over the total amount of products over one year.

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

Table 7: Declared modules for the life cycle

Product stage				Construction process stage		Use Stage								End of life stage				Resource recovery stage
Raw Material Supply	Transport to manufacturing	Manufacturing	Transport to customer	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction / Demolition	Transport to waste management	Waste processing	Final Disposal	Reuse – Recovery – Recycling - potential		
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**	
Modules Declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Geography	GLO	GLO	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	

X = Module declared
ND = Module not declared

The share of primary data can be seen in the table below. The share of primary data was calculated by taking the GWP-GHG impact of the activities that were based on primary data according to PCR 2019:14 v. 2.0.1 and dividing it by the total A1-A3 GWP-GHG impact. For the aluminium profile, which is based on an EPD from the supplier, the share specific data (as the EPD is published under PCR 2019:14 v. 1.11, therefore the terminology is different from PCR 2019:14 v.2.0.1), amounts to 75%. Therefore, the share of primary data for the aluminium profile was taken by multiplying 75% with the share of GWP-GHG results for A1-A3.

Table 8: Share primary data

Process	Source type	Source	Reference year	Data category	Share of GWP-GHG results for A1-A3	Share of primary data, of GWP-GHG results for A1-A3
Generation of electricity used in manufacturing	Database	Ecoinvent 3.10	2024	Primary data	4.7%	4.7%
Transport of supplier components to manufacturing site	Database	Ecoinvent 3.10	2023	Primary data	0.9%	0.9%
Packaging material and packaging waste treatment	Database	Ecoinvent 3.10	2023	Secondary data	0.5%	0%
Production of aluminium frame for elbow switch (upstream)	EPD	S-P-07377	2022	Primary data	78.0%	58.5%
Production of endcap (upstream)	Database	Ecoinvent 3.10	2023	Secondary data	2.4%	0%
Production of console (upstream)	Database	Ecoinvent 3.10		Secondary data	8.2%	0%
Other processes	Database	Ecoinvent 3.10		Secondary data	5.3%	0%
Total share of primary data, of GWP-GHG results for A1-A3						64.1%

All products are produced at one site and therefore there are no variations based on site location. However, for JCK108 and JCK118, there are variations in the products covered in the product grouping as there are other sizes included. The variations are covered in in the table below.

Table 9: Variation in impact indicators for the size variations in JCK108 and JCK118

Indicator	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - Fossil	264%	320%	347%	N/A	N/A	N/A	257%	N/A	100%	N/A	N/A	320%	333%	166%	365%
GWP-Biogenic	202%	320%	347%	N/A	N/A	N/A	342%	N/A	100%	N/A	N/A	320%	333%	196%	169%
GWP- Land use and LU change	188%	320%	347%	N/A	N/A	N/A	243%	N/A	100%	N/A	N/A	320%	333%	323%	380%
GWP - total	264%	320%	347%	N/A	N/A	N/A	257%	N/A	100%	N/A	N/A	320%	333%	166%	362%
Ozone depletion	136%	320%	347%	N/A	N/A	N/A	161%	N/A	100%	N/A	N/A	320%	333%	302%	337%
Acidification	178%	320%	347%	N/A	N/A	N/A	247%	N/A	100%	N/A	N/A	320%	333%	261%	373%
Eutrophication, freshwater	218%	320%	347%	N/A	N/A	N/A	239%	N/A	100%	N/A	N/A	320%	333%	280%	350%
Eutrophication, marine	226%	320%	347%	N/A	N/A	N/A	257%	N/A	100%	N/A	N/A	320%	333%	249%	370%
Eutrophication, terrestrial	209%	320%	347%	N/A	N/A	N/A	250%	N/A	100%	N/A	N/A	320%	333%	254%	369%
Photochemical ozone formation	144%	320%	347%	N/A	N/A	N/A	249%	N/A	100%	N/A	N/A	320%	333%	264%	370%
Resource use, minerals, and metals	223%	320%	347%	N/A	N/A	N/A	225%	N/A	100%	N/A	N/A	320%	333%	305%	381%
Resource use, fossils	205%	320%	N/A	N/A	N/A	N/A	249%	N/A	100%	N/A	N/A	320%	N/A	N/A	368%
Water use	127%	320%	347%	N/A	N/A	N/A	267%	N/A	100%	N/A	N/A	320%	333%	225%	303%
Particulate matter	147%	320%	347%	N/A	N/A	N/A	255%	N/A	100%	N/A	N/A	320%	333%	322%	373%
Ionising radiation	102%	320%	347%	N/A	N/A	N/A	240%	N/A	100%	N/A	N/A	320%	333%	293%	347%
Ecotoxicity, freshwater	205%	320%	347%	N/A	N/A	N/A	239%	N/A	100%	N/A	N/A	320%	333%	207%	252%
Human toxicity, cancer	180%	320%	347%	N/A	N/A	N/A	281%	N/A	100%	N/A	N/A	320%	333%	295%	226%
Human toxicity, non-cancer	209%	320%	347%	N/A	N/A	N/A	242%	N/A	100%	N/A	N/A	320%	333%	163%	94%
Land use	108%	320%	347%	N/A	N/A	N/A	242%	N/A	100%	N/A	N/A	320%	333%	343%	354%
GWP - GHG	263%	320%	313%	N/A	N/A	N/A	256%	N/A	100%	N/A	N/A	320%	333%	166%	365%

The table above shows that most indicators exceed the 10% difference threshold described in PCR 2019:14 v.2.0.1, however, the variation in the products is only the length of the elbow switch. Therefore, it is considered acceptable to include the products in the product grouping despite the large variation in indicator results.

The data quality is evaluated according to table E.1 in EN 15804+A2 (Data quality level and criteria of the UN Environment Global Guidance in LCA database development), as well as following the data quality assessment requirements in EN15941:2024.

All used background datasets are first evaluated regarding time related, geographical and technological coverage. This is then followed by an aggregated data quality assessment.

The data quality assessment on the datasets below cover data that together contribute 100% of the results for each declared environmental impact indicator.

The overall data quality can be considered as acceptable as the generic datasets chosen was estimated to have a relatively close resemblance to the actual activity within reasonable consideration, when evaluating the technology coverage parameter. The datasets were chosen as each were deemed to be a close approximation to the actual activity based on the geographic and technological representativeness. All datasets are currently valid in ecoinvent 3.10 and was therefore considered acceptable to use. One way to improve on the data quality would be to obtain primary data on the impact from other main contributors such as EPD on the metal console, however, as it was not available, generic datasets were used instead to model the impact of most activities.

The LCA report and this following EPD covers the production of JCK108 and JCK118 in various sizes, based on collected data from JC Kontakter AB between January 1st 2025 and December 1st

2025. The products under study are elbow switches used for opening automatic doors. The results are based on weighted averages.

The components arrive from suppliers to JC Kontakter ABs facility in Gothenburg, Sweden, where the assembly of the elbow switches take place. Once they are produced, they are sent to be installed at customer location. The EPD covers the upstream production and transportation of each component, the manufacturing of the elbow switches at JC Kontakter ABs facility in Gothenburg, Sweden, the packaging of the products, transportation to the customer location, use phase over the estimated product lifetime, and the subsequent end-of-life treatment of the products based on representative scenarios. The transportation to site and end-of-life treatment will vary depending on customer location, however, in this case the distance to the largest customers (in terms of volume for the reported period) was taken and averaged.

Background data was sourced from the ecoinvent 3.10 database. Following the assessment of the background data, the temporal, geographical, and technology coverage was considered to be good or very good, with the exception of some geographical datasets used which took global average data. The evaluation was done in accordance with EN15804:2012+A2:2019, Annex E, E.1.

The datasets used to model the metal working of the chromated steel were considered to have poor geographical representation in accordance with Annex E of EN15804:2012 + A2:2019. This is due to the dataset having a global geographical scope, as opposed to being more region specific. This argument also applies to the non-polymer inputs of the endcap, the aluminium ingot as replacement material for module D, recycling datasets, and the diesel consumption for end-of-life treatment. No data input with the representativeness of fair contributes more than 30% for any of the core indicators.

The data quality information has been provided according to the requirements of EN15941:2024.

Environmental Performance

When analysing the results, the impacts from all modules should be considered. The estimated impact results provide an indication, but should be seen as relative statement, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity non-cancer, and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is due to the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological, and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making processes.

Mandatory LCIA indicator results

This chapter presents all results that are mandatory to present in the LCA end EPD report of an EPD according to EN 15804+A2. All results shown are per declared unit and represent the weighted average. All referenced emission factors are based on the environmental footprint package 3.1 (E.F. 3.1).

The results for A1-A3 should not only be analysed at face value without considering the impacts represented by module C. Module D presents negative values for almost all indicators, indicating a potential benefit of recycling the material used for the frames in the product as opposed to producing new frames, based on the scenario described previously.

Table 10: Mandatory impact category results for weighted average results. Results are presented per declared unit.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - Fossil	kg CO2 eq	3.73E+00	4.07E-02	1.37E-03	0.00E+00	0.00E+00	0.00E+00	1.59E-01	0.00E+00	1.11E+00	0.00E+00	0.00E+00	1.05E-02	1.28E-03	6.40E-02	-2.04E+00
GWP- Biogenic	kg CO2 eq	1.50E-02	2.75E-05	1.45E-02	0.00E+00	0.00E+00	0.00E+00	1.11E-03	0.00E+00	2.14E-02	0.00E+00	0.00E+00	6.98E-06	1.38E-07	1.01E-05	-3.15E-02
GWP- Land use and LU change	kg CO2 eq	1.49E-02	1.36E-05	3.78E-07	0.00E+00	0.00E+00	0.00E+00	1.84E-04	0.00E+00	9.18E-03	0.00E+00	0.00E+00	3.42E-06	1.11E-07	9.83E-07	-4.08E-02
GWP - total	kg CO2 eq	3.76E+00	4.08E-02	1.59E-02	0.00E+00	0.00E+00	0.00E+00	1.60E-01	0.00E+00	1.14E+00	0.00E+00	0.00E+00	1.05E-02	1.28E-03	6.41E-02	-2.11E+00
Ozone depletion	kg CFC11 eq	3.91E-08	8.10E-10	2.45E-11	0.00E+00	0.00E+00	0.00E+00	4.65E-09	0.00E+00	4.38E-08	0.00E+00	0.00E+00	2.08E-10	1.95E-11	6.52E-11	-1.74E-08
Acidification	mol H+ eq	1.17E-02	8.49E-05	6.36E-06	0.00E+00	0.00E+00	0.00E+00	4.46E-03	0.00E+00	7.41E-03	0.00E+00	0.00E+00	3.27E-05	1.15E-05	2.97E-05	-1.42E-02
Eutrophication, freshwater	kg P eq	1.06E-04	3.18E-07	1.15E-08	0.00E+00	0.00E+00	0.00E+00	2.75E-05	0.00E+00	2.94E-05	0.00E+00	0.00E+00	8.04E-08	4.48E-09	3.97E-08	-5.97E-05
Eutrophication, marine	kg N eq	4.52E-03	1.99E-05	2.81E-06	0.00E+00	0.00E+00	0.00E+00	2.98E-04	0.00E+00	2.09E-03	0.00E+00	0.00E+00	1.09E-05	5.33E-06	1.41E-05	-1.83E-03
Eutrophication, terrestrial	mol N eq	6.20E-02	2.20E-04	2.74E-05	0.00E+00	0.00E+00	0.00E+00	3.76E-03	0.00E+00	2.83E-02	0.00E+00	0.00E+00	1.20E-04	5.85E-05	1.47E-04	-2.03E-02
Photochemical ozone formation	kg NMVOC eq	5.73E-03	1.41E-04	9.01E-06	0.00E+00	0.00E+00	0.00E+00	1.13E-03	0.00E+00	6.33E-03	0.00E+00	0.00E+00	5.12E-05	1.74E-05	4.03E-05	-7.48E-03
Resource use, minerals, and metals[2]	kg Sb eq	1.11E-04	1.32E-07	3.68E-09	0.00E+00	0.00E+00	0.00E+00	9.80E-05	0.00E+00	3.88E-06	0.00E+00	0.00E+00	3.34E-08	4.44E-10	7.19E-09	1.93E-05
Resource use, fossils[2]	MJ	8.69E+01	5.73E-01	1.66E-02	0.00E+00	0.00E+00	0.00E+00	2.20E+00	0.00E+00	2.73E+02	0.00E+00	0.00E+00	1.47E-01	1.67E-02	4.28E-02	-1.91E+01
Water use[2]	m3 depriv.	1.16E+00	3.23E-03	2.94E-04	0.00E+00	0.00E+00	0.00E+00	1.16E-01	0.00E+00	3.57E+00	0.00E+00	0.00E+00	8.18E-04	4.90E-05	2.18E-03	-1.17E+00

[2] The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator.

Additional LCIA indicator results

This chapter presents all indicators that are mandatory to present in the LCA report but optional to present in the EPD according to EN 15804+A2.

Table 11: Additional impact category results for weighted average results. Results are presented per declared unit

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	disease inc.	9.93E-08	2.99E-09	1.09E-10	0.00E+00	0.00E+00	0.00E+00	1.15E-08	0.00E+00	8.58E-08	0.00E+00	0.00E+00	8.18E-10	3.27E-10	3.59E-10	-2.19E-07
Ionising radiation[3]	kBq U-235 eq	1.26E+00	2.64E-04	8.61E-06	0.00E+00	0.00E+00	0.00E+00	4.07E-03	0.00E+00	9.77E+00	0.00E+00	0.00E+00	6.70E-05	2.90E-06	2.18E-05	-9.08E-02
Ecotoxicity, freshwater[2]	CTUe	1.10E+01	1.56E-01	1.13E-02	0.00E+00	0.00E+00	0.00E+00	4.66E+00	0.00E+00	4.37E+00	0.00E+00	0.00E+00	3.95E-02	2.36E-03	7.43E-01	-1.41E+01
Human toxicity, cancer[2]	CTUh	8.46E-09	2.89E-10	1.02E-11	0.00E+00	0.00E+00	0.00E+00	1.22E-09	0.00E+00	5.50E-09	0.00E+00	0.00E+00	7.31E-11	4.99E-12	3.90E-11	-4.43E-08
Human toxicity, non-cancer[2]	CTUh	6.21E-08	3.71E-10	3.76E-11	0.00E+00	0.00E+00	0.00E+00	4.48E-08	0.00E+00	2.07E-08	0.00E+00	0.00E+00	9.43E-11	2.26E-12	1.00E-09	-8.73E-10
Land use[2]	Pt	8.83E+01	3.46E-01	9.26E-03	0.00E+00	0.00E+00	0.00E+00	1.53E+00	0.00E+00	9.05E+01	0.00E+00	0.00E+00	8.73E-02	1.17E-03	3.84E-02	-1.73E+00

GWP-GHG according to IPCC 2021

This chapter presents the results according to IPCC 2021 without any biogenic uptake.

Table 12: GWP-GHG results for weighted average results. Results are presented per declared unit.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP - GHG	kg CO2 eq	3.76E+00	4.08E-02	1.52E-03	0.00E+00	0.00E+00	0.00E+00	1.60E-01	0.00E+00	1.12E+00	0.00E+00	0.00E+00	1.05E-02	1.28E-03	6.41E-02	-2.08E+00

Use of resources

This chapter presents the use of material and energy resources by the product system. The results are based on option A in annex 3, guidance to calculating the primary energy use indicators as described in PCR 2019:14 v.2.0.1 (The International EPD Programme, 2025). As described in the PCR, in option A the energy use as raw materials is declared as input to the module where it enters the product system and as an equally large output from the product system where it exits the product system. Outputs in the form of waste is reported as an input in the indicator for energy used as energy carriers. Note that the results presented below is based on background data from the EN 15804 library in SimaPro 10.2.0.2.

[3] This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Table 13: Use of resources for weighted average results. Results are presented per declared unit

Impact category		Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Primary Energy Resources - Renewable	Use as energy carrier	MJ	5.61E+01	9.84E-03	6.54E-01	0.00E+00	0.00E+00	0.00E+00	2.45E-01	0.00E+00	2.70E+01	0.00E+00	0.00E+00	2.49E-03	1.46E-03	1.01E-03	-1.42E+01
	Used as raw materials	MJ	6.54E-01	0.00E+00	-6.54E-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	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total	**MJ**	**5.67E+01**	**9.84E-03**	**3.36E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**2.45E-01**	**0.00E+00**	**2.70E+01**	**0.00E+00**	**0.00E+00**	**2.49E-03**	**1.46E-03**	**1.01E-03**	**-1.42E+01**
Primary Energy Resources - Non-Renewable	Use as energy carrier	MJ	7.70E+01	5.68E-01	3.13E-04	0.00E+00	0.00E+00	0.00E+00	1.45E+00	0.00E+00	2.73E+02	0.00E+00	0.00E+00	1.45E-01	7.56E-04	1.31E+00	-1.90E+01
	Used as raw materials	MJ	1.31E+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	-1.31E+00	0.00E+00
	Total	**MJ**	**7.83E+01**	**5.68E-01**	**3.13E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**1.45E+00**	**0.00E+00**	**2.73E+02**	**0.00E+00**	**0.00E+00**	**1.45E-01**	**7.56E-04**	**8.95E-04**	**-1.90E+01**
Other categories	Secondary Material	kg	6.44E-02	2.66E-04	1.00E-05	0.00E+00	0.00E+00	0.00E+00	4.44E-03	0.00E+00	7.04E-03	0.00E+00	0.00E+00	6.72E-05	6.93E-06	4.41E-05	2.20E-01
	Renewable Secondary Fuels	MJ	9.34E-03	3.36E-06	1.06E-07	0.00E+00	0.00E+00	0.00E+00	2.88E-04	0.00E+00	2.87E-05	0.00E+00	0.00E+00	8.49E-07	1.81E-08	8.42E-07	-7.08E-05
	Non-Renewable Secondary Fuels	MJ	7.26E-27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Net Use of Fresh Water	m³	2.48E-01	7.96E-05	6.99E-06	0.00E+00	0.00E+00	0.00E+00	2.45E-03	0.00E+00	8.80E-02	0.00E+00	0.00E+00	2.02E-05	1.19E-06	5.12E-05	-4.20E-02

Waste production

This chapter presents all the waste that is generated in the product system. Since ecoinvent is used as the main database, the waste management is contained within the system boundaries and no waste generation is reported[4]. The only waste generation is based on the input EPD used for the aluminium frames.

Table 14: Waste generated exiting the system boundary. Results are presented per declared unit.

Waste production	Unit	A1-A3
Hazardous Waste Disposed	Kg	7.31E-02
Non-Hazardous Waste Disposed	Kg	4.53E+00
Radioactive Waste Disposed	Kg	6.02E-03

Output flows

This chapter presents flows that exit the system boundary that are not waste.

Table 15: Other flows exiting the system boundary for weighted average results. Results are presented per declared unit.

Waste production	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	4.06E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.10E-01	0.00E+00	3.10E-01
Materials for energy recovery	kg	2.77E-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	0.00E+00	0.00E+00	0.00E+00	3.26E-04	1.98E-02	1.98E-02
Exported energy, electricity	MJ	3.30E-02	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	3.94E-02	3.94E-02
Exported energy, thermal	MJ	6.16E-02	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	1.66E-01	1.66E-01

Biogenic carbon content

This chapter presents the carbon content in the products and the packaging, for details about the biogenic content in the product see chapter content declaration.

[4] A detailed description of this can be read at the bottom of this page: https://www.environdec.com/resources/indicators

Waste scenarios

In accordance with PCR 2019:14 v. 2.0.1, chapter 4.8.4, end-of-life scenarios that have mixed end-of-life treatment shall also present the environmental impact from scenarios corresponding to 100% of each end-of-life treatment used. Since the main scenario used in modelling covers recycling, and using a scenario of 100% recycling is not realistic, the main scenario results are considered equivalent to the recycling scenario that would otherwise be presented in this chapter.

This means that the results below cover 100% incineration and 100% landfill scenarios respectively.

Indicator	Unit	100% Landfill			100% Incineration		
		C3	C4	D	C3	C4	D
GWP – Fossil	kg CO2 eq	1.28E-03	9.89E-03	0.00E+00	1.28E-03	1.43E-01	-1.15E-03
GWP- Biogenic	kg CO2 eq	1.24E-03	9.53E-03	0.00E+00	1.38E-07	2.45E-05	-2.23E-05
GWP- Land use and LU change	kg CO2 eq	1.37E-07	1.33E-04	0.00E+00	1.11E-07	3.98E-06	-9.53E-06
GWP - total	kg CO2 eq	2.52E-03	1.96E-02	0.00E+00	1.28E-03	1.43E-01	-1.18E-03
Ozone depletion	kg CFC11 eq	1.95E-11	1.70E-10	0.00E+00	1.95E-11	2.43E-10	-4.55E-11
Acidification	mol H+ eq	1.15E-05	3.34E-05	0.00E+00	1.15E-05	9.65E-05	-7.70E-06
Eutrophication, freshwater	kg P eq	4.48E-09	5.96E-08	0.00E+00	4.48E-09	1.42E-07	-3.05E-08
Eutrophication, marine	kg N eq	5.33E-06	1.74E-05	0.00E+00	5.33E-06	4.39E-05	-2.17E-06
Eutrophication, terrestrial	mol N eq	5.85E-05	1.43E-04	0.00E+00	5.85E-05	4.67E-04	-2.94E-05
Photochemical ozone formation	kg NMVOC eq	1.74E-05	5.27E-05	0.00E+00	1.74E-05	1.33E-04	-6.58E-06
Resource use, minerals, and metals	kg Sb eq	4.44E-10	1.66E-08	0.00E+00	4.44E-10	2.75E-08	-4.03E-09
Resource use, fossils	MJ	1.67E-02	1.24E-01	0.00E+00	1.67E-02	1.67E-01	-2.84E-01
Water use	m3 depriv.	4.90E-05	-6.16E-02	0.00E+00	4.90E-05	7.22E-03	-3.71E-03
Particulate matter	disease inc.	3.27E-10	7.24E-10	0.00E+00	3.27E-10	1.46E-09	-8.91E-11
Ionising radiation	kBq U-235 eq	2.90E-06	2.23E-04	0.00E+00	2.90E-06	7.77E-05	-1.01E-02
Ecotoxicity, freshwater	CTUe	2.36E-03	1.91E+01	0.00E+00	2.36E-03	1.71E+00	-4.54E-03
Human toxicity, cancer	CTUh	4.99E-12	3.51E-11	0.00E+00	4.99E-12	1.48E-10	-5.71E-12
Human toxicity, non-cancer	CTUh	2.26E-12	2.61E-10	0.00E+00	2.26E-12	2.20E-09	-2.15E-11
Land use	Pt	1.17E-03	2.25E-01	0.00E+00	1.17E-03	1.62E-01	-9.40E-02
GWP-GHG	kg CO2 eq	1.28E-03	1.00E-02	0.00E+00	1.28E-03	1.43E-01	-1.15E-03

Additional Environmental Information

In order to evaluate the GWP-GHG results of each product covered in this LCA and subsequent EPD, conversion factors for each variant of the product is presented below, in accordance with PCR 2019:14 v. 2.0.1. The conversion factors N/A at some modules represent the omittance of any activity modelling in the module, therefore the factor would be 0 divided by 0 and mathematically incorrect.

Table 16: Conversion factors for each product variation.

Product	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
JCK108, JCK118 standard size	Kg CO2 eq	0.99	0.98	0.98	N/A	N/A	N/A	0.98	N/A	1.00	N/A	N/A	0.98	0.98	0.99	0.98
JCK108, JCK118 600mm size	Kg CO2 eq	1.96	2.30	2.33	N/A	N/A	N/A	2.57	N/A	1.00	N/A	N/A	2.30	2.36	1.63	2.46
JCK108, JCK118 850mm size	Kg CO2 eq	2.54	3.05	3.28	N/A	N/A	N/A	2.57	N/A	1.00	N/A	N/A	3.05	3.17	1.66	3.45
JCK108, JCK118 900mm size	Kg CO2 eq	2.64	3.20	3.47	N/A	N/A	N/A	2.57	N/A	1.00	N/A	N/A	3.20	3.33	1.66	3.65

Version History

Original version of the EPD, 2025-10-21

Abbreviations

Abbreviations	Description
EN	European Standard
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
IPCC	Intergovernmental Panel on Climate Change
CEN	European Committee for Standardization
CPC	Central Product Classification
EoL	End of Life
EoW	End-of-Waste
GWP	Global Warming Potential
GWP-LULUC	Global Warming Potential Land Use and Land Use Change
ODP	Ozone Depletion Potential
AP	Acidification Potential
EP	Eutrophication Potential
POCP	Photochemical Ozone Creation Potential
ADP	Abiotic Depletion Potential
WDP	Water Deprivation Potential
GWP-GHG	Global Warming Potential Greenhouse Gas
PM	Particulate Matter
IRP	Ionizing Radiation Potential
ETP-FW	Ecotoxicity Potential - Freshwater
HTP-c	Human Toxicity Potential - Cancer
HTP-nc	Human Toxicity Potential – Non-Cancer
SPQ	Soil Quality Potential

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	Use of total 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	Use of total non-renewable primary energy resources
SM	Secondary Materials
RSF	Renewable Secondary Fuels
NRSF	Non-renewable Secondary Fuels
FW	Freshwater
HW	Hazardous Waste
NHW	Non-hazardous Waste
RW	Radioactive Waste
CFR	Components for Reuse
MR	Materials for Recycling
MER	Materials for Energy Recovery
EEE	Exported Energy, Electricity
EET	Exported Energy, Thermal
SVHC	Substances of Very High Concern
MJ	Megajoule
Kg	Kilogram
M^3	Cubic meter
NMVOC	Non-Methane Volatile Organic Compounds
Sb eq.	Antimony equivalents
P eq.	Phosphorous Equivalents
N eq.	Nitrogen Equivalents
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO_2-eq	Carbon dioxide equivalents
Kg C	Kilograms of Carbon
ND	Not Declared

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