

# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

**Porkka Modular Cold Room**  
**(Porkka MCR)**  
*Component EPD*

# PORKKA



Program operator, publisher:  
Registration number in RTS EPD:  
Issue date:  
Valid until:

Rakennustietosäätiö RTS sr.  
RTS\_364\_25  
5.3.2025  
5.3.2030



*An EPD should provide current information and may be updated if conditions change. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPD's within the same product category but registered in different EPD programmes may not be comparable. For two EPD's to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCR's or versions of PCR's; 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.*

# GENERAL INFORMATION

## MANUFACTURER INFORMATION



Manufacturer / Owner of the declaration	Porkka Finland Oy Huurretie 13 33470 Ylöjärvi, Finland
Website	www.porkka.com

## PRODUCT IDENTIFICATION

Product name	<p>The studied product components are listed below:</p> <ul style="list-style-type: none"><li>• Floor 80 mm</li><li>• Floor 100 mm</li><li>• Wall or Ceiling 80 mm</li><li>• Wall or Ceiling 100 mm</li><li>• Shelf</li><li>• Door for refrigeration unit</li><li>• Door for freezer</li><li>• Refrigeration unit F1541</li><li>• Refrigeration unit F851</li></ul> <p>Components are applicable for Porkka Finland Oy's products:</p> <ul style="list-style-type: none"><li>• Porkka MCR (different variations available)</li></ul>
Declared unit	<p>1 m<sup>2</sup> for floor, wall and ceiling components 1 unit for shelf, doors and refrigeration unit components and reference products (Porkka MCR 2121 80mm and Porkka MCR 2121 100 mm))</p>
Place(s) of production	Ylöjärvi and Kemijärvi, Finland

## EPD INFORMATION

Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

Program operator, publisher	Rakennustietosäätiö RTS sr. Malminkatu 16 A 00100 Helsinki <a href="http://cer.rts.fi">http://cer.rts.fi</a>
EPD standards	This EPD is in accordance with EN 15804:2012+A2:2019/AC:2021 and ISO 14025 standards.
Geographical scope	Finland
Product category rules	The declaration has been prepared in accordance with EN 15804:2012+A2:2019/AC:2021 and the additional requirements stated in the RTS PCR (Finnish version, 26.8.2020)
LCA software	One Click LCA
EPD author	Elisa Lindqvist, A-Insinöörit Suunnittelu Oy Ilmarisenkatu 18, 20520 Turku, Finland 
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	Anni Viitala, Granlund Oy 
Verification date	3.2.2025
RTS EPD number	RTS_364_25
EPD issued	5.3.2025
EPD valid until	5.3.2030



Jukka Seppänen  
RTS EPD Committee Secretary



Laura Apilo  
Managing Director

# PRODUCT INFORMATION

## PRODUCT DESCRIPTION AND APPLICATION

Porkka Modular Cold Rooms (*Porkka MCR*) are modular step-in cold rooms for the cold storage needs of restaurants, mass caterers and other food industry locations. Porkka Finland Oy's wide range of modular rooms includes plenty of different room sizes and temperature areas. *Porkka MCR* can also be integrated into almost any space whatsoever, and they are always customised individually, to suit the needs of each customer.

The rooms are simple and easy to install: the elements are attached to each other with camlocks, and the built-in refrigeration unit is ready for installation. *Porkka MCRs* are available with an insulation thickness of 80 mm or 100 mm. The insulation thickness has a direct effect on energy consumption, due to which a large room with 100 mm insulation promptly translates into lower energy consumption.

*Porkka MCRs* meet the hygiene requirements set for professional kitchens, and guarantee safety in line with the Food Act in professional use.

*Porkka MCRs* cover different product variations available. This EPD is based on the principle of component EPD's, allowing the creation of EPD results for different variations using the main components included in the products.

The products and components that covered by this EPD are presented below:

### PRODUCT COMPONENTS

**Product components describe the main materials of product's:**

#### **Product components:**

- Floor (80 mm or 100 mm)
- Wall or Ceiling (80 mm or 100 mm)
- Shelf
- Door for refrigeration or freezer unit
- Refrigeration unit F 1541 or F 851

### PRODUCTS

**EPD results can be generated for different *Porkka MCRs* by combining the components that come with the product. There has been chosen two different reference products to this LCA and EPD:**

#### **Products:**

- **Porkka MCR 2121 80 mm, which includes:**
  - 4,41m<sup>2</sup> of floor 80 mm
  - 22,05m<sup>2</sup> of wall and ceiling 80 mm
  - Four shelves
  - One door for refrigerator
  - One refrigeration unit F 1541
- **Porkka MCR 2121 100 mm, which includes:**
  - 4,41 m<sup>2</sup> of floor 100 mm
  - 22,39 m<sup>2</sup> of wall and ceiling 100 mm
  - Four shelves
  - One door for refrigerator
  - One refrigeration unit F 1541

*EPD Creating method; component approach.*

## TECHNICAL SPECIFICATIONS

Further information can be found at [www.porkka.com](http://www.porkka.com)

## PRODUCT STANDARDS

Further information can be found at [www.porkka.com](http://www.porkka.com)

## PHYSICAL PROPERTIES OF THE PRODUCT

Further information can be found at [www.porkka.com](http://www.porkka.com)

## ADDITIONAL TECHNICAL INFORMATION

Further information can be found at [www.porkka.com](http://www.porkka.com)

## PRODUCT RAW MATERIAL MAIN COMPOSITION

Main substances of the product components in declared unit (1m<sup>2</sup> for floor, wall and ceiling components and 1 unit for shelf, door and refrigeration components) are presented in tables below.

### FLOOR 80 MM

Main composition per 1 m<sup>2</sup>

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>1)</sup>	
Plywood	42	100	0	0	FI
Steel	34	0	100	2.6 <sup>1)</sup>	FI
Polyurethane	22	0	100	0	EU
Plastic	2	0	100	0	EU
<i>TOTAL</i>	<i>100</i>	<i>42</i>	<i>58</i>	<i>0.88</i>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	3.15	21.25			FI
Cardboard	0.45	3.04			FI
<i>TOTAL</i>	<i>3.60</i>	<i>24.29</i>			

1) Post-consumer material weight is based on the EPD of the raw material used

## Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	2.6961 kg
Biogenic carbon content in accompanying packaging	1.582 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## FLOOR 100 MM

Main composition per 1 m<sup>2</sup>

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Plywood	41	100	0	0	FI
Steel	31	0	100	2.6	FI
Polyurethane	26	0	100	0	EU
Plastic	2	0	100	0	EU
<b>TOTAL</b>	<b>100</b>	<b>41</b>	<b>59</b>	<b>0.80</b>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	3.48	21.27			FI
Cardboard	0.49	3.00			FI
<b>TOTAL</b>	<b>3.97</b>	<b>24.27</b>			

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	2.8896 kg
Biogenic carbon content in accompanying packaging	1.7764 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## WALL OR CEILING 80 MM

Main composition per 1 m<sup>2</sup>

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Steel	69	0	100	2.6	FI
Polyurethane	29	0	100	0	EU
Plastic	2	0	100	0	EU
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>1.79</b>	

Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)	Material origin
Wood	2.73	21.28	FI
Cardboard	0.39	3.04	FI
<b>TOTAL</b>	<b>3.12</b>	<b>24.32</b>	

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	1.3668 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## WALL OR CEILING 100 MM

Main composition per 1 m<sup>2</sup>

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Steel	64	0	100	2.6 <sup>(1)</sup>	FI
Polyurethane	34	0	100	0	EU
Plastic	2	0	100	0	EU
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>1.66</b>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	2.94	21.29			FI
Cardboard	0.41	2.97			FI
<b>TOTAL</b>	<b>3.35</b>	<b>24.26</b>			

1) Post-consumer material weight is based on the EPD of the raw material used

## Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	1.4676 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## SHELF

Main composition per 1 unit

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Steel	86.30	0	100	0	FI
ABS plastic	13.60	0	100	0	FI
Rubber	0.10	0	100	0	FI
<i>TOTAL</i>	<i>100</i>	<i>0</i>	<i>100</i>	<i>0</i>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	1.12	21.25			FI
Cardboard	0.16	3.04			FI
<i>TOTAL</i>	<i>1.28</i>	<i>24.29</i>			

1) Post-consumer material weight is based on the EPD of the raw material used

## Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0.5676 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.



## DOOR FOR REFRIGERATOR

Main composition per 1 unit

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Steel	86.2	0	100	0	FI
Polyurethane	3.4	0	100	0	EU
Silicone	4.2	0	100	0	EU
PVC	2.5	0	100	0	EU
EPDM rubber	2.4	0	100	0	EU
Plastic	1.0	0	100	0	EU
Cables	0.3	0	100	0	EU
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	5.97	21.28			FI
Cardboard	0.84	3.00			FI
<b>TOTAL</b>	<b>6.81</b>	<b>24.28</b>			

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	2.9924 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## DOOR FOR FREEZER

Main composition per 1 unit

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Steel	85.2	0	100	0	FI
Polyurethane	5.1	0	100	0	EU

Silicone	3.9	0	100	0	EU
PVC	2.3	0	100	0	EU
EPDM rubber	2.3	0	100	0	EU
Plastic	0.9	0	100	0	EU
Cables	0.3	0	100	0	EU
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	
<b>Packaging materials structure / composition</b>	<b>Weight (kg)</b>	<b>Weight-% (vs the product)</b>			<b>Material origin</b>
Wood	6.50	21.26			FI
Cardboard	0.92	3.00			FI
<b>TOTAL</b>	<b>7.42</b>	<b>21.26</b>			

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	3.2612 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## REFRIGERATION UNIT F1541

Main composition per 1 unit

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Metals	89	0	100	0	FI, EU
Polyurethane	7	0	100	0	EU
Plastics	< 2	0	100	0	EU, CN
Cables	< 1	0	100	0	EU, CN
Refrigerant	1	0	100	0	FI
<b>TOTAL</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>0</b>	

Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)	Material origin
Wood	10.00	13.05	FI
Cardboard	3.80	4.96	FI
<i>TOTAL</i>	<i>13.80</i>	<i>18.01</i>	

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	5.878 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

## REFRIGERATION UNIT F851

Main composition per 1 unit

Product structure / composition / raw material	Weight (%)	Usability			Material origin
		Renewable (%)	Non-Renewable (%)	Post-consumer (%) <sup>(1)</sup>	
Metals	88	0	100	0	FI, EU
Polyurethane	9	0	100	0	EU
Plastics	< 2	0	100	0	EU, CN
Cables	< 1	0	100	0	EU, CN
Refrigerant	< 1	0	100	0	FI
<i>TOTAL</i>	<i>100</i>	<i>0</i>	<i>100</i>	<i>0</i>	
Packaging materials structure / composition	Weight (kg)	Weight-% (vs the product)			Material origin
Wood	10.00	11.70			FI
Cardboard	3.057	3.58			FI
<i>TOTAL</i>	<i>13.057</i>	<i>15.28</i>			

1) Post-consumer material weight is based on the EPD of the raw material used

### Biogenic carbon content

Product's biogenic carbon content at the factory gate

Biogenic carbon content <sup>(2)</sup>	Unit (expressed per functional or per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	5.61 kg

2) Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.

### SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	Calendar year 2022
-----------------	--------------------

## DECLARED AND FUNCTIONAL UNIT

Declared unit	1 m <sup>2</sup> per floor, wall and ceiling components 1 unit per shelf, doors and refrigeration units 1 unit per reference products (Porkka Modular Cold rooms)																											
	<p>The studied components are listed below:</p> <table><tr><td>Floor 80 mm:</td><td>14,82</td><td>kg</td></tr><tr><td>Floor 100 mm:</td><td>16,36</td><td>kg</td></tr><tr><td>Wall or Ceiling 80 mm:</td><td>12,83</td><td>kg</td></tr><tr><td>Wall or Ceiling 100 mm:</td><td>13,81</td><td>kg</td></tr><tr><td>Shelf:</td><td>5,28</td><td>kg</td></tr><tr><td>Door for refrigerator:</td><td>36.17</td><td>kg</td></tr><tr><td>Door for freezer:</td><td>38.69</td><td>kg</td></tr><tr><td>Refrigeration unit F 1541:</td><td>146.20</td><td>kg</td></tr><tr><td>Refrigeration unit F 851:</td><td>85.50</td><td>kg</td></tr></table> <p><i>Masses of the floor, wall and ceiling product components are average masses for different component types.</i></p> <p>Components are applicable for Porkka Finland Oy's products:</p> <p>Porkka Modular Cold Room (Porkka MCR) <i>Mass of the modular cold room varies depending on the size and type</i></p>	Floor 80 mm:	14,82	kg	Floor 100 mm:	16,36	kg	Wall or Ceiling 80 mm:	12,83	kg	Wall or Ceiling 100 mm:	13,81	kg	Shelf:	5,28	kg	Door for refrigerator:	36.17	kg	Door for freezer:	38.69	kg	Refrigeration unit F 1541:	146.20	kg	Refrigeration unit F 851:	85.50	kg
Floor 80 mm:	14,82	kg																										
Floor 100 mm:	16,36	kg																										
Wall or Ceiling 80 mm:	12,83	kg																										
Wall or Ceiling 100 mm:	13,81	kg																										
Shelf:	5,28	kg																										
Door for refrigerator:	36.17	kg																										
Door for freezer:	38.69	kg																										
Refrigeration unit F 1541:	146.20	kg																										
Refrigeration unit F 851:	85.50	kg																										
Functional unit	<p>Functional unit is used in case of refrigeration units and reference products (Porkka MCR)</p> <p>Functional unit is 1 unit of to store and protect food and beverages, internal temperature is cooled to the desired temperature during a service life of 10 years (surrounding temperature assumed to be 25 °C)</p>																											
Reference service life (RSL)	<p>10 years (8760 operating hours / year)</p> <p><i>RSL is a theoretical period selected for calculation purposes only and it is not representative for the minimum, average, nor actual service life of the product</i></p>																											
Declaration covers	<p>This declaration covers the life cycle stages from cradle to grave (A, B, C and D)</p>																											

## SUMMARY OF GWP RESULTS IN STAGE A1-A3

Product component / Product	Unit	GWP-total A1-A3	GWP-fossil A1-A3	GWP-biogenic A1-A3	GWP-LULUC A1-A3
Floor 80 mm	kg CO <sub>2</sub> e / m <sup>2</sup>	2.22E+01	3.65E+01	-1.44E+01	3.52E-02
Floor 100 mm	kg CO <sub>2</sub> e / m <sup>2</sup>	2.62E+01	4.17E+01	-1.56E+01	3.94E-02
Wall or Ceiling 80 mm	kg CO <sub>2</sub> e / m <sup>2</sup>	4.19E+01	4.52E+01	-3.30E+00	2.56E-02
Wall or Ceiling 100 mm	kg CO <sub>2</sub> e / m <sup>2</sup>	4.62E+01	4.97E+01	-3.55E+00	2.84E-02
Shelf	kg CO <sub>2</sub> e / unit	2.33E+01	2.46E+01	-1.36E+00	1.67E-02
Door for refrigerator	kg CO <sub>2</sub> e / unit	1.23E+02	1.32E+02	-9.32E+00	1.16E-01
Door for freezer	kg CO <sub>2</sub> e / unit	1.28E+02	1.38E+02	-9.90E+00	1.22E-01
Refrigeration unit F 1541	kg CO <sub>2</sub> e / unit	1.13E+04	1.13E+03	-4.09E+01	1.23E+01
Refrigeration unit F 851	kg CO <sub>2</sub> e / unit	1.09E+04	1.09E+04	-3.99E+01	1.19E+01
Porkka MCR 2121, 80 mm	kg CO <sub>2</sub> e / unit	1.25E+04	1.27E+04	-1.92E+02	1.32E+01
Porkka MCR 2121, 100 mm	kg CO <sub>2</sub> e / unit	1.27E+04	1.28E+04	-2.04E+02	1.33E+01

## SCOPE OF THE LIFE CYCLE ASSESSMENT

The study does not omit any life cycle stages, processes or data needs that are mandatory according to EN 15804 and RTS PCR.

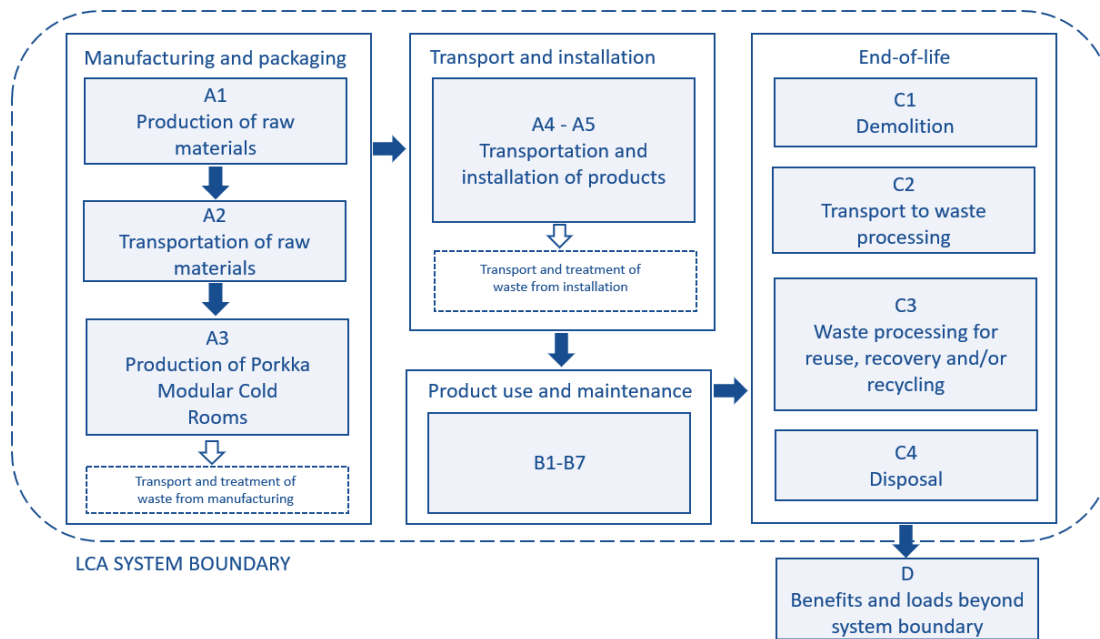
All the modules covered in the EPD are marked with X. Modules not relevant = NR

Manufacturing stage			Distribution / Assembly stage		Use stage								End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Raw material	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling	

	<i>Mandatory modules</i>
	<i>Mandatory as per the RTS PCR 6.2.1 rules and terms</i>
	<i>Optional modules based on scenarios</i>

## SYSTEM BOUNDARY

This EPD covers the full life cycle stages from cradle to grave; A1 (Raw material), A2 (Transport), A3 (Manufacturing), A4 (Transportation of the product to the building site), A5 (Installation). Also, modules B1-B7 are included in the study, though there are impacts only in stage B6 when considering refrigeration units (and reference products). At the end-of-life stage, C1-C4 (Deconstruction-Disposal) is modelled and taken into account. In addition, module D showing benefits and loads beyond the system boundary has been included.



## CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and RTS PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1 % of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5 % of energy usage or mass. Machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

This study follows the cut-off criteria stated in RTS PCR and EN 15804 standard and does not exclude any modules or processes which are stated mandatory in the EN 15804 standard and in the RTS PCR or Eco Platform.

## ALLOCATION

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

The allocations in the Ecoinvent 3.8 datasets used in this study follow the Ecoinvent system model 'Allocation, cut-off, EN15804'

Avoiding allocation could not be avoided for following inputs as the information was only measured on factory process level.

- Electricity consumption: only measured on factory level.
- Manufacturing waste: only measured on factory level.

The inputs were allocated to studied product and product components based on production volume (mass in kilograms).

## AVERAGES AND VARIABILITY

*Porkka MCRs* are manufactured at two production facilities: Ylöjärvi and Kemijärvi, Finland. Floor, wall and ceiling components, as well as shelves and doors are manufactured in Ylöjärvi. Refrigerator units are manufactured in Kemijärvi. The manufacturer provided primary data for their annual production, raw materials used and electricity consumption.

*Porkka MCR* covers different product variations available. This EPD is based on the principle of component EPD, allowing the creation of EPD results for different variations using the main components included in the products. Results for floor, wall and ceiling components are average results declared for 1 m<sup>2</sup>. Results for shelf, doors and refrigeration units, as well as for reference products, are product based.

Results (GWP values for stages A1-A3) for each component type for 1 m<sup>2</sup> are as follow:

Component type	GWP- total A1-A3	GWP- fossil A1-A3	GWP- biogenic A1-A3	GWP- LULUC A1-A3	Variation (%) to average result (GWP-fossil)
<b>Average Floor 80 mm</b>	2.22E+01	3.65E+01	-1.44E+01	3.52E-02	N/A
1512 Floor 80 mm	2.38E+01	3.74E+01	-1.36E+01	3.45E-02	+2,41 %
2121 Floor 80 mm	2.20E+01	3.64E+01	-1.45E+01	3.53E-02	-0.27 %
3630 Floor 80 mm	2.00E+01	3.52E+01	-1.52E+01	3.43E-02	-3.69 %
<b>Total variation</b>					<b>-3.69 - +2.41 %</b>
<b>Average Floor 100 mm</b>	2.62E+01	4.17E+01	-1.56E+01	3.94E-02	N/A
1512 Floor 100 mm	2.78E+01	4.31E+01	-1.54E+01	3.98E-02	+3.25 %
2121 Floor 100 mm	2.58E+01	4.18E+01	-1.61E+01	4.00E-02	0.24%
3630 Floor 100 mm	2.49E+01	4.01E+01	-1.52E+01	3.81E-02	-3.99 %
<b>Total variation</b>					<b>-3.99 - +3.25 %</b>
<b>Average Wall or Ceiling 80 mm</b>	4.19E+01	4.52E+01	-3.30E+00	2.56E-02	N/A
1512 Wall or Ceiling 80 mm	4.26E+01	4.59E+01	-3.35E+00	2.61E-02	+1.53 %
2121 Wall or Ceiling 80 mm	4.20E+01	4.52E+01	-3.30E+00	2.57E-02	0.00 %
3630 Wall or Ceiling 80 mm	4.12E+01	4.45E+01	-3.26E+00	2.51E-02	-1.57 %
<b>Total variation</b>					<b>-1.57 - +1.53 %</b>
<b>Average Wall or Ceiling 100 mm</b>	4.62E+01	4.97E+01	-3.55E+00	2.84E-02	N/A
1512 Wall or Ceiling 100 mm	4.70E+01	5.06E+01	-3.62E+00	2.89E-02	+1.78 %
2121 Wall or Ceiling 100 mm	4.63E+01	4.98E+01	-3.55E+00	2.85E-02	0.20 %
3630 Wall or Ceiling 100 mm	4.54E+01	4.89E+01	-3.50E+00	2.79E-02	-1.64 %
<b>Total variation</b>					<b>-1.64 - +1.78 %</b>



# PRODUCT LIFE-CYCLE

## MANUFACTURING AND PACKAGING (A1-A3)

The product stage is subdivided into three modules A1 (raw material supply), A2 (transportation) and A3 (manufacturing).

### RAW MATERIALS A1

The environmental impacts of raw material supply include emissions generated when raw materials are taken from nature, transported to industrial units for processing and processed, along with waste handling from the various production processes. All major upstream processes are taken into consideration, including infrastructure. Raw material losses are also taken into account. This stage includes all raw materials which end up in the final products.

### TRANSPORTATION A2

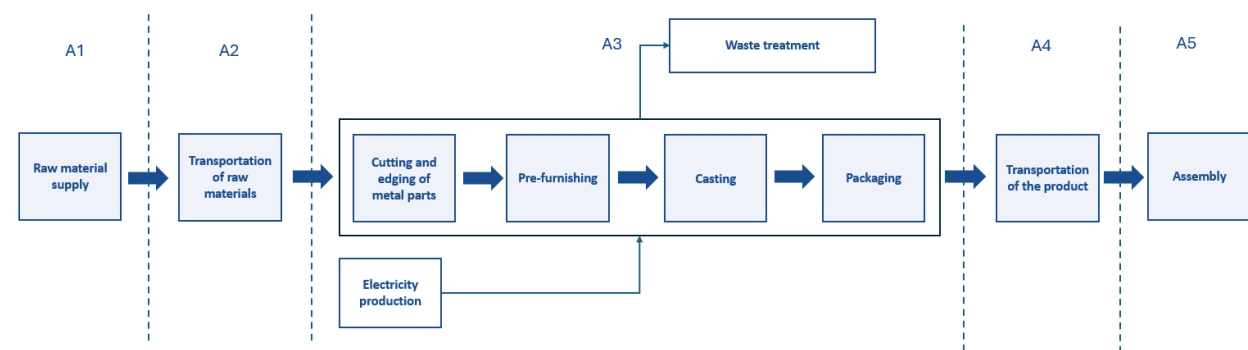
The considered transportation impacts include exhaust emissions resulting from transportation of raw materials from suppliers to manufacturing facilities as well as the environmental impacts of the production of the diesel used. The manufacturing, maintenance and disposal of the vehicles as well as tyre and road wear during transportation have also been included. The transportation distances and methods were provided by the Manufacturer.

### MANUFACTURING A3

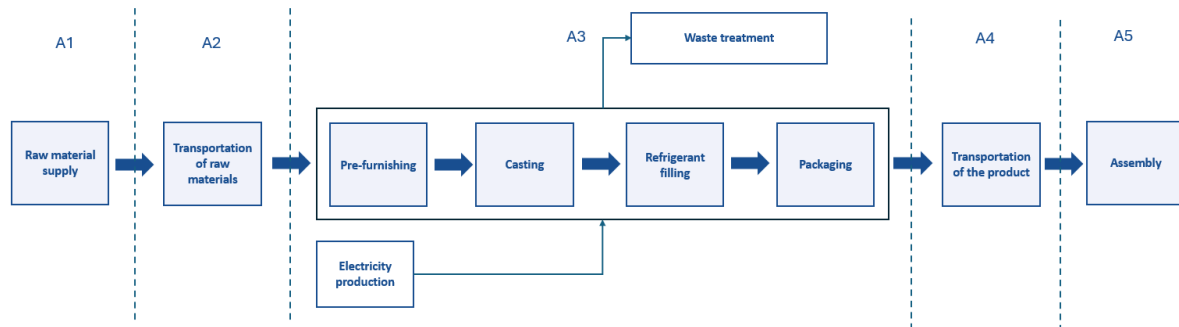
The environmental impacts considered for the production stage cover the manufacturing of materials used in the production but not included in the final products such as packaging materials and other ancillary materials. Also, fuels used by machines, as well as handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study considers also the losses occurring during the manufacturing processes. Also, the transmission losses of energy have been included.

The energy consumption per production of the product was calculated by allocating the product production energy consumption based on the information provided by the manufacturer. In Ylöjärvi factory, where all the product components apart from refrigeration units are manufactured, there is used renewable energy. Manufacturer has guarantee of origin. In Kemijärvi factory, where the refrigeration units are manufactured, there is no renewable electricity used. The primary data used has been obtained from the production plant itself.

## MANUFACTURING PROCESSES



MANUFACTURING PROCESS, YLÖJÄRVI FACTORY



MANUFACTURING PROCESS, KEMIJÄRVI FACTORY

Factory	Share	Energy type	GWP-value (kg CO <sub>2</sub> e / kWh)	Data source quality	Representativeness	Data source	Date
Ylöjärvi	67 %	Electricity, Nuclear	0.0065	Electricity production, nuclear, pressure water reactor	World	Ecoinvent 3.8	2021
	14 %	Electricity, Hydro	0.0042	Electricity production, hydro, run-of-river	Finland	Ecoinvent 3.8	2021
	7 %	Electricity, Wind	0.0297	Electricity production, wind, >3MW turbine, onshore	Finland	Ecoinvent 3.8	2021
	3 %	Electricity, Geothermal	0.0686	Electricity production, deep geothermal	Finland	Ecoinvent 3.8	2021
	9 %	Electricity, Residual mix	0.68	Electricity, Finland, residual mix	Finland	Ecoinvent 3.8	2021
Kemijärvi	100 %	Electricity, Residual mix	0.68	Electricity, Finland, residual mix	Finland	LCA study for country specific residual electricity mixes based on AIB 2022 and calculated by One Click LCA, One Click LCA 2023	2022

## TRANSPORT AND INSTALLATION (A4-A5)

The construction process is divided into two modules: A4, transport to the customer and A5, installation.

### TRANSPORTATION A4

This module includes transport from the production gate to the customer. Transportation impacts that occur from delivery of the product cover direct exhaust emissions of fuel, environmental impacts of fuel production, as well as related infrastructure emissions.

A transport distance of 1000 km is assumed because the actual location varies. Default distance is based on *SFS-EN 50693:2019:en (Product category rules for life cycle assessments of electronic and electrical products and systems)*. It is assumed that there is no loss during transportation as the product consists of ready-made components that are carefully packaged.

## INSTALLATION A5

This module includes product installation losses, emissions of energy use in installation and generation of waste at the installation phase.

In this case, there is no loss in the installation stage. It can be assumed that there are no significant environmental impacts caused by energy or water use in installation phase. Thus, in the LCA, this phase only includes the end-of-life of the packaging materials that are discarded after installation. For waste treatment a transport distance of 78 km is assumed because the actual location of disposal is unknown.

Installation phase is calculated based on a scenario with the parameters described in the following tables. Geographical scope used for scenarios is Finland.

### Scenario parameters for transportation in stages A4, A5

Parameter	Value
Fuel type and consumption of vehicle used for transport	Transport, freight, lorry 16-32 metric ton, EURO5 (0.17 kg CO <sub>2</sub> e / tkm)
Distance (km)	Stage A4: <ul style="list-style-type: none"><li>Assumed distance: 1000 km</li></ul> Stage A5: <ul style="list-style-type: none"><li>Assumed distance: 78 km (SYKE 2022)</li></ul>
Capacity utilization (%)	Stage A4: 100 % Stage A5: 78 % (SYKE 2022)
Density of transported products (kg/m <sup>3</sup> )	Density varies depending on the mass and size of the component or product type

### Scenario parameters for resources used in installation stage A5

Parameter	Unit
Ancillary materials for installation	0 kg
Water use	0 m <sup>3</sup>
Other resource use	0 kg
Quantitative description of energy type (regional mix) and consumption during the installation process	0 kWh (energy use is insignificant)

Parameter	Unit
Waste materials generated by product installation	Presented in the table below

### Scenario parameters for wastes generated in installation stage A5 (per declared unit)

Product component	Wood (kg)	Cardboard (kg)
Floor 80 mm (per 1 m <sup>2</sup> )	3.15	0.45
Floor 100 mm (per 1 m <sup>2</sup> )	3.48	0.49
Wall and ceiling 80 mm (per 1 m <sup>2</sup> )	2.73	0.39
Wall and ceiling 100 mm (per 1 m <sup>2</sup> )	2.94	0.41
Shelf (per 1 unit)	1.12	0.16
Door for refrigerator (per 1 unit)	5.97	0.84
Door for freezer (per 1 unit)	6.50	0.92
Refrigeration unit F1541 (per 1 unit)	10.0	3.80
Refrigeration unit F851 (per 1 unit)	10.0	3.057

## PRODUCT USE AND MAINTENANCE (B1-B7)

The use stage is divided into the following modules:

- B1: Use
- B2: Maintenance
- B3: Repair
- B4: Replacement
- B5: Refurbishment
- B6: Operational energy use
- B7: Operational water use

During product use and its reference service life of 10 years, there is no impacts of refrigerant leakage if the product is used correctly and if the product is working properly. Thus, there is also no refrigerant refill needed.

Use stage is calculated based on a scenario with the parameters described in the following tables. Geographical scope used for scenarios is Finland.

## Parameters for use stage energy consumption (B6)

Parameter	Unit	Quantity per declared unit	
		Refrigeration unit F1541	Refrigeration unit F851
Auxillary materials	kg	0	
Energy quality and quantity	kWh	Electricity	
Power	kWh / 24 h	19.36	12.11
Operation time	h	87 600	

Energy type	GWP-value (kg CO2e / kWh)	Data source quality	Representativeness	Data source	Date
Electricity	0.68	Electricity, Finland, residual mix	Finland	LCA study for country specific residual electricity mixes based on AIB 2022 and calculated by One Click LCA, One Click LCA 2023	2022

## PRODUCT END OF LIFE (C1-C4)

This stage includes the next modules:

- C1: Demolition
- C2: Transport to waste processing
- C3: Waste processing for reuse, recovery and/or recycling
- C4: Disposal

It can be assumed that there are no significant environmental impacts caused by demolition phase (C1). For waste treatment (C2) a transport distance of 78 km is assumed because the actual location of disposal is unknown.

*Porkka MCRs* are mainly composed of ferrous metals and plastics. There is also a refrigeration unit which contains electronic components and refrigerant. A realistic assumption is made that whole of the product, and its parts are collected separately during the dismantling process. Floors, walls, ceilings, shelves and door components end-of-life scenarios are based on [www.co2data.fi](http://www.co2data.fi). Refrigerant units' end-of-life scenarios are based on EN-50693:2019.

Recycling degree of steel in floor, wall, ceiling, shelf and door components is assumed to be 95 %. This is considered to be the proportion of the materials in the product that is recycled (or reused) in some other system. Thus, 5 % of the steel material is assumed to be landfilled.

Recycling degree of steel in refrigerant units assumed to be 80 %. This is considered to be the proportion of the materials in the product that is recycled (or reused) in some other system. Thus, 20 % of the steel material is assumed to be landfilled. Recycling degree of aluminium in refrigerant units assumed to be 70 %. Thus, 30 % of the aluminium is assumed to be landfilled.

100 % of wooden material is assumed to be incinerated. 100 % of polyurethane in floor, wall, ceiling, shelf and door components is assumed to be incinerated. Polyurethane in refrigerant units and other plastic materials are assumed to be 50 % landfilled and 50 % incinerated and used as energy in some other system.

Electronic components used in the product are assumed to be recycled after the end of life. Refrigerants used in the product are treated as hazardous waste.

End of life stage is calculated based on a scenario with the parameters described in the following tables. Geographical scope used for scenarios is Finland.

### Scenario parameters for transportation in stage C2

Parameter	Value
Fuel type and consumption of vehicle used for transport	Transport, freight, lorry 16-32 metric ton, EURO5 (0.17 kg CO <sub>2</sub> e / tkm)
Distance (km)	Assumed distance: 78 km (SYKE 2022)
Capacity utilization (%)	78 % (SYKE)
Density of transported products (kg/m <sup>3</sup> )	Density varies depending on the mass and size of the product type

### Scenario parameters for stages C3 and C4

FLOOR 80 MM		Value (%)	Value (kg)
Collection process	Collected separately	100	14.82
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	32	4.74
	For energy recovery	64.5	9.58
Disposal	Material for final deposition	3.5	0.52

FLOOR 100 MM		Value (%)	Value (kg)
Collection process	Collected separately	100	16.36
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	30	4.92
	For energy recovery	67	10.92

<b>FLOOR 100 MM</b>		Value (%)	Value (kg)
Disposal	Material for final deposition	3	0.53

<b>WALL AND CEILING 80 MM</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	12.83
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	66	8.46
	For energy recovery	29	3.68
Disposal	Material for final deposition	5	0.69

<b>WALL AND CEILING 100 MM</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	13.81
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	61	8.48
	For energy recovery	34	4.64
Disposal	Material for final deposition	5	0.69

<b>SHELF</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	5.28
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	86	4.556
	For energy recovery	0	0
Disposal	Material for final deposition	14	0.724

<b>DOOR FOR REFRIGERATOR</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	36.17
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	90	29.62

<b>DOOR FOR REFRIGERATOR</b>		Value (%)	Value (kg)
	For energy recovery	4	1.23
Disposal	Material for final deposition	6	5.32

<b>DOOR FOR FREEZER</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	38.69
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	81	31.30
	For energy recovery	5	1.99
Disposal	Material for final deposition	14	5.40

<b>REFRIGERATION UNIT F1541</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	146.20
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	48	70.20
	For energy recovery	7	10.20
Disposal	Material for final deposition	45	65.80

<b>REFRIGERATION UNIT F851</b>		Value (%)	Value (kg)
Collection process	Collected separately	100	85.5
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	44	37.60
	For energy recovery	5	4.30
Disposal	Material for final deposition	51	43.60

## **BENEFITS AND LOADS BEYONED SYSTEM BOYNDARY (D)**

Module D covers the net benefits and loads arising from the reuse of products or the recycling or recovery of energy from end-of-waste state materials. Geographical scope used for scenarios for benefits and loads is Finland.



## **REUSE**

Product can't be reused in the end of life; thus no benefits of reuse has been included in the study.

## **RECOVERY**

When a product is incinerated at its end of life and the produced heat is recovered, the benefits can include avoiding the production of energy. In our case it is assumed that part plywood and part of the plastics are recovered as well as part of the packaging materials.

## **RECYCLING**

Benefits from the recycling of metal materials were included to the assessment. In our case following benefits from avoided primary metal production due to the recycling of materials end of life was included. Also, benefits from packaging material recycling is considered.

# ENVIRONMENTAL IMPACT DATA

As specified in EN 15804:2012+A2:2019 and the Product Category Rules, the environmental impacts are declared and reported using the baseline characterization factors from the ILCD. Specific data has been supplied by the manufacturer, and generic data is from Ecoinvent (3.8) databases.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

## INSTRUCTION FOR GENERATING EPD RESULTS OF COMPONENT PRODUCTS

Results for the product components of the floor, wall and ceiling refer to a declared unit which is *1 m<sup>2</sup>*.

Results for the shelf and door refer to a declared unit which is *1 unit*.

Results for the components of refrigeration refers to a declared *1 unit and functional unit which is 1 unit of to store and protect food and beverages, internal temperature is cooled to the desired temperature during a service life of 10 years*.

The product portfolio of Porkka Finland Oy's product *Porkka MCR* covers numerous variations available depending on the target and customer's needs. The EPD has been developed based on the principle of component EPD, allowing for the creation of EPD results for different variations using the main materials or components included in the products.

This EPD creating method provides high coverage and adaptability to different product variants for Porkka Finland Oy's customers.

The studied product components are:

### Results for 1 m<sup>2</sup>:

- Floor 80 mm
- Floor 100 mm
- Wall and Ceiling 80 mm
- Wall and Ceiling 100 mm

### Results for 1 unit:

- Shelf
- Door for refrigerator
- Door for freezer
- Refrigeration unit F1541
- Refrigeration unit F851

## FLOOR 80 MM

Results refer to the average impacts of **1 m<sup>2</sup>** of floor with thickness of 80 mm.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	2,22E+01	3,06E+00	3,93E+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	2,47E-01	1,98E+01	4,75E-01	-1,89E+01
GWP – fossil	kg CO <sub>2</sub> e	3,65E+01	3,06E+00	1,19E-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	2,47E-01	9,23E+00	4,75E-01	-2,08E+01
GWP – biogenic	kg CO <sub>2</sub> e	-1,44E+01	0,00E+00	3,81E+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	1,06E+01	0,00E+00	1,96E+00
GWP – LULUC	kg CO <sub>2</sub> e	3,52E-02	1,20E-03	4,62E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,68E-05	2,23E-04	4,60E-06	-2,82E-02
Ozone depletion pot.	kg CFC-11e	2,81E-06	7,09E-07	1,75E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,70E-08	5,37E-08	1,78E-09	-9,23E-07
Acidification potential	mol H <sup>+</sup> e	1,60E-01	1,24E-02	7,98E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E-03	9,31E-03	1,01E-04	-1,27E-01
EP-freshwater	kg Pe	2,11E-03	2,15E-05	1,40E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E-06	9,93E-06	9,64E-08	-5,89E-04
EP-marine	kg Ne	4,66E-02	3,71E-03	3,27E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,99E-04	5,00E-03	4,57E-05	-1,82E-02
EP-terrestrial	mol Ne	3,64E-01	4,09E-02	3,49E-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	3,29E-03	4,77E-02	4,71E-04	-2,10E-01
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	1,20E-01	1,25E-02	9,12E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,01E-03	1,15E-02	1,41E-04	-7,56E-02
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,16E-03	1,08E-05	4,99E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,73E-07	4,94E-06	2,96E-08	-1,37E-04
ADP-fossil resources	MJ	7,01E+02	4,54E+01	1,37E+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	3,66E+00	6,55E+00	1,37E-01	-2,26E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	2,02E+01	2,10E-01	2,17E-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	1,69E-02	7,75E-01	1,32E-02	-4,42E+00

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	1,92E+02	6,52E-01	3,22E-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	5,25E-02	2,45E-01	2,17E-03	-5,29E+01
Renew. PER as material	MJ	2,74E+02	0,00E+00	-3,31E+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	-2,41E+02	0,00E+00	-1,71E+01
Total use of renew. PER	MJ	4,66E+02	6,52E-01	-3,31E+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	5,25E-02	-2,40E+02	2,17E-03	-7,00E+01
Non-re. PER as energy	MJ	6,01E+02	4,54E+01	1,37E+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	3,66E+00	6,55E+00	1,37E-01	-2,26E+02
Non-re. PER as material	MJ	1,06E+02	0,00E+00	-2,14E+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	-1,03E+02	0,00E+00	-4,45E-01
Total use of non-re. PER	MJ	7,06E+02	4,54E+01	-7,69E-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	3,66E+00	-9,68E+01	1,37E-01	-2,27E+02
Secondary materials	kg	3,67E-01	1,52E-02	1,52E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,23E-03	5,09E-03	9,20E-05	2,93E+00
Renew. secondary fuels	MJ	1,05E+00	1,68E-04	6,59E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,35E-05	1,88E-04	8,96E-07	-2,08E-03
Non-ren. secondary fuels	MJ	1,76E-06	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
Use of net fresh water	m <sup>3</sup>	4,98E-01	5,72E-03	-4,90E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,60E-04	1,63E-02	1,05E-04	-1,90E-01

7) PER = Primary energy resources

## END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,83E+00	5,10E-02	2,10E-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	4,11E-03	1,02E-02	3,24E-03	-4,87E+00
Non-hazardous waste	kg	2,33E+01	9,05E-01	3,19E+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	7,29E-02	9,91E+00	4,77E-01	-5,16E+01
Radioactive waste	kg	1,35E-02	3,13E-04	6,45E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,52E-05	4,58E-06	4,63E-07	-8,82E-04

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	7,05E-07	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
Materials for recycling	kg	3,86E-01	0,00E+00	4,40E-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	4,73E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	2,51E+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
Exported energy	MJ	3,65E+01	0,00E+00	3,22E+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	1,38E+02	0,00E+00	0,00E+00

## FLOOR 100 MM

Results refer to average impacts of **1 m<sup>2</sup>** of floor with thickness of 100 mm.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	2,62E+01	3,38E+00	4,37E+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	2,35E-08	5,27E-08	2,05E-09	-1,57E-06
GWP – fossil	kg CO <sub>2</sub> e	4,17E+01	3,38E+00	1,32E-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	2,12E-02	2,41E-02	5,57E-04	-3,73E+00
GWP – biogenic	kg CO <sub>2</sub> e	-1,56E+01	0,00E+00	4,23E+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	3,35E+00	4,71E+01	4,68E-01	-6,51E+02
GWP – LULUC	kg CO <sub>2</sub> e	3,94E-02	1,33E-03	5,11E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,04E-10	1,60E-09	7,37E-11	-2,58E-08
Ozone depletion pot.	kg CFC <sub>11</sub> e	3,45E-06	7,82E-07	1,93E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,40E-09	5,75E-08	9,17E-10	1,12E-06
Acidification potential	mol H <sup>+</sup> e	1,88E-01	1,37E-02	8,82E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,83E+00	5,57E+00	1,85E-01	-2,79E+02
EP-freshwater	kg Pe	2,47E-03	2,37E-05	1,55E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-08	5,27E-08	2,05E-09	-1,57E-06
EP-marine	kg Ne	5,52E-02	4,10E-03	3,62E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,12E-02	2,41E-02	5,57E-04	-3,73E+00
EP-terrestrial	mol Ne	4,19E-01	4,52E-02	3,86E-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	3,35E+00	4,71E+01	4,68E-01	-6,51E+02
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	1,39E-01	1,38E-02	1,01E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,04E-10	1,60E-09	7,37E-11	-2,58E-08
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,26E-03	1,20E-05	5,53E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,40E-09	5,75E-08	9,17E-10	1,12E-06
ADP-fossil resources	MJ	8,13E+02	5,02E+01	1,52E+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	2,83E+00	5,57E+00	1,85E-01	-2,79E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	2,49E+01	2,32E-01	2,40E-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	2,35E-08	5,27E-08	2,05E-09	-1,57E-06

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	2,09E+02	7,20E-01	3,57E-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	5,80E-02	2,78E-01	2,18E-03	-6,01E+01
Renew. PER as material	MJ	2,95E+02	0,00E+00	-3,68E+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	-2,58E+02	0,00E+00	-1,90E+01
Total use of renew. PER	MJ	5,04E+02	7,20E-01	-3,68E+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	5,80E-02	-2,58E+02	2,18E-03	-7,91E+01
Non-re. PER as energy	MJ	6,90E+02	5,02E+01	1,52E+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	4,04E+00	7,98E+00	1,39E-01	-2,55E+02
Non-re. PER as material	MJ	1,29E+02	0,00E+00	-2,38E+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	-1,23E+02	-3,54E+00	-4,95E-01
Total use of non-re. PER	MJ	8,19E+02	5,02E+01	-8,62E-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	4,04E+00	-1,15E+02	-3,40E+00	-2,55E+02
Secondary materials	kg	3,98E-01	1,68E-02	1,68E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,35E-03	5,75E-03	9,23E-05	3,02E+00
Renew. secondary fuels	MJ	1,16E+00	1,85E-04	7,29E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,49E-05	2,12E-04	9,04E-07	-2,23E-03
Non-ren. secondary fuels	MJ	1,88E-06	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
Use of net fresh water	m <sup>3</sup>	6,12E-01	6,31E-03	-5,41E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,09E-04	2,09E-02	1,06E-04	-2,14E-01

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,09E+00	5,63E-02	2,34E-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	4,54E-03	1,07E-02	3,24E-03	-5,18E+00
Non-hazardous waste	kg	2,82E+01	9,99E-01	3,53E+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	8,05E-02	1,13E+01	4,87E-01	-5,84E+01
Radioactive waste	kg	1,44E-02	3,45E-04	7,14E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,78E-05	4,77E-06	4,63E-07	-1,02E-03

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	7,51E-07	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
Materials for recycling	kg	4,24E-01	0,00E+00	4,90E-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	4,92E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	2,63E+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
Exported energy	MJ	3,84E+01	0,00E+00	3,55E+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	1,63E+02	0,00E+00	0,00E+00

## WALL OR CEILING 80 MM

Results refer to average impacts of **1 m<sup>2</sup>** of wall or ceiling with thickness of 80 mm.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	4,19E+01	2,65E+00	3,40E+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	2,14E-01	1,02E+01	4,43E-01	-2,14E+01
GWP – fossil	kg CO <sub>2</sub> e	4,52E+01	2,65E+00	1,03E-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	2,13E-01	1,02E+01	4,43E-01	-2,31E+01
GWP – biogenic	kg CO <sub>2</sub> e	-3,30E+00	0,00E+00	3,30E+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	1,75E+00
GWP – LULUC	kg CO <sub>2</sub> e	2,56E-02	1,04E-03	4,00E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,38E-05	2,72E-04	5,36E-06	-2,22E-02
Ozone depletion pot.	kg CFC <sub>11</sub> e	2,82E-06	6,13E-07	1,51E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,94E-08	5,55E-08	2,11E-09	-8,65E-07
Acidification potential	mol H <sup>+</sup> e	1,87E-01	1,08E-02	6,91E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,66E-04	9,54E-03	1,05E-04	-1,20E-01
EP-freshwater	kg Pe	1,34E-03	1,86E-05	1,21E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,50E-06	1,24E-05	1,02E-07	-4,64E-04
EP-marine	kg Ne	5,15E-02	3,21E-03	2,84E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,59E-04	5,14E-03	4,62E-05	-1,92E-02
EP-terrestrial	mol Ne	4,03E-01	3,54E-02	3,02E-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	2,85E-03	4,81E-02	4,79E-04	-2,21E-01
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	1,31E-01	1,08E-02	7,90E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,73E-04	1,16E-02	1,43E-04	-9,25E-02
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,86E-03	9,39E-06	4,32E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,56E-07	7,43E-06	3,01E-08	-2,29E-04
ADP-fossil resources	MJ	7,73E+02	3,93E+01	1,19E+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	3,17E+00	6,90E+00	1,59E-01	-2,26E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	2,20E+01	1,82E-01	1,88E-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	1,46E-02	4,14E-01	1,24E-02	-5,14E+00

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	7,04E+01	5,64E-01	2,79E-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	4,54E-02	3,36E-01	2,29E-03	-4,52E+01
Renew. PER as material	MJ	2,87E+01	0,00E+00	-2,87E+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	-1,51E+01
Total use of renew. PER	MJ	9,91E+01	5,64E-01	-2,87E+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	4,54E-02	3,36E-01	2,29E-03	-6,03E+01
Non-re. PER as energy	MJ	6,74E+02	3,93E+01	1,19E+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	3,17E+00	6,89E+00	1,59E-01	-2,26E+02
Non-re. PER as material	MJ	9,88E+01	0,00E+00	-1,86E+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	-9,36E+01	-3,28E+00	-3,95E-01
Total use of non-re. PER	MJ	7,73E+02	3,93E+01	-6,66E-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	3,17E+00	-8,67E+01	-3,12E+00	-2,26E+02
Secondary materials	kg	5,21E-01	1,32E-02	1,31E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-03	4,42E-03	9,21E-05	5,54E+00
Renew. secondary fuels	MJ	9,07E-01	1,45E-04	5,71E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,17E-05	2,82E-04	1,01E-06	-2,88E-03
Non-ren. secondary fuels	MJ	2,93E-08	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
Use of net fresh water	m <sup>3</sup>	4,99E-01	4,95E-03	-4,25E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,99E-04	2,01E-02	1,32E-04	-1,89E-01

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,77E+00	4,41E-02	1,82E-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	3,56E-03	1,83E-02	3,01E-03	-7,55E+00
Non-hazardous waste	kg	2,55E+01	7,84E-01	2,77E+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	6,31E-02	4,27E+00	6,61E-01	-4,86E+01
Radioactive waste	kg	7,45E-03	2,71E-04	5,59E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,18E-05	8,20E-06	4,30E-07	-5,95E-04

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,70E-01	0,00E+00	3,80E-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	8,46E+00	0,00E+00	0,00E+00
Materials for energy rec	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
Exported energy	MJ	0,00E+00	0,00E+00	2,79E+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	8,24E+01	0,00E+00	0,00E+00



## WALL OR CEILING 100 MM

Results refer to average impacts of **1 m<sup>2</sup>** of wall or ceiling with thickness of 100 mm.

### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	4,62E+01	2,85E+00	3,67E+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	2,30E-01	1,28E+01	4,26E-01	-2,30E+01
GWP – fossil	kg CO <sub>2</sub> e	4,97E+01	2,85E+00	1,11E-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	2,30E-01	1,28E+01	4,26E-01	-2,48E+01
GWP – biogenic	kg CO <sub>2</sub> e	-3,55E+00	0,00E+00	3,55E+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	1,84E+00
GWP – LULUC	kg CO <sub>2</sub> e	2,84E-02	1,12E-03	4,31E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,01E-05	3,02E-04	5,23E-06	-2,51E-02
Ozone depletion pot.	kg CFC <sub>11</sub> e	3,48E-06	6,60E-07	1,63E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,31E-08	6,78E-08	2,07E-09	-9,57E-07
Acidification potential	mol H <sup>+</sup> e	2,13E-01	1,16E-02	7,44E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,32E-04	1,18E-02	1,01E-04	-1,32E-01
EP-freshwater	kg Pe	1,63E-03	2,00E-05	1,31E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,61E-06	1,37E-05	9,86E-08	-5,32E-04
EP-marine	kg Ne	5,97E-02	3,46E-03	3,06E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,78E-04	6,40E-03	4,47E-05	-2,08E-02
EP-terrestrial	mol Ne	4,51E-01	3,81E-02	3,26E-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	3,07E-03	6,01E-02	4,64E-04	-2,40E-01
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	1,49E-01	1,17E-02	8,51E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,39E-04	1,44E-02	1,38E-04	-9,76E-02
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,93E-03	1,01E-05	4,66E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,13E-07	7,84E-06	2,91E-08	-2,31E-04
ADP-fossil resources	MJ	8,76E+02	4,23E+01	1,28E+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	3,41E+00	8,33E+00	1,55E-01	-2,47E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	2,68E+01	1,96E-01	2,02E-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	1,58E-02	5,10E-01	1,19E-02	-5,43E+00

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

### USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	7,74E+01	6,07E-01	3,00E-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	4,89E-02	3,65E-01	2,22E-03	-5,02E+01
Renew. PER as material	MJ	3,09E+01	0,00E+00	-3,09E+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	-1,59E+01
Total use of renew. PER	MJ	1,08E+02	6,07E-01	-3,09E+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	4,89E-02	3,65E-01	2,22E-03	-6,61E+01
Non-re. PER as energy	MJ	7,54E+02	4,23E+01	1,28E+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	3,41E+00	8,33E+00	1,55E-01	-2,47E+02
Non-re. PER as material	MJ	1,22E+02	0,00E+00	-2,00E+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	-1,17E+02	-3,15E+00	-4,13E-01
Total use of non-re. PER	MJ	8,76E+02	4,23E+01	-7,17E-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	3,41E+00	-1,08E+02	-2,99E+00	-2,47E+02
Secondary materials	kg	5,22E-01	1,42E-02	1,41E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,14E-03	4,92E-03	8,90E-05	5,54E+00
Renew. secondary fuels	MJ	9,76E-01	1,56E-04	6,15E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,26E-05	3,02E-04	9,80E-07	-2,94E-03
Non-ren. secondary fuels	MJ	2,95E-08	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
Use of net fresh water	m <sup>3</sup>	6,12E-01	5,33E-03	-4,58E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,29E-04	2,50E-02	1,29E-04	-2,06E-01

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,85E+00	4,75E-02	1,96E-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	3,82E-03	1,84E-02	2,89E-03	-7,70E+00
Non-hazardous waste	kg	3,01E+01	8,44E-01	2,98E+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	6,79E-02	5,23E+00	6,53E-01	-5,38E+01
Radioactive waste	kg	7,73E-03	2,92E-04	6,02E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-05	8,22E-06	4,13E-07	-7,12E-04

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,90E-01	0,00E+00	4,10E-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	8,48E+00	0,00E+00	0,00E+00
Materials for energy rec	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
Exported energy	MJ	0,00E+00	0,00E+00	3,00E+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	1,04E+02	0,00E+00	0,00E+00

# SHELF

Results refer to **1 unit** of shelf.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	2,33E+01	1,09E+00	1,40E+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	8,78E-02	9,68E-02	9,78E-02	-7,94E+00
GWP – fossil	kg CO <sub>2</sub> e	2,46E+01	1,09E+00	4,26E-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	8,78E-02	9,68E-02	9,78E-02	-8,66E+00
GWP – biogenic	kg CO <sub>2</sub> e	-1,36E+00	0,00E+00	1,36E+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	7,23E-01
GWP – LULUC	kg CO <sub>2</sub> e	1,67E-02	4,28E-04	1,65E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,45E-05	8,03E-05	9,82E-06	-5,81E-03
Ozone depletion pot.	kg CFC <sub>11</sub> e	9,97E-07	2,52E-07	6,23E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,03E-08	4,43E-09	2,83E-09	-2,68E-07
Acidification potential	mol H <sup>+</sup> e	8,71E-02	4,43E-03	2,84E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,56E-04	4,46E-04	8,21E-05	-3,68E-02
EP-freshwater	kg Pe	5,89E-04	7,66E-06	5,01E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,16E-07	3,80E-06	1,56E-07	-1,10E-04
EP-marine	kg Ne	1,81E-02	1,32E-03	1,17E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,06E-04	1,71E-04	1,14E-04	-6,91E-03
EP-terrestrial	mol Ne	1,88E-01	1,46E-02	1,24E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,17E-03	1,13E-03	3,00E-04	-7,92E-02
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	5,63E-02	4,46E-03	3,25E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,59E-04	3,19E-04	1,04E-04	-3,79E-02
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,81E-04	3,86E-06	1,79E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,11E-07	3,02E-06	3,12E-08	-1,14E-04
ADP-fossil resources	MJ	3,52E+02	1,62E+01	4,90E-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	1,30E+00	7,18E-01	2,15E-01	-7,56E+01
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	7,87E+00	7,49E-02	7,71E-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	6,02E-03	2,34E-02	1,60E-03	-2,09E+00

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	4,21E+01	2,32E-01	1,15E-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	1,87E-02	1,17E-01	4,13E-03	-1,35E+01
Renew. PER as material	MJ	1,18E+01	0,00E+00	-1,18E+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	-6,21E+00
Total use of renew. PER	MJ	5,39E+01	2,32E-01	-1,18E+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	1,87E-02	1,17E-01	4,13E-03	-1,97E+01
Non-re. PER as energy	MJ	3,06E+02	1,62E+01	4,90E-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	1,30E+00	7,18E-01	2,15E-01	-7,55E+01
Non-re. PER as material	MJ	2,64E+01	0,00E+00	-7,64E-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	-2,56E+01	-1,63E-01
Total use of non-re. PER	MJ	3,32E+02	1,62E+01	-2,74E-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	1,30E+00	7,18E-01	-2,54E+01	-7,57E+01
Secondary materials	kg	7,54E-01	5,43E-03	5,41E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,37E-04	1,29E-03	7,21E-05	2,87E+00
Renew. secondary fuels	MJ	3,86E-01	5,98E-05	2,35E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E-06	1,05E-04	2,67E-06	-1,38E-03
Non-ren. secondary fuels	MJ	3,33E-21	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
Use of net fresh water	m <sup>3</sup>	2,46E-01	2,04E-03	-1,74E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,64E-04	6,05E-04	2,44E-04	-6,39E-02

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	5,93E+00	1,82E-02	7,58E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E-03	9,38E-03	0,00E+00	-3,61E+00
Non-hazardous waste	kg	2,40E+01	3,23E-01	1,13E+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	2,60E-02	3,00E-01	9,51E-01	-1,50E+01
Radioactive waste	kg	2,58E-03	1,12E-04	2,30E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,97E-06	4,20E-06	0,00E+00	-8,21E-05

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,60E-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	4,33E+00	0,00E+00	0,00E+00	4,33E+00
Materials for energy rec	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
Exported energy	MJ	0,00E+00	0,00E+00	1,15E+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

# DOOR FOR REFRIGERATOR

Results refer to **1 unit** of door 1.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,23E+02	7,47E+00	9,62E+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	6,01E-01	4,02E+00	9,14E-01	-5,63E+01
GWP – fossil	kg CO <sub>2</sub> e	1,32E+02	7,47E+00	2,92E-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	6,01E-01	4,02E+00	9,14E-01	-6,11E+01
GWP – biogenic	kg CO <sub>2</sub> e	-9,32E+00	0,00E+00	9,32E+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	4,91E+00
GWP – LULUC	kg CO <sub>2</sub> e	1,16E-01	2,93E-03	1,13E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,36E-04	5,88E-04	4,87E-05	-4,26E-02
Ozone depletion pot.	kg CFC <sub>11</sub> e	4,94E-06	1,73E-06	4,27E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,39E-07	4,60E-08	1,60E-08	-1,94E-06
Acidification potential	mol H <sup>+</sup> e	1,00E+00	3,03E-02	1,95E-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	2,44E-03	5,94E-03	5,29E-04	-2,66E-01
EP-freshwater	kg Pe	5,10E-03	5,24E-05	3,43E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,22E-06	2,77E-05	7,71E-07	-8,25E-04
EP-marine	kg Ne	1,33E-01	9,06E-03	8,00E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,29E-04	2,77E-03	2,02E-04	-4,90E-02
EP-terrestrial	mol Ne	1,64E+00	9,99E-02	8,53E-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	8,03E-03	2,31E-02	2,16E-03	-5,62E-01
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	4,35E-01	3,06E-02	2,23E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,46E-03	5,83E-03	6,33E-04	-2,65E-01
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,83E-02	2,65E-05	1,22E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,13E-06	2,12E-05	1,83E-07	-7,83E-04
ADP-fossil resources	MJ	1,91E+03	1,11E+02	3,36E+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	8,92E+00	6,75E+00	1,20E+00	-5,41E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	4,10E+01	5,13E-01	5,29E-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	4,13E-02	2,83E-01	2,94E-02	-1,45E+01

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	3,25E+02	1,59E+00	7,89E-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	1,28E-01	8,35E-01	1,91E-02	-9,68E+01
Renew. PER as material	MJ	8,11E+01	0,00E+00	-8,11E+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	-4,21E+01
Total use of renew. PER	MJ	4,06E+02	1,59E+00	-8,10E+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	1,28E-01	8,35E-01	1,91E-02	-1,39E+02
Non-re. PER as energy	MJ	1,83E+03	1,11E+02	3,36E+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	8,92E+00	6,74E+00	1,20E+00	-5,40E+02
Non-re. PER as material	MJ	4,46E+01	0,00E+00	-5,24E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,62E+01	-3,15E+00	-1,10E+00
Total use of non-re. PER	MJ	1,88E+03	1,11E+02	-1,89E+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	8,92E+00	-2,95E+01	-1,94E+00	-5,42E+02
Secondary materials	kg	4,12E+00	3,72E-02	3,71E-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	2,99E-03	9,49E-03	4,88E-04	1,96E+01
Renew. secondary fuels	MJ	2,56E+00	4,10E-04	1,61E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,30E-05	7,44E-04	1,35E-05	-9,45E-03
Non-ren. secondary fuels	MJ	6,64E-08	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
Use of net fresh water	m <sup>3</sup>	9,47E-01	1,40E-02	-1,19E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,12E-03	1,05E-02	1,22E-03	-4,56E-01

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,37E+01	1,24E-01	5,17E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,00E-02	6,42E-02	5,96E-03	-2,49E+01
Non-hazardous waste	kg	8,95E+01	2,21E+00	7,79E+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	1,78E-01	3,29E+00	5,24E+00	-1,08E+02
Radioactive waste	kg	2,71E-02	7,64E-04	1,58E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,15E-05	2,87E-05	8,50E-07	-6,96E-04

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	8,63E-01	0,00E+00	1,08E+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	2,96E+01	0,00E+00	0,00E+00
Materials for energy rec	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
Exported energy	MJ	0,00E+00	0,00E+00	7,86E+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	2,76E+01	0,00E+00	0,00E+00

# DOOR FOR FREEZER

Results refer to **1 unit** of door 2.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,28E+02	8,00E+00	1,03E+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	6,43E-01	6,13E+00	8,52E-01	-6,05E+01
GWP – fossil	kg CO <sub>2</sub> e	1,38E+02	7,99E+00	3,12E-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	6,43E-01	6,13E+00	9,14E-01	-6,57E+01
GWP – biogenic	kg CO <sub>2</sub> e	-9,90E+00	0,00E+00	9,96E+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	-6,19E-02	5,25E+00
GWP – LULUC	kg CO <sub>2</sub> e	1,22E-01	3,14E-03	1,21E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,52E-04	6,43E-04	4,92E-05	-4,70E-02
Ozone depletion pot.	kg CFC <sub>11</sub> e	5,61E-06	1,85E-06	4,57E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,49E-07	5,74E-08	1,62E-08	-2,11E-06
Acidification potential	mol H <sup>+</sup> e	1,04E+00	3,24E-02	2,09E-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	2,61E-03	7,91E-03	5,34E-04	-2,90E-01
EP-freshwater	kg Pe	5,08E-03	5,61E-05	3,67E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,51E-06	3,02E-05	7,76E-07	-9,18E-04
EP-marine	kg Ne	1,39E-01	9,69E-03	8,56E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,80E-04	3,83E-03	2,03E-04	-5,28E-02
EP-terrestrial	mol Ne	1,70E+00	1,07E-01	9,12E-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	8,60E-03	3,30E-02	2,18E-03	-6,06E-01
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	4,58E-01	3,27E-02	2,38E-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	2,63E-03	8,21E-03	6,38E-04	-2,83E-01
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,86E-02	2,83E-05	1,31E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,28E-06	2,27E-05	1,84E-07	-8,28E-04
ADP-fossil resources	MJ	2,06E+03	1,19E+02	3,59E+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	9,55E+00	8,16E+00	1,22E+00	-5,86E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	4,16E+01	5,48E-01	5,66E-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	4,41E-02	3,68E-01	2,95E-02	-1,56E+01

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	3,38E+02	1,70E+00	8,44E-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	1,37E-01	9,03E-01	1,93E-02	-1,06E+02
Renew. PER as material	MJ	8,66E+01	0,00E+00	-8,66E+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	-4,50E+01
Total use of renew. PER	MJ	4,24E+02	1,70E+00	-8,65E+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	1,37E-01	9,03E-01	1,93E-02	-1,51E+02
Non-re. PER as energy	MJ	1,94E+03	1,19E+02	3,59E+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	9,55E+00	8,16E+00	1,22E+00	-5,86E+02
Non-re. PER as material	MJ	8,49E+01	0,00E+00	-5,60E+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	-7,61E+01	-3,15E+00	-1,18E+00
Total use of non-re. PER	MJ	2,02E+03	1,19E+02	-2,01E+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	9,55E+00	-6,80E+01	-1,93E+00	-5,87E+02
Secondary materials	kg	4,36E+00	3,98E-02	3,97E-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	3,20E-03	1,04E-02	4,91E-04	2,07E+01
Renew. secondary fuels	MJ	2,74E+00	4,38E-04	1,73E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,53E-05	8,01E-04	1,36E-05	-1,00E-02
Non-ren. secondary fuels	MJ	6,96E-08	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
Use of net fresh water	m <sup>3</sup>	9,63E-01	1,49E-02	-1,28E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,20E-03	1,46E-02	1,24E-03	-4,93E-01

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,55E+01	1,33E-01	5,53E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,07E-02	6,78E-02	5,96E-03	-2,63E+01
Non-hazardous waste	kg	9,74E+01	2,36E+00	8,34E+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	1,90E-01	4,16E+00	5,33E+00	-1,18E+02
Radioactive waste	kg	2,81E-02	8,17E-04	1,69E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,58E-05	3,03E-05	8,50E-07	-8,16E-04

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,03E-01	0,00E+00	1,16E+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	3,13E+01	0,00E+00	0,00E+00
Materials for energy rec	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
Exported energy	MJ	0,00E+00	0,00E+00	8,40E+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	4,45E+01	0,00E+00	0,00E+00



# REFRIGERATION UNIT F 1541

Results refer to **1 unit** of refrigeration unit F 1541.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,13E+04	2,78E+01	4,13E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	2,43E+00	1,71E+01	2,17E+01	-1,70E+02
GWP – fossil	kg CO <sub>2</sub> e	1,13E+04	2,78E+01	3,90E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	2,43E+00	1,71E+01	2,17E+01	-1,87E+02
GWP – biogenic	kg CO <sub>2</sub> e	-4,09E+01	0,00E+00	4,09E+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	1,75E+01
GWP – LULUC	kg CO <sub>2</sub> e	1,23E+01	1,13E-02	1,95E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,51E+00	0,00E+00	0,00E+00	9,54E-04	1,46E-03	6,91E-03	-1,07E+00
Ozone depletion pot.	kg CFC <sub>11</sub> e	4,09E-04	6,12E-06	8,42E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,54E-03	0,00E+00	0,00E+00	5,62E-07	1,35E-07	6,94E-07	-9,75E-06
Acidification potential	mol H <sup>+</sup> e	6,45E+01	1,15E-01	5,57E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,89E+02	0,00E+00	0,00E+00	9,86E-03	1,90E-02	2,60E-02	-2,17E+00
EP-freshwater	kg Pe	5,93E-01	2,34E-04	5,92E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,71E-05	6,76E-05	2,06E-04	-9,74E-03
EP-marine	kg Ne	1,26E+01	3,36E-02	2,40E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,75E+01	0,00E+00	0,00E+00	2,95E-03	9,25E-03	1,20E-02	-1,96E-01
EP-terrestrial	mol Ne	1,41E+02	3,70E-01	2,72E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,37E+02	0,00E+00	0,00E+00	3,25E-02	8,11E-02	6,74E-02	-2,42E+00
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	4,27E+01	1,13E-01	7,22E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E+02	0,00E+00	0,00E+00	9,95E-03	2,01E-02	1,81E-02	-9,30E-01
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,28E+00	9,66E-05	2,16E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,03E-02	0,00E+00	0,00E+00	8,61E-06	5,07E-05	4,65E-05	-3,41E-02
ADP-fossil resources	MJ	1,50E+05	4,02E+02	4,87E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	3,61E+01	1,91E+01	5,96E+01	-1,95E+03
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	4,14E+03	1,76E+00	3,35E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,84E+04	0,00E+00	0,00E+00	1,67E-01	9,13E-01	1,53E+00	-1,22E+02

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	1,87E+04	4,71E+00	1,53E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	5,17E-01	2,03E+00	4,83E+00	-5,37E+02
Renew. PER as material	MJ	3,56E+02	0,00E+00	-3,56E+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	-1,39E-01	-1,39E-01	-1,50E+02
Total use of renew. PER	MJ	1,91E+04	4,71E+00	-3,56E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	5,17E-01	1,89E+00	4,69E+00	-6,86E+02
Non-re. PER as energy	MJ	1,52E+05	4,02E+02	4,87E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	3,61E+01	1,91E+01	5,97E+01	-1,95E+03
Non-re. PER as material	MJ	3,14E+02	0,00E+00	-2,31E+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	-1,48E+02	-1,43E+02	-3,93E+00
Total use of non-re. PER	MJ	1,52E+05	4,02E+02	-1,83E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	3,61E+01	-1,29E+02	-8,30E+01	-1,95E+03
Secondary materials	kg	1,88E+03	1,32E-01	5,44E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,21E-02	2,35E-02	1,63E-02	3,95E+01
Renew. secondary fuels	MJ	1,19E+01	1,71E-03	2,59E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,33E-04	1,79E-03	1,40E-03	-2,91E-02
Non-ren. secondary fuels	MJ	2,30E-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	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	9,02E+01	4,75E-02	8,12E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,72E+02	0,00E+00	0,00E+00	4,54E-03	3,55E-02	4,28E-02	-3,12E+00

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	2,78E+02	5,79E-01	4,19E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E+03	0,00E+00	0,00E+00	4,05E-02	1,48E-01	2,93E+00	-6,81E+01
Non-hazardous waste	kg	3,33E+03	9,25E+00	1,39E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,05E+04	0,00E+00	0,00E+00	7,19E-01	1,03E+01	3,54E+01	-6,94E+02
Radioactive waste	kg	3,26E-01	2,66E-03	2,03E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,58E+00	0,00E+00	0,00E+00	2,48E-04	6,72E-05	1,35E-04	-5,91E-03

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	8,88E-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	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,18E+02	0,00E+00	3,86E+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	7,07E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	1,76E-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	0,00E+00	0,00E+00
Exported energy	MJ	6,18E-02	0,00E+00	1,02E+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	1,28E+02	0,00E+00	0,00E+00

# REFRIGERATION UNIT F 851

Results refer to **1 unit** of refrigeration unit F 851.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,09E+04	1,71E+01	4,03E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,01E+04	0,00E+00	0,00E+00	1,42E+00	1,39E+01	1,08E+01	-8,54E+01
GWP – fossil	kg CO <sub>2</sub> e	1,09E+04	1,71E+01	3,64E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,01E+04	0,00E+00	0,00E+00	1,42E+00	1,39E+01	1,08E+01	-9,89E+01
GWP – biogenic	kg CO <sub>2</sub> e	-3,99E+01	0,00E+00	3,99E+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	1,38E+01
GWP – LULUC	kg CO <sub>2</sub> e	1,19E+01	6,98E-03	1,76E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,19E+00	0,00E+00	0,00E+00	5,58E-04	8,34E-04	3,82E-03	-2,59E-01
Ozone depletion pot.	kg CFC-11e	2,49E-04	3,77E-06	7,69E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,59E-03	0,00E+00	0,00E+00	3,29E-07	9,14E-08	2,06E-07	-4,73E-06
Acidification potential	mol H <sup>+</sup> e	6,19E+01	7,08E-02	5,21E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,43E+02	0,00E+00	0,00E+00	5,77E-03	1,36E-02	1,33E-02	-1,07E+00
EP-freshwater	kg Pe	5,75E-01	1,44E-04	5,33E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,98E-06	3,85E-05	8,90E-05	-4,65E-03
EP-marine	kg Ne	1,22E+01	2,07E-02	2,25E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,60E+01	0,00E+00	0,00E+00	1,72E-03	6,85E-03	8,04E-03	-1,04E-01
EP-terrestrial	mol Ne	1,37E+02	2,28E-01	2,55E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,99E+02	0,00E+00	0,00E+00	1,90E-02	6,15E-02	3,57E-02	-1,28E+00
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	4,13E+01	6,94E-02	6,77E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,08E+02	0,00E+00	0,00E+00	5,82E-03	1,51E-02	9,53E-03	-4,89E-01
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,28E+00	5,95E-05	1,92E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,03E-02	0,00E+00	0,00E+00	5,04E-06	2,78E-05	2,34E-05	-1,63E-02
ADP-fossil resources	MJ	1,45E+05	2,48E+02	4,57E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,86E+05	0,00E+00	0,00E+00	2,11E+01	1,25E+01	2,84E+01	-9,86E+02
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	3,77E+03	1,08E+00	3,10E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,78E+04	0,00E+00	0,00E+00	9,76E-02	6,50E-01	6,84E-01	-4,10E+01

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	1,81E+04	2,90E+00	1,36E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,66E+04	0,00E+00	0,00E+00	3,03E-01	1,13E+00	2,69E+00	-2,45E+02
Renew. PER as material	MJ	3,48E+02	0,00E+00	-3,48E+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	-1,15E-01	-1,15E-01	-1,19E+02
Total use of renew. PER	MJ	1,85E+04	2,90E+00	-3,48E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,66E+04	0,00E+00	0,00E+00	3,03E-01	1,02E+00	2,57E+00	-3,64E+02
Non-re. PER as energy	MJ	1,48E+05	2,48E+02	4,57E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,86E+05	0,00E+00	0,00E+00	2,11E+01	1,24E+01	2,84E+01	-9,85E+02
Non-re. PER as material	MJ	2,94E+02	0,00E+00	-2,27E+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	-1,43E+02	-1,29E+02	-3,11E+00
Total use of non-re. PER	MJ	1,48E+05	2,48E+02	-1,81E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,86E+05	0,00E+00	0,00E+00	2,11E+01	-1,30E+02	-1,00E+02	-9,88E+02
Secondary materials	kg	1,85E+03	8,15E-02	5,13E-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	7,08E-03	1,34E-02	7,87E-03	2,17E+01
Renew. secondary fuels	MJ	1,16E+01	1,06E-03	2,36E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,80E-05	9,90E-04	8,41E-04	-1,71E-02
Non-ren. secondary fuels	MJ	1,19E-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	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	8,50E+01	2,93E-02	7,50E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,33E+02	0,00E+00	0,00E+00	2,66E-03	2,64E-02	2,01E-02	-1,15E+00

7) PER = Primary energy resources

### END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,45E+02	3,57E-01	4,07E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,15E+03	0,00E+00	0,00E+00	2,37E-02	8,00E-02	1,07E+00	-3,49E+01
Non-hazardous waste	kg	2,55E+03	5,70E+00	1,31E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,04E+04	0,00E+00	0,00E+00	4,20E-01	7,23E+00	2,15E+01	-3,42E+02
Radioactive waste	kg	2,92E-01	1,64E-03	1,95E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,87E+00	0,00E+00	0,00E+00	1,45E-04	3,61E-05	8,69E-05	-2,48E-03

### END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	4,23E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,18E+02	0,00E+00	3,06E+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	3,79E+01	0,00E+00	0,00E+00
Materials for energy rec	kg	8,47E-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	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	3,21E-02	0,00E+00	1,02E+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	1,07E+02	0,00E+00	0,00E+00

## BIBLIOGRAPHY

ISO 14025:2010 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.

Ecoinvent database v3.8 (2021) and One Click LCA database.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

SFS-EN 50693:2019:en (Product category rules for life cycle assessments of electronic and electrical products and systems)

RTS PCR (Finnish version, 26.8.2020)

For component approach: Environmental Product Declaration of Lumon's Balcony, façade and terrace products (RTS\_257\_23)

Finnish national Emissions database for construction ([www.co2data.fi](http://www.co2data.fi))

<https://plasticextrusiontech.net/what-is-abs-material/>

Porkka Modular Cold Room LCA background report 17.6.2024

# ANNEX 1: RESULTS FOR PRODUCT COMPONENTS BY RTS PCR REQUIREMENTS

## FLOOR 80 MM

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	1,36E+00	2,07E-01	-3,37E-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	1,66E-02	1,58E-02	3,21E-02	-1,27E+00
ADP-minerals & metals	kg Sbe / kg	7,37E-05	7,16E-07	3,22E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	3,18E-07	1,82E-09	-9,15E-06
ADP-fossil	MJ / kg	4,07E+01	3,07E+00	9,26E-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	2,47E-01	4,42E-01	9,26E-03	-1,51E+01
Water use	m <sup>3</sup> e depr. / kg	1,37E+00	1,42E-02	1,46E-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	1,14E-03	5,23E-02	8,93E-04	-2,99E-01
Secondary materials	kg / kg	2,48E-02	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,28E-05	3,43E-04	6,21E-06	1,97E-01
Biog. C in product <sup>8)</sup>	kg C / kg	1,95E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## FLOOR 100 MM

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	1,48E+00	2,07E-01	-3,38E-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	1,67E-02	1,26E-01	2,91E-02	-1,28E+00
ADP-minerals & metals	kg Sbe / kg	7,16E-05	7,16E-07	3,23E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,77E-08	3,17E-07	1,66E-09	-8,72E-06
ADP-fossil	MJ / kg	4,33E+01	3,07E+00	9,28E-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	2,47E-01	4,88E-01	8,47E-03	-1,54E+01
Water use	m <sup>3</sup> e depr. / kg	1,52E+00	1,42E-02	1,46E-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	1,14E-03	5,48E-02	8,09E-04	-2,98E-01
Secondary materials	kg / kg	2,43E-02	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,28E-05	3,51E-04	5,64E-06	1,85E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## WALL OR CEILING 80 MM

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	3,28E+00	2,07E-01	-3,37E-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	1,66E-02	7,90E-01	3,45E-02	-1,67E+00
ADP-minerals & metals	kg Sbe / kg	1,39E-04	7,16E-07	3,22E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	5,61E-07	2,16E-09	-1,77E-05
ADP-fossil	MJ / kg	5,90E+01	3,06E+00	9,27E-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	2,47E-01	5,37E-01	1,24E-02	-1,75E+01
Water use	m <sup>3</sup> e depr. / kg	1,72E+00	1,42E-02	1,46E-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	1,14E-03	3,23E-02	9,67E-04	-4,00E-01
Secondary materials	kg / kg	4,06E-02	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,28E-05	3,45E-04	7,18E-06	4,32E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## WALL OR CEILING 100 MM

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	3,36E+00	2,07E-01	-3,38E-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	1,66E-02	9,23E-01	3,08E-02	-1,66E+00
ADP-minerals & metals	kg Sbe / kg	1,33E-04	7,16E-07	3,23E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	5,47E-07	1,94E-09	-1,66E-05
ADP-fossil	MJ / kg	6,23E+01	3,07E+00	9,27E-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	2,47E-01	6,03E-01	1,12E-02	-1,77E+01
Water use	m <sup>3</sup> e depr. / kg	1,94E+00	1,42E-02	1,47E-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	1,14E-03	3,69E-02	8,63E-04	-3,93E-01
Secondary materials	kg / kg	3,78E-02	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E-05	3,57E-04	6,44E-06	4,01E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## SHELF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	4,47E+00	2,07E-01	-3,37E-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	1,66E-02	9,45E-03	1,85E-02	-1,50E+00
ADP-minerals & metals	kg Sbe / kg	3,42E-05	7,16E-07	3,24E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	5,70E-07	5,68E-09	-2,15E-05
ADP-fossil	MJ / kg	6,59E+01	3,07E+00	9,27E-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	2,47E-01	1,36E-01	4,08E-02	-1,43E+01
Water use	m <sup>3</sup> e depr. / kg	1,49E+00	1,42E-02	1,46E-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	1,14E-03	4,43E-03	3,03E-04	-3,95E-01
Secondary materials	kg / kg	1,43E-01	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E-05	2,45E-04	1,37E-05	5,43E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## DOOR FOR REFRIGERATOR

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	3,36E+00	2,07E-01	-3,38E-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	1,66E-02	1,02E-01	2,53E-02	-1,56E+00
ADP-minerals & metals	kg Sbe / kg	1,88E-04	7,16E-07	3,24E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	5,81E-07	4,81E-09	-2,15E-05
ADP-fossil	MJ / kg	4,65E+01	3,07E+00	9,28E-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	2,47E-01	1,86E-01	3,33E-02	-1,49E+01
Water use	m <sup>3</sup> e depr. / kg	1,13E+00	1,42E-02	1,46E-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	1,14E-03	7,83E-03	8,14E-04	-4,02E-01
Secondary materials	kg / kg	2,05E-01	1,03E-03	1,02E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E-05	2,62E-04	1,35E-05	5,43E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.



## DOOR FOR FREEZER

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	3,29E+00	2,07E-01	-3,38E-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	1,66E-02	1,50E-01	2,36E-02	-1,56E+00
ADP-minerals & metals	kg Sbe / kg	1,82E-04	7,16E-07	3,24E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,76E-08	5,81E-07	4,53E-09	-2,12E-05
ADP-fossil	MJ / kg	4,72E+01	3,07E+00	9,28E-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	2,47E-01	2,11E-01	3,15E-02	-1,51E+01
Water use	m <sup>3</sup> e depr. / kg	1,07E+00	1,42E-02	1,46E-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	1,14E-03	9,52E-03	7,62E-04	-4,02E-01
Secondary materials	kg / kg	2,13E-01	1,03E-03	1,03E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E-05	2,68E-04	1,27E-05	5,36E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	1,05E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## REFRIGERATION UNIT F1541

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	7,57E+01	1,90E-01	-1,33E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E+02	0,00E+00	0,00E+00	1,67E-02	1,12E-01	1,48E-01	-1,16E+00
ADP-minerals & metals	kg Sbe / kg	1,76E-03	6,46E-07	1,13E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,50E-04	0,00E+00	0,00E+00	5,77E-08	3,44E-07	2,87E-07	-2,33E-04
ADP-fossil	MJ / kg	9,25E+01	2,75E+00	3,33E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,32E+03	0,00E+00	0,00E+00	2,47E-01	1,31E-01	4,08E-01	-1,34E+01
Water use	m <sup>3</sup> e depr. / kg	2,83E+01	1,21E-02	2,29E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,95E+02	0,00E+00	0,00E+00	1,14E-03	6,25E-03	1,05E-02	-8,38E-01
Secondary materials	kg / kg	1,28E+01	9,06E-04	3,73E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,28E-05	1,61E-04	1,12E-04	2,70E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	2,01E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## REFRIGERATION UNIT F851

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	1,25E+02	2,00E-01	-2,13E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,51E+02	0,00E+00	0,00E+00	1,66E-02	1,57E-01	1,26E-01	-9,99E-01
ADP-minerals & metals	kg Sbe / kg	2,99E-03	6,80E-07	1,75E-08	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,88E-04	0,00E+00	0,00E+00	5,76E-08	3,21E-07	2,67E-07	-1,91E-04
ADP-fossil	MJ / kg	1,07E+02	2,90E+00	5,35E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,69E+03	0,00E+00	0,00E+00	2,47E-01	1,46E-01	3,32E-01	-1,15E+01
Water use	m <sup>3</sup> e depr. / kg	4,41E+01	1,27E-02	3,62E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,08E+02	0,00E+00	0,00E+00	1,14E-03	7,61E-03	8,00E-03	-4,79E-01
Secondary materials	kg / kg	2,17E+01	9,54E-04	6,00E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,27E-05	1,57E-04	9,21E-05	2,53E-01
Biog. C in product <sup>8)</sup>	kg C / kg	0,00E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	2,01E-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

8) Biog. C in product = Biogenic carbon content in product. 9) Only wooden pallets are included.

## ANNEX 2: REFERENCE PRODUCTS ENVIRONMENTAL IMPACT

### PORKKA MCR 2121, 80 MM

#### CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,25E+04	1,12E+02	1,49E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	9,19E+00	3,34E+02	3,49E+01	-8,13E+02
GWP – fossil	kg CO <sub>2</sub> e	1,27E+04	1,12E+02	3,65E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	9,17E+00	2,87E+02	3,49E+01	-8,84E+02
GWP – biogenic	kg CO <sub>2</sub> e	-1,92E+02	0,00E+00	1,45E+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	4,67E+01	0,00E+00	7,25E+01
GWP – LULUC	kg CO <sub>2</sub> e	1,32E+01	4,42E-02	1,46E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,51E+00	0,00E+00	0,00E+00	3,60E-03	9,35E-03	7,14E-03	-1,75E+00
Ozone depletion pot.	kg CFC <sub>11</sub> e	4,93E-04	2,55E-05	5,62E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,54E-03	0,00E+00	0,00E+00	2,12E-06	1,66E-06	7,76E-07	-3,59E-05
Acidification potential	mol H <sup>+</sup> e	7,07E+01	4,56E-01	2,74E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,89E+02	0,00E+00	0,00E+00	3,72E-02	2,78E-01	2,96E-02	-5,79E+00
EP-freshwater	kg Pe	6,39E-01	8,22E-04	4,42E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,45E-05	4,28E-04	2,10E-04	-2,38E-02
EP-marine	kg Ne	1,41E+01	1,35E-01	1,14E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,75E+01	0,00E+00	0,00E+00	1,11E-02	1,48E-01	1,39E-02	-7,76E-01
EP-terrestrial	mol Ne	1,54E+02	1,49E+00	1,23E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,37E+02	0,00E+00	0,00E+00	1,23E-01	1,38E+00	8,34E-02	-9,10E+00
POCP (“smog”) <sup>2)</sup>	kg NMVOce	4,68E+01	4,55E-01	3,22E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E+02	0,00E+00	0,00E+00	3,75E-02	3,34E-01	2,29E-02	-3,72E+00
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,35E+00	3,93E-04	1,58E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,03E-02	0,00E+00	0,00E+00	3,25E-05	2,70E-04	4,76E-05	-4,10E-02
ADP-fossil resources	MJ	1,73E+05	1,64E+03	4,25E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,36E+02	2,10E+02	6,58E+01	-8,77E+03
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	4,79E+03	7,51E+00	6,27E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,84E+04	0,00E+00	0,00E+00	6,29E-01	1,38E+01	1,90E+00	-2,78E+02

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

#### USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	2,16E+04	2,25E+01	1,04E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	1,95E+00	1,18E+01	4,93E+00	-1,92E+03
Renew. PER as material	MJ	2,33E+03	0,00E+00	-1,26E+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	-1,06E+03	-1,39E-01	-6,25E+02
Total use of renew. PER	MJ	2,40E+04	2,25E+01	-1,26E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	1,95E+00	-1,05E+03	4,79E+00	-2,54E+03
Non-re. PER as energy	MJ	1,73E+05	1,64E+03	4,25E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,36E+02	2,10E+02	6,59E+01	-8,77E+03
Non-re. PER as material	MJ	3,11E+03	0,00E+00	-8,18E+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	-2,71E+03	-3,18E+02	-1,64E+01
Total use of non-re. PER	MJ	1,75E+05	1,64E+03	-3,94E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,36E+02	-2,50E+03	-2,52E+02	-8,78E+03

Secondary materials	kg	1,90E+03	5,49E-01	4,69E-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	4,56E-02	1,58E-01	1,95E-02	2,06E+02
Renew. secondary fuels	MJ	4,06E+01	6,30E-03	2,06E-04	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	5,03E-04	1,00E-02	1,45E-03	-1,17E-01
Non-ren. secondary fuels	MJ	2,30E-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	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m <sup>3</sup>	1,05E+02	2,04E-01	-5,30E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,72E+02	0,00E+00	0,00E+00	1,71E-02	5,64E-01	4,84E-02	-8,84E+00

7) PER = Primary energy resources

## END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3,95E+02	1,97E+00	6,18E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E+03	0,00E+00	0,00E+00	1,53E-01	6,98E-01	3,02E+00	-2,95E+02
Non-hazardous waste	kg	4,18E+03	3,40E+01	1,01E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,05E+04	0,00E+00	0,00E+00	2,71E+00	1,53E+02	6,11E+01	-2,16E+03
Radioactive waste	kg	5,87E-01	1,12E-02	1,97E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,58E+00	0,00E+00	0,00E+00	9,37E-04	3,14E-04	1,47E-04	-2,39E-02

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	8,88E-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	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,27E+02	0,00E+00	1,59E+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	1,73E+01	3,08E+02	0,00E+00	1,73E+01
Materials for energy rec	kg	1,11E+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	0,00E+00	0,00E+00
Exported energy	MJ	1,61E+02	0,00E+00	9,84E+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	2,58E+03	0,00E+00	0,00E+00

## KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	1,75E+02	6,70E+00	-1,07E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E+02	0,00E+00	0,00E+00	5,39E-01	1,77E+01	1,15E+00	-5,11E+01
ADP-minerals & metals	kg Sbe / kg	5,47E-03	2,32E-05	1,03E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,50E-04	0,00E+00	0,00E+00	1,87E-06	1,70E-05	3,70E-07	-7,71E-04
ADP-fossil	MJ / kg	1,88E+03	9,91E+01	2,95E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,32E+03	0,00E+00	0,00E+00	8,02E+00	1,47E+01	9,19E-01	-5,38E+02
Water use	m <sup>3</sup> e depr. / kg	7,94E+01	4,59E-01	4,62E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,95E+02	0,00E+00	0,00E+00	3,70E-02	9,75E-01	3,78E-02	-1,30E+01
Secondary materials	kg / kg	1,46E+01	3,33E-02	3,25E-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	2,69E-03	1,05E-02	3,66E-04	1,34E+01
Biog. C in product <sup>8)</sup>	kg C / kg	8,60E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	3,32E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

# PORKKA MCR 2121, 100 MM

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total <sup>1)</sup>	kg CO <sub>2</sub> e	1,27E+04	1,18E+02	1,58E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	8,53E+00	3,08E+02	3,25E+01	-7,73E+02
GWP – fossil	kg CO <sub>2</sub> e	1,28E+04	1,18E+02	3,92E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,81E+04	0,00E+00	0,00E+00	8,63E+00	3,08E+02	3,25E+01	-8,54E+02
GWP – biogenic	kg CO <sub>2</sub> e	-2,04E+02	0,00E+00	1,54E+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	1,48E+01	2,08E+02	2,06E+00	-2,80E+03
GWP – LULUC	kg CO <sub>2</sub> e	1,33E+01	4,69E-02	1,56E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,51E+00	0,00E+00	0,00E+00	3,35E-03	9,13E-03	7,12E-03	-1,70E+00
Ozone depletion pot.	kg CFC-11e	5,11E-04	2,71E-05	6,02E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,54E-03	0,00E+00	0,00E+00	1,99E-06	1,97E-06	7,72E-07	-2,93E-05
Acidification potential	mol H <sup>+</sup> e	7,14E+01	4,83E-01	2,92E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,89E+02	0,00E+00	0,00E+00	1,25E+01	2,49E+01	8,45E-01	-1,24E+03
EP-freshwater	kg Pe	6,48E-01	8,69E-04	4,75E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,99E-05	4,17E-04	2,10E-04	-2,29E-02
EP-marine	kg Ne	1,44E+01	1,43E-01	1,21E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,75E+01	0,00E+00	0,00E+00	1,04E-01	2,62E-01	1,61E-02	-1,72E+01
EP-terrestrial	mol Ne	1,55E+02	1,58E+00	1,31E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,37E+02	0,00E+00	0,00E+00	1,49E+01	2,09E+02	2,15E+00	-2,88E+03
POCP (“smog”) <sup>2)</sup>	kg NMVOCe	4,73E+01	4,84E-01	3,43E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,73E+02	0,00E+00	0,00E+00	3,49E-02	3,50E-01	2,22E-02	-3,53E+00
ADP-minerals & metals <sup>3)</sup>	kg Sbe	1,35E+00	4,18E-04	1,70E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,03E-02	0,00E+00	0,00E+00	3,02E-05	2,60E-04	4,75E-05	-4,05E-02
ADP-fossil resources	MJ	1,77E+05	1,75E+03	4,56E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,39E+02	2,40E+02	6,59E+01	-9,55E+03
Water use <sup>4)</sup>	m <sup>3</sup> e depr.	4,92E+03	7,98E+00	6,75E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,84E+04	0,00E+00	0,00E+00	5,86E-01	1,27E+01	1,83E+00	-2,66E+02

1) GWP = Global Warming Potential; 2) POCP = Photochemical ozone formation; 3) ADP = Abiotic depletion potential; 4) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy <sup>7)</sup>	MJ	2,18E+04	2,40E+01	1,11E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	2,07E+00	1,27E+01	4,92E+00	-2,08E+03
Renew. PER as material	MJ	2,48E+03	0,00E+00	-1,34E+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	-1,14E+03	-1,39E-01	-6,57E+02
Total use of renew. PER	MJ	2,44E+04	2,40E+01	-1,34E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,85E+04	0,00E+00	0,00E+00	2,07E+00	-1,13E+03	4,78E+00	-2,73E+03
Non-re. PER as energy	MJ	1,75E+05	1,75E+03	4,56E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,44E+02	2,50E+02	6,58E+01	-9,45E+03
Non-re. PER as material	MJ	3,77E+03	0,00E+00	-8,67E+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	-3,35E+03	-3,32E+02	-1,71E+01
Total use of non-re. PER	MJ	1,78E+05	1,75E+03	-4,11E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,77E+05	0,00E+00	0,00E+00	1,44E+02	-3,09E+03	-2,65E+02	-9,45E+03
Secondary materials	kg	1,90E+03	5,83E-01	5,03E-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	4,83E-02	1,74E-01	1,95E-02	2,08E+02
Renew. secondary fuels	MJ	4,30E+01	6,67E-03	2,21E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,33E-04	1,07E-02	1,45E-03	-1,20E-01

Non-ren. secondary fuels	MJ	2,30E-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	0,00E+00	0,00E+00	
Use of net fresh water	m <sup>3</sup>	1,09E+02	2,17E-01	-6,41E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,72E+02	0,00E+00	0,00E+00	1,82E-02	7,00E-01	4,84E-02	-9,39E+00

7) PER = Primary energy resources

## END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	3,98E+02	2,09E+00	6,66E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,84E+03	0,00E+00	0,00E+00	1,62E-01	7,09E-01	3,01E+00	-3,03E+02
Non-hazardous waste	kg	4,31E+03	3,61E+01	1,08E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,05E+04	0,00E+00	0,00E+00	2,88E+00	1,82E+02	6,12E+01	-2,32E+03
Radioactive waste	kg	6,00E-01	1,19E-02	2,12E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,58E+00	0,00E+00	0,00E+00	9,94E-04	3,18E-04	1,47E-04	-2,74E-02

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	8,88E-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	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,30E+02	0,00E+00	2,05E+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	4,29E+02	0,00E+00	0,00E+00
Materials for energy rec	kg	1,16E+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	0,00E+00	0,00E+00
Exported energy	MJ	1,69E+02	0,00E+00	1,32E+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	3,29E+03	0,00E+00	0,00E+00

## KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e / kg	1,79E+02	6,77E+00	-1,09E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,29E+02	0,00E+00	0,00E+00	5,45E-01	2,15E+01	1,07E+00	-5,15E+01
ADP-minerals & metals	kg Sbe / kg	5,38E-03	2,34E-05	1,04E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,50E-04	0,00E+00	0,00E+00	1,89E-06	1,69E-05	3,65E-07	-7,51E-04
ADP-fossil	MJ / kg	1,99E+03	1,00E+02	2,98E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,32E+03	0,00E+00	0,00E+00	8,10E+00	1,65E+01	8,93E-01	-5,50E+02
Water use	m <sup>3</sup> e depr. / kg	8,55E+01	4,64E-01	4,69E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,95E+02	0,00E+00	0,00E+00	3,74E-02	1,10E+00	3,54E-02	-1,29E+01
Secondary materials	kg / kg	1,45E+01	3,37E-02	3,28E-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	2,71E-03	1,09E-02	3,49E-04	1,28E+01
Biog. C in product <sup>8)</sup>	kg C / kg	7,81E-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging <sup>9)</sup>	kg C / kg	3,36E+00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



## ANNEX 3: SCENARIO PARAMETERS USED FOR REFERENCE PRODUCTS

### Scenario parameters for wastes generated in installation stage A5

Reference product	Wood (kg)	Cardboard (kg)
Porkka MCR 2121, 80 mm	94.54	15.86
Porkka MCR 2121, 100 mm	101.62	15.88

### Scenario parameters for stages C3 and C4

PORKKA MODULAR COLD ROOM 2121, 80MM		Value (%)	Value (kg)
Collection process	Collected separately	100	550.00
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	59.00	324.50
	For energy recovery	24.40	134.20
Disposal	Material for final deposition	16.60	91.30

<b>PORKKA MODULAR COLD ROOM 2121, 100MM</b>		<b>Value (%)</b>	<b>Value (kg)</b>
Collection process	Collected separately	100	585.00
	Collected with mixed waste	0	0
Recovery process	For reuse	0	0
	For recycling	56.40	329.94
	For energy recovery	28.00	163.80
Disposal	Material for final deposition	15.60	91.26

# ANNEX 4: BIOGENIC CARBON CONTENT FOR REFERENCE PRODUCTS

PORKKA MODULAR COLD ROOM 2121, 80MM	
Biogenic carbon content in product, kg C	11.90
Biogenic carbon content in packaging, kg C	48.36
PORKKA MODULAR COLD ROOM 2121, 100MM	
Biogenic carbon content in product, kg C	12.74
Biogenic carbon content in packaging, kg C	51.55

## ANNEX 5: AVERAGES AND VARIABILITY (REFERENCE PRODUCTS)

Results (GWP values for stages A1-A3) for reference products:

### PORKKA MCR 2121 80 mm

Product	GWP-total A1-A3	GWP-fossil A1-A3	GWP-biogenic A1-A3	GWP-LULUC A1-A3	Variation (%) to results with aver (GWP-fossil)
<i>Results calculated with average product components</i>	1.25E+04	1.27E+04	-1.92E+02	1.32E+01	N/A
<i>Results calculated with the exact (non-average) product components</i>	1.25E+04	1.27E+04	-1.92E+02	1.32E+01	0.00 %

### PORKKA MCR 2121 100 mm

Product	GWP-total A1-A3	GWP-fossil A1-A3	GWP-biogenic A1-A3	GWP-LULUC A1-A3	Variation (%) to results with aver (GWP-fossil)
<i>Results calculated with average product components</i>	1.27E+01	1.28E+01	-2.04E+02	1.35E+01	N/A
<i>Results calculated with the exact (non-average) product components</i>	1.27E+01	1.28E+01	-2.06E+02	1.35E+01	0.00 %