


Product Environmental Profile

Mounted Profiles for Furniture Installation



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Verifier accreditation number	VH45	Information and reference documents	www.pep-ecopassport.org
Date of issue	November 2024	Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2006			
Internal		External	X
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)			
PEP are compliant with XP CO08-100-1:2016 or EN 50693:2019			
The elements of the present PEP cannot be compared with elements from another program.			
Document in compliance with ISO 14025:2006 "Environmental labels and declarations. Type III environmental declarations"			

Company information

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Product description and homogeneous environmental family

This Product Environmental Profile (PEP) includes mounted profiles for furniture installation, which are compact elements to be installed in furniture containing energy, voice, data and multimedia solutions. The PEP includes a group of similar products, which all belong to the same product family. The covered profiles have the same main functionality and the same applicable standards EN IEC 60670-1:2021+EN IEC 60670-1:2021 A11:2021, while the standards for the socket outlets are IEC 63000:2018, IEC 60884-1 Ed. 4.0, UNE 20315-1-1:2017 and UNE 20315-1-2:2017.

These mounted profiles for furniture installation contain several electrical functions inside belonging to Simon's K45 range. The mounted profiles differ mainly in the shape and size of the products depending on the number of K45 elements contained within. In addition to the size and shape variations, the colour of each product – white and graphite – also represents another variation within the family.

The reference product of the family is **KFC104030LP1/9 Ofiblock Compact mounted with 3 sockets and a rear hole in white colour**. Extrapolation coefficients will be calculated and applied for each stage of the life cycle in order to calculate the impacts of the other products of the family.

Functional unit

“Mounted profile for furniture installation with a degree of protection IP4X containing one rear hole and three socket outlets, whose function is to establish, support and interrupt a rated current of 16A and a rated voltage of 250V according to the appropriate use scenario, and for the reference service life of the product of 20 years.”.

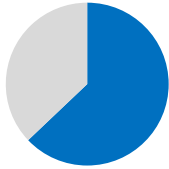

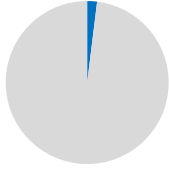

The reference flow is the product itself with its unitary packaging:

- Product with packaging: 460.81 g
- Product without packaging: 424.51 g

The reference lifetime is defined by the corresponding Product Specific Rules for this type of products in 20 years.

Constituent materials

The reference product is made of plastic and metal materials, with several cable elements. The packaging of the reference product is made of a cardboard box and adhesive labels.

Material		Weight	Percentage
Metals 62.91 % 	Aluminium	200.00	43.40%
	Brass/Copper alloys	39.72	8.62%
	Steel	50.19	10.89%
Plastics 27.26 % 	Polycarbonate	110.67	24.02%
	Polyamide	14.75	3.20%
	PTFE	0.20	0.04%
Others 1.95 % 	Cable	8.72	1.89%
	Glass fibres	0.26	0.06%
Packaging 7.88 % 	Cardboard	29.80	6,47%
	Paper	6.50	1,41%
Reference product		424.51	92.12%
Packaging		36.30	7.88%
TOTAL		460.81	100.00%

Manufacturing stage

This stage includes the production, industrial transformation, manufacturing processes and transportation of raw materials and components making up the reference product. The components of the product received from suppliers are transformed, assembled, packaged and tested by Simon in their manufacturing plant located in Martorelles, Spain. The generated wastes attributed to the manufacturing of the reference product have also been taken into account. In addition to these aspects, this stage also includes the transport from the packaging plant to Simon's last logistics platform in Spain, from where the products are distributed to the customers throughout the world.

Distribution stage

The products are directly distributed from Simon’s logistics platform to the final customers. The distribution scenario comprises the following destinations:

Destination	Percentage (%)	Type of transport
Spain	64.90 %	Intracontinental transport
Poland	24.04 %	Intracontinental transport
Portugal	2.50 %	Intracontinental transport
France	2.42 %	Intracontinental transport
Sweden	2.01 %	Intracontinental transport
Morocco	1.48 %	Intercontinental transport
Bulgaria	0.96 %	Intracontinental transport
Germany	0.67 %	Intracontinental transport
Russia	0.52 %	Intracontinental transport
Georgia	0.10 %	Intracontinental transport
Italy	0.07 %	Intracontinental transport
Peru	0.07 %	Intercontinental transport
Latvia	0.06 %	Intracontinental transport
Equatorial Guinea	0.06 %	Intercontinental transport
Belgium	0.04 %	Intracontinental transport
Reunion	0.04 %	Intercontinental transport
Estonia	0.04 %	Intracontinental transport
Slovenia	0.01 %	Intracontinental transport
Romania	< 0.00 %	Intracontinental transport
Argelia	< 0.00 %	Intercontinental transport

Installation stage

The Installation stage of the profiles consists of the manual assembly of the reference product by the customer, without energy consumption. The product is packaged without any additional component apart from the product itself (disposed in the end-of-life stage) and the packaging (disposed in the installation stage). For this reason, no installation waste has to be considered in the installation of the product apart from the packaging waste. The scenario for the end-of-life of the packaging components has been determined by the PSR for the distribution scope.

Use stage

The energy consumption due to the loss of energy during the lifetime of the reference product was estimated according to the PEP requirements described in the PSR. The use scenario requirements take into account a load rate of 10% of the rated current with a use time rated of 30% over 20 years of reference lifetime. Several laboratory tests have been conducted to estimate the load rate, applying the entire functional unit. The intensity applied has been modified to 10% of the maximum Intensity, according to the PSR specifications. Then, an electric energy formula has been applied, involving the load timing rate of the PSR:

$$P = I^2 * R * LR * UTR * RLT$$

Where: *I* = Intensity; *R* = Resistance; *LR* = Load Rate; *UTR* = Use Time Rate; *RLT* = Reference Lifetime

The total energy consumption by the socket outlets contained within the reference mounted profile due to losses of energy during 20 years in these given conditions was 1.212 kWh.

This product has no maintenance, as it is completely replaced when it breaks and must be renewed. The product quality is very high, and it can very easily last 20 years on the client's house. The installation of this products is done manually. For this reason, no additional electricity consumption is required for maintenance during the 20 years of use.

End of life stage

In the end-of-life stage, the following aspects were taking into account:

- The transportation of the components to the treatment site. As there is no data available for the end-of-life stage, the PSR indicates to take 1,000 km by lorry into consideration.
- The treatment process of the reference product.

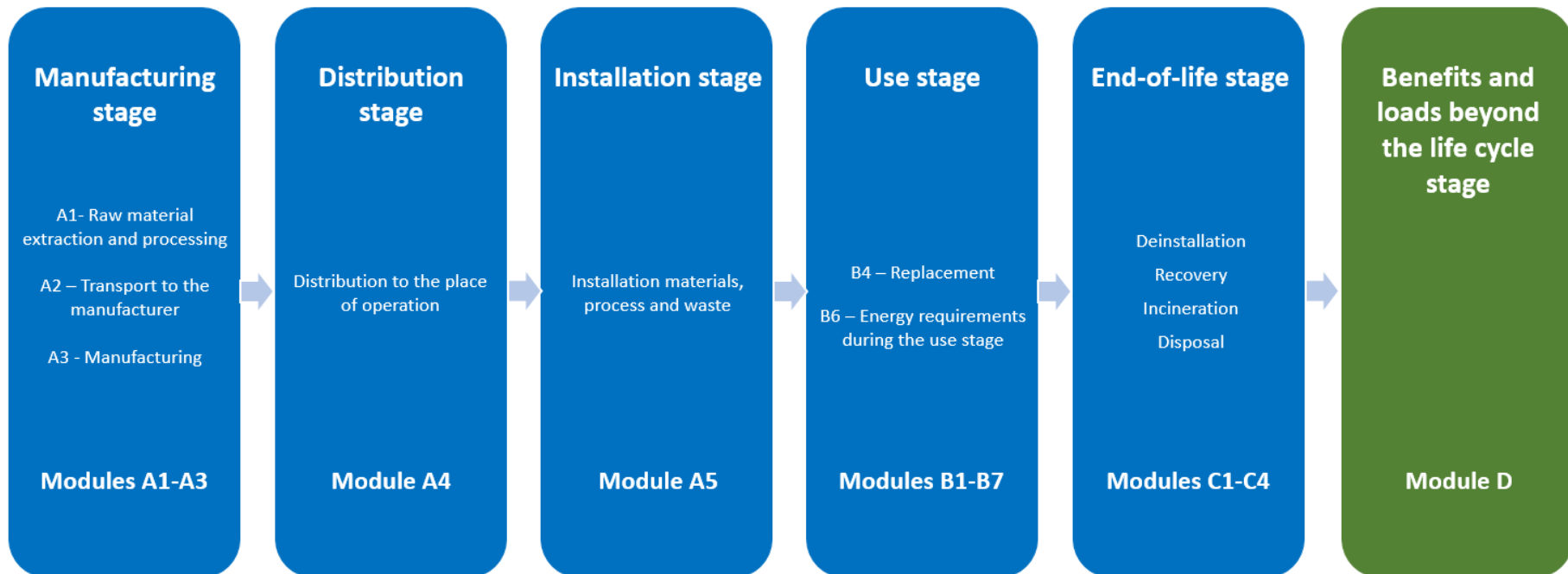
The reference product is covered by the WEEE Directive 2012/19/EU, and therefore its end-of-life is regulated. In order to reach the main EU objectives on recycling of this kind of products, the waste management of the reference product should be taken care by a producer responsibility organisation.

For the end-of-life of the product, data on the treatment of WEEE in the European Union in 2018 from the Eurostat database has been used to calculate the end-of-life scenario for European scope; while for the rest of the world PSR-default scenario has been used: 50% incineration without energy recovery and 50% landfilling.

Destination	Percentage of sales (%)	End-of-life scenario *		
		Recycling	Incineration	Landfilling
Europe	98.35 %	83.90 %	4.60 %	11.50 %
Rest of the world	1.65 %	00.00 %	50 %	50 %

Environmental impacts

The environmental impacts of the reference product have been evaluated for the five stages described above: manufacturing, distribution, installation, use and end-of-life stages. Additionally, each one of these stages have been divided when required into several modules.



The environmental impact assessment has been carried out with Simapro 9.6.0.1 tool and the background databases have been retrieved from Ecoinvent 3.9 libraries.

Results of mandatory indicators per Functional Unit of the reference product:

Impact category	Unit	Total	Manufacturing stage (modules A1-A3)		Distribution stage (module A4)		Installation stage (module A5)		Module B6	Use stage (modules B1-B7)		End-of-life stage (modules C1-C4)		Benefits (module D)
Climate change - Total	kg CO ₂ eq	5.74E+00	4.79E+00	83.39%	9.36E-02	1.63%	8.98E-02	1.56%	5.56E-01	5.56E-01	9.68%	2.14E-01	3.73%	-2.45E+00
Climate change – Fossil	kg CO ₂ eq	5.66E+00	4.79E+00	84.75%	9.35E-02	1.65%	2.08E-03	0.04%	5.53E-01	5.53E-01	9.78%	2.14E-01	3.78%	-2.41E+00
Climate change – Biogenic	kg CO ₂ eq	2.75E-02	-6.15E-02	-40.87%	2.97E-05	0.02%	8.77E-02	58.34%	9.07E-04	9.07E-04	0.60%	2.63E-04	0.18%	-1.04E-02
Climate change - Luluc	kg CO ₂ eq	5.53E-02	5.32E-02	96.27%	4.55E-05	0.08%	7.35E-07	0.00%	1.88E-03	1.88E-03	3.40%	1.41E-04	0.25%	-2.98E-02
Ozone depletion	kg CFC-11 eq	8.41E-07	8.29E-07	98.56%	2.02E-09	0.24%	5.72E-11	0.01%	7.08E-09	7.08E-09	0.84%	2.99E-09	0.36%	-8.87E-08
Acidification of soil and water	mol H ⁺ eq	5.33E-02	4.85E-02	91.05%	3.11E-04	0.58%	1.03E-05	0.02%	3.80E-03	3.80E-03	7.13%	6.47E-04	1.21%	-3.70E-02
Freshwater eutrophication	kg P eq	3.15E-04	2.65E-04	84.04%	7.50E-07	0.24%	1.97E-08	0.01%	4.71E-05	4.71E-05	14.96%	2.39E-06	0.76%	-1.55E-04
Marine aquatic eutrophication	kg N eq	5.84E-03	5.07E-03	86.90%	1.05E-04	1.80%	4.03E-06	0.07%	4.84E-04	4.84E-04	8.29%	1.72E-04	2.94%	-2.72E-03
Terrestrial eutrophication	mol N eq	7.06E-02	6.20E-02	87.94%	1.12E-03	1.59%	4.50E-05	0.06%	5.49E-03	5.49E-03	7.78%	1.86E-03	2.63%	-3.27E-02
Photochemical ozone creation (POCP)	kg NMVOC eq	2.41E-02	2.12E-02	87.87%	4.59E-04	1.90%	1.76E-05	0.07%	1.74E-03	1.74E-03	7.19%	7.14E-04	2.96%	-1.21E-02
Depletion of abiotic resources – elements	kg Sb eq	3.02E-04	2.95E-04	97.69%	3.00E-07	0.10%	9.87E-09	0.00%	5.05E-06	5.05E-06	1.67%	1.62E-06	0.54%	-3.45E-04
Depletion of abiotic resources – Fossil fuels	MJ	8.20E+01	6.83E+01	83.34%	1.33E+00	1.62%	2.71E-02	0.03%	1.02E+01	1.02E+01	12.48%	2.08E+00	2.54%	-3.49E+01
Water use	m ³ eq. depriv.	1.88E+00	1.66E+00	88.39%	5.41E-03	0.29%	1.58E-04	0.01%	1.98E-01	1.98E-01	10.55%	1.43E-02	0.76%	-1.00E+00

Results of inventory flows indicators & indicators describing the use of secondary materials for the reference product:

Impact category	Unit	Total	Manufacturing stage (modules A1-A3)	Distribution stage (module A4)	Installation stage (module A5)	Module B6	Use stage (modules B1-B7)	End-of-life stage (modules C1-C4)	Benefits (module D)
PERE	MJ	1.91E+01	1.69E+01	2.05E-02	2.05E-03	2.04E+00	2.04E+00	1.17E-01	-8.46E+00
PERM	MJ	9.36E-01	9.36E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.01E+01	1.79E+01	2.05E-02	2.05E-03	2.04E+00	2.04E+00	1.17E-01	-8.46E+00
PENRE	MJ	7.82E+01	6.45E+01	1.33E+00	2.71E-02	1.02E+01	1.02E+01	2.08E+00	-3.49E+01
PENRM	MJ	3.80E+00	3.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	8.20E+01	6.83E+01	1.33E+00	2.71E-02	1.02E+01	1.02E+01	2.08E+00	-3.49E+01
SM	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
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	1.08E-01	9.52E-02	1.89E-04	1.21E-05	1.15E-02	1.15E-02	6.27E-04	-5.55E-02

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW: Freshwater use

Results of waste category indicators and output flow indicators for the reference product:

Impact category	Unit	Total	Manufacturing stage (modules A1-A3)	Distribution stage (module A4)	Installation stage (module A5)	Module B6	Use stage (modules B1-B7)	End-of-life stage (modules C1-C4)	Benefits (module D)
Hazardous waste disposed	kg	3.98E-03	1.80E-03	8.44E-06	1.43E-07	1.64E-05	1.64E-05	2.16E-03	-8.15E-05
Non-hazardous waste disposed	kg	1.82E+00	1.48E+00	6.46E-02	3.90E-03	4.87E-02	4.87E-02	2.21E-01	-6.31E-01
Radioactive waste disposed	kg	2.35E-04	1.78E-04	4.27E-07	2.27E-08	5.50E-05	5.50E-05	2.02E-06	-6.90E-05
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
Material for recycling	kg	5.00E-01	1.21E-01	0.00E+00	2.88E-02	0.00E+00	0.00E+00	3.50E-01	0.00E+00
Materials for energy recovery	kg	8.76E-02	6.18E-02	0.00E+00	3.17E-03	0.00E+00	0.00E+00	2.27E-02	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results of biogenic carbon for the reference product:

Indicator	Unit	Quantity
Biogenic carbon content of the product	Kg of C	0.00E+00
Biogenic carbon content of the packaging	kg of C	2.39E-02

Extrapolation rules

Extrapolations factors have been calculated in order to extrapolate the results of the reference product for the rest of the products of the homogeneous environmental family of profiles for furniture installation. These extrapolation factors are based on the main environmental aspects for each life cycle stage, since all the products of the family have the same manufacturing method and materials:

- Manufacturing, distribution and benefits stages: the total weight of each product (sum of the product itself and the packaging).
- Installation stage: weight of the packaging components of each product.
- Use stage: energy consumption due to the electrical losses of each product during the reference lifetime.
- End-of-life stage: weight of each product without the packaging components.

Extrapolation coefficients:

SKU	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B1-B7)	End-of-life stage (C1-C4)	Benefits (D)
KFC103020LP1/14	9.46E-01	9.46E-01	1.00E+00	6.67E-01	9.42E-01	9.46E-01
KFC103020LP1/9	9.46E-01	9.46E-01	1.00E+00	6.67E-01	9.42E-01	9.46E-01
KFC104020LP2/14	1.00E+00	1.00E+00	1.00E+00	6.67E-01	1.00E+00	1.00E+00
KFC104020LP2/9	1.00E+00	1.00E+00	1.00E+00	6.67E-01	1.00E+00	1.00E+00
KFC104030LP1/14	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KFC104030LP1/9	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KFC105022LP1/14	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC105022LP1/9	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC105040LP1/14	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC105040LP1/9	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC106040LP2/14	1.32E+00	1.32E+00	1.00E+00	1.33E+00	1.35E+00	1.32E+00
KFC106040LP2/9	1.32E+00	1.32E+00	1.00E+00	1.33E+00	1.35E+00	1.32E+00
KFC203020LP1/14	9.46E-01	9.46E-01	1.00E+00	6.67E-01	9.42E-01	9.46E-01
KFC203020LP1/9	9.46E-01	9.46E-01	1.00E+00	6.67E-01	9.42E-01	9.46E-01
KFC204020LP2/14	1.00E+00	1.00E+00	1.00E+00	6.67E-01	1.00E+00	1.00E+00
KFC204020LP2/9	1.00E+00	1.00E+00	1.00E+00	6.67E-01	1.00E+00	1.00E+00
KFC204030LP1/14	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KFC204030LP1/9	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
KFC205022LP1/14	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC205022LP1/9	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC205040LP1/14	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC205040LP1/9	1.19E+00	1.19E+00	1.00E+00	1.33E+00	1.20E+00	1.19E+00
KFC206040LP2/14	1.32E+00	1.32E+00	1.00E+00	1.33E+00	1.35E+00	1.32E+00

SKU	Manufacturing stage (A1-A3)	Distribution stage (A4)	Installation stage (A5)	Use stage (B1-B7)	End-of-life stage (C1-C4)	Benefits (D)
KFC206040LP2/9	1.32E+00	1.32E+00	1.00E+00	1.33E+00	1.35E+00	1.32E+00
KFC2411/14	1.87E-01	8.93E-01	1.00E+00	3.33E-01	8.84E-01	8.93E-01
KFC2421/14	1.98E-01	9.46E-01	1.00E+00	6.67E-01	9.42E-01	9.46E-01
KFC2422/14	1.87E-01	8.93E-01	1.00E+00	6.67E-01	8.84E-01	8.93E-01
KFC2446U/14	3.58E-01	1.71E+00	1.00E+00	1.67E+00	1.77E+00	1.71E+00