Environmental Product Declaration

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

Window system

from

Purso Oy

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-03838
Publication date:	2021-06-09
Valid until:	2026-04-16

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): PCR 2019:14 Construction products. Version 1.0. 2019-12-20. UN CPC codes: Group 421, Class 4212
PCR review was conducted by: The Technical Committee of the International EPD® System. Chair: Claudia A. Peña. Contact via info@environdec.com
Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☐ EPD process certification ☒ EPD verification
Third party verifier: Hannu Karppi, Ramboll Finland Oy      Approved by: The International EPD® System

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

Company information

Owner of the EPD:
Timo Tuohimaa
Purso Oy
timo.tuohimaa@purso.fi
www.purso.fi

Name and location of production site:
Alumiinitie 1
37200 Siuro, Finland

Product information

Product: Window System

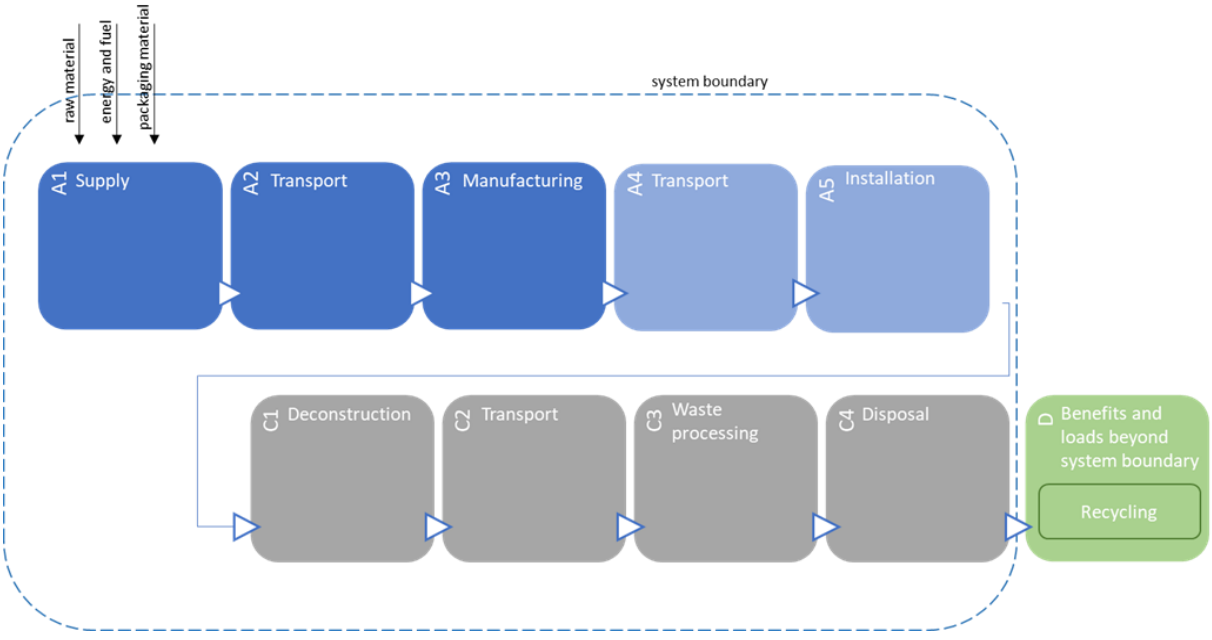
Product identification: LK90eco and LK75 Window Systems manufactured by Purso Oy.
Product description: Applications of window systems with high thermal insulation include inward and outward opening windows and double window with and without middle post.
More information available at www.purso.fi.

UN CPC code: 421
Geographical scope: Europe

LCA information

Functional unit / declared unit: 1 piece of window system (1230 mm x 1480 mm)
Reference service life: N/A
Time representativeness: reference year for data 2019, data used for LCA calculations 2019.
Database(s) and LCA software used: SimaPro (Release 9.1.0.11), ecoinvent 3.6 and Industry data 2.0.

System diagram:



	Product stage					Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x
Geography	EU27	EU27	EU27	EU27	EU27	-	-	-	-	-	-	-	EU27	EU27	EU27	EU27	EU27
Specific data	>90 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	>10 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	not relevant					-	-	-	-	-	-	-	-	-	-	-	-

Description of system boundaries: cradle-to-gate with options (A1-A5, C1- C4 and D)

Excluded lifecycle stages: Modules B1-B5 are not assessed. In B1-B5, only minimal maintenance is required. The excluded modules are very dependent on particular scenarios for a specific building or construction work.

LCA practitioner: Ecobio Oy, info@ecobio.fi
Explanatory material can be obtained from the EPD owner and/or LCA practitioner.

Cut-off rule: 1% cut-off rule was applied for input flows in the inventory. The material used is as up-to-date as possible and at most five years old for producer specific data and at most ten years old for generic data.

Content declaration

Product

Function	Product components	LK90eco, Weight, kg	LK75eco, Weight, kg	LK90eco, Post-consumer material, weight-%	LK75eco Post-consumer material, weight-%	Renewable material, weight-%
Window frame	Aluminium	14,1	14,03	0 or 41 %	0 or 41 %	0 %
Thermal insulator	Polyurethane	6,22	4,37	0 %	0 %	0 %
Thermal insulator	Polyamide	5,02	5,02	0 %	0 %	0 %
Sealing	EPDM (synthetic rubber polymer)	3,97	3,97	0 %	0 %	0 %
Hardware, hinges, screws	Galvanized steel	2,6	2,6	0 %	0 %	0 %
	TOTAL	**32**	**30**	**0 or 18 %**	**0 or 19 %**	**0 %**

	Packaging materials	Weight, kg	Weight, kg	LK90eco, Weight-% (versus the product)	LK90eco, Weight-% (versus the product)
Packaging	Wood	0,002	0,002	0,006	0,007
	Cardboard	0,1	0,1	0,3	0,3
	TOTAL	**0,102**	**0,102**	**0,306**	**0,307**

*The post-consumer material share of the aluminium window frame is 0 % or 41 % depending on whether the frame is made of primary or secondary aluminium. In 2019, the post-consumer aluminium share in the secondary aluminium window frame was 41 %.

One LK90eco Window System weights 32 kg and LK75 Window System 30 kg.

Glass is not included in the EPD of the Window Systems, as the end-customer can choose the glass according to their needs.

The window systems do not contain substances which exceed the limits for registration with the European Chemicals Agency regarding the “Candidate List of Substances of Very High Concern for Authorisation”.

Packaging

Distribution packaging: The Window Systems are packed with wood and plastic wrap. Incoming raw materials are packed with wood, cardboard and plastic, of which only wood and cardboard are included in calculations, as the plastic reel is continuously reused. The waste treatment of wood packaging is incineration and that of cardboard is recycling.

Manufacturing

The manufacturing of the Window Systems includes rolling and packaging of the product. In the rolling process, the aluminium profiles and polyurethane-polyamide block are fixed together. The rolling process consumes electricity.

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:
Aluminium profiles used in window frames can be made from either primary or secondary material. The aluminium profiles made of secondary material, were made of 41 % post-consumer aluminium and 59 % of pre-consumer aluminium on average in 2019.

The profiles are extruded and treated with either anodization or painting. The EPD includes 4 versions of aluminium profiles as inputs in window systems: anodized primary aluminium, painted primary aluminium, anodized secondary aluminium, and painted secondary aluminium.

Environmental performance

Potential environmental impact – LK90eco window system from anodized primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,58E+02	2,33E+00	1,30E+01	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-1,04E+02
GWP-biogenic	kg CO_2 eq.	6,79E+00	1,01E-02	2,47E+00	2,72E-04	1,72E-03	1,36E-01	1,35E+01	-3,23E-01
GWP-luluc	kg CO_2 eq.	2,27E+00	9,47E-04	1,13E-01	1,14E-05	9,46E-05	2,16E-03	1,49E-04	-1,68E+00
GWP-total	kg CO_2 eq.	2,67E+02	2,34E+00	1,55E+01	1,01E-01	2,66E-01	4,28E+00	2,28E+01	-1,06E+02
ODP	kg CFC 11 eq.	2,14E-05	4,03E-07	1,07E-06	1,71E-08	4,84E-08	2,56E-07	6,63E-08	-1,04E-05
AP	mol H^+ eq.	1,65E+00	1,84E-02	8,36E-02	1,05E-03	1,09E-03	1,80E-02	5,51E-03	-5,25E-01
EP-freshwater	kg P eq.	7,80E-02	1,85E-04	3,92E-03	5,77E-06	1,97E-05	1,42E-03	6,93E-04	-3,22E-02
EP-freshwater	kg PO_4^{3-} eq.	2,39E-01	5,66E-04	1,20E-02	1,77E-05	6,04E-05	4,37E-03	2,13E-03	-9,90E-02
EP-marine	kg N eq.	3,03E-01	4,97E-03	1,56E-02	4,58E-04	3,27E-04	3,19E-03	2,88E-03	-8,11E-02
EP-terrestrial	mol N eq.	3,12E+00	5,47E-02	1,61E-01	5,01E-03	3,58E-03	3,55E-02	2,46E-02	-7,54E-01
POCP	kg NMVOC eq.	7,63E-01	1,52E-02	3,94E-02	1,36E-03	1,07E-03	9,77E-03	6,01E-03	-2,24E-01
ADP-minerals&metals*	kg Sb eq.	2,64E-02	5,60E-05	1,32E-03	1,77E-07	7,22E-06	7,32E-05	5,20E-06	2,01E-04
ADP-fossil*	MJ	3,46E+03	3,37E+01	1,74E+02	1,39E+00	3,94E+00	2,67E+01	5,59E+00	-1,26E+03
WDP	m^3	-3,38E+02	-4,60E-03	-1,69E+01	-1,05E-05	-6,06E-04	-3,77E-02	4,16E-03	2,60E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – LK90eco window system from anodized secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,37E+02	2,33E+00	6,91E+00	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-5,90E+01
GWP-biogenic	kg CO_2 eq.	6,00E+00	1,01E-02	2,43E+00	2,72E-04	1,72E-03	1,36E-01	1,35E+01	-1,83E-01
GWP-luluc	kg CO_2 eq.	3,74E-01	9,47E-04	1,88E-02	1,14E-05	9,46E-05	2,16E-03	1,49E-04	-9,17E-01
GWP-total	kg CO_2 eq.	1,44E+02	2,34E+00	9,36E+00	1,01E-01	2,66E-01	4,28E+00	2,28E+01	-6,01E+01
ODP	kg CFC 11 eq.	7,95E-06	4,03E-07	4,03E-07	1,71E-08	4,84E-08	2,56E-07	6,63E-08	-5,59E-06
AP	mol H^+ eq.	8,06E-01	1,84E-02	4,15E-02	1,05E-03	1,09E-03	1,80E-02	5,51E-03	-2,91E-01
EP-freshwater	kg P eq.	2,57E-02	1,85E-04	1,30E-03	5,77E-06	1,97E-05	1,42E-03	6,93E-04	-1,72E-02
EP-freshwater	kg PO_4^{3-} eq.	7,90E-02	5,66E-04	4,00E-03	1,77E-05	6,04E-05	4,37E-03	2,13E-03	-5,29E-02
EP-marine	kg N eq.	1,72E-01	4,97E-03	9,05E-03	4,58E-04	3,27E-04	3,19E-03	2,88E-03	-4,54E-02
EP-terrestrial	mol N eq.	1,81E+00	5,47E-02	9,55E-02	5,01E-03	3,58E-03	3,55E-02	2,46E-02	-4,23E-01
POCP	kg NMVOC eq.	3,94E-01	1,52E-02	2,10E-02	1,36E-03	1,07E-03	9,77E-03	6,01E-03	-1,26E-01
ADP-minerals&metals*	kg Sb eq.	2,59E-02	5,60E-05	1,30E-03	1,77E-07	7,22E-06	7,32E-05	5,20E-06	1,05E-04
ADP-fossil*	MJ	1,99E+03	3,37E+01	1,00E+02	1,39E+00	3,94E+00	2,67E+01	5,59E+00	-7,10E+02
WDP	m^3	-4,53E+01	-4,60E-03	-2,27E+00	-1,05E-05	-6,06E-04	-3,77E-02	4,16E-03	1,42E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

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Potential environmental impact – LK90eco window system from painted primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,58E+02	2,33E+00	1,29E+01	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-1,04E+02
GWP-biogenic	kg CO_2 eq.	6,54E+00	1,01E-02	2,46E+00	2,72E-04	1,72E-03	1,36E-01	1,35E+01	-3,23E-01
GWP-luluc	kg CO_2 eq.	2,26E+00	9,47E-04	1,13E-01	1,14E-05	9,46E-05	2,16E-03	1,49E-04	-1,68E+00
GWP-total	kg CO_2 eq.	2,66E+02	2,34E+00	1,55E+01	1,01E-01	2,66E-01	4,28E+00	2,28E+01	-1,06E+02
ODP	kg CFC 11 eq.	2,11E-05	4,03E-07	1,06E-06	1,71E-08	4,84E-08	2,56E-07	6,63E-08	-1,04E-05
AP	mol H^+ eq.	1,64E+00	1,84E-02	8,31E-02	1,05E-03	1,09E-03	1,80E-02	5,51E-03	-5,25E-01
EP-freshwater	kg P eq.	7,71E-02	1,85E-04	3,87E-03	5,77E-06	1,97E-05	1,42E-03	6,93E-04	-3,22E-02
EP-freshwater	kg PO_4^{3-} eq.	2,37E-01	5,66E-04	1,19E-02	1,77E-05	6,04E-05	4,37E-03	2,13E-03	-9,90E-02
EP-marine	kg N eq.	2,99E-01	4,97E-03	1,54E-02	4,58E-04	3,27E-04	3,19E-03	2,88E-03	-8,11E-02
EP-terrestrial	mol N eq.	3,11E+00	5,47E-02	1,60E-01	5,01E-03	3,58E-03	3,55E-02	2,46E-02	-7,54E-01
POCP	kg NMVOC eq.	7,61E-01	1,52E-02	3,93E-02	1,36E-03	1,07E-03	9,77E-03	6,01E-03	-2,24E-01
ADP-minerals&metals*	kg Sb eq.	2,64E-02	5,60E-05	1,32E-03	1,77E-07	7,22E-06	7,32E-05	5,20E-06	2,01E-04
ADP-fossil*	MJ	3,46E+03	3,37E+01	1,74E+02	1,39E+00	3,94E+00	2,67E+01	5,59E+00	-1,26E+03
WDP	m^3	-3,38E+02	-4,60E-03	-1,69E+01	-1,05E-05	-6,06E-04	-3,77E-02	4,16E-03	2,60E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

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Potential environmental impact – LK90eco window system from painted secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,37E+02	2,33E+00	6,88E+00	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-5,90E+01
GWP-biogenic	kg CO_2 eq.	5,74E+00	1,01E-02	2,42E+00	2,72E-04	1,72E-03	1,36E-01	1,35E+01	-1,83E-01
GWP-luluc	kg CO_2 eq.	3,68E-01	9,47E-04	1,84E-02	1,14E-05	9,46E-05	2,16E-03	1,49E-04	-9,17E-01
GWP-total	kg CO_2 eq.	1,43E+02	2,34E+00	9,31E+00	1,01E-01	2,66E-01	4,28E+00	2,28E+01	-6,01E+01
ODP	kg CFC 11 eq.	7,68E-06	4,03E-07	3,89E-07	1,71E-08	4,84E-08	2,56E-07	6,63E-08	-5,59E-06
AP	mol H^+ eq.	7,95E-01	1,84E-02	4,10E-02	1,05E-03	1,09E-03	1,80E-02	5,51E-03	-2,91E-01
EP-freshwater	kg P eq.	2,48E-02	1,85E-04	1,26E-03	5,77E-06	1,97E-05	1,42E-03	6,93E-04	-1,72E-02
EP-freshwater	kg PO_4^{3-} eq.	7,63E-02	5,66E-04	3,87E-03	1,77E-05	6,04E-05	4,37E-03	2,13E-03	-5,29E-02
EP-marine	kg N eq.	1,68E-01	4,97E-03	8,86E-03	4,58E-04	3,27E-04	3,19E-03	2,88E-03	-4,54E-02
EP-terrestrial	mol N eq.	1,80E+00	5,47E-02	9,51E-02	5,01E-03	3,58E-03	3,55E-02	2,46E-02	-4,23E-01
POCP	kg NMVOC eq.	3,92E-01	1,52E-02	2,09E-02	1,36E-03	1,07E-03	9,77E-03	6,01E-03	-1,26E-01
ADP-minerals&metals*	kg Sb eq.	2,58E-02	5,60E-05	1,30E-03	1,77E-07	7,22E-06	7,32E-05	5,20E-06	1,05E-04
ADP-fossil*	MJ	2,00E+03	3,37E+01	1,00E+02	1,39E+00	3,94E+00	2,67E+01	5,59E+00	-7,10E+02
WDP	m^3	-4,53E+01	-4,60E-03	-2,27E+00	-1,05E-05	-6,06E-04	-3,77E-02	4,16E-03	1,42E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

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Potential environmental impact – LK75eco window system from anodized primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,47E+02	2,19E+00	1,24E+01	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-1,03E+02
GWP-biogenic	kg CO_2 eq.	6,61E+00	9,46E-03	2,89E+00	2,55E-04	1,62E-03	1,35E-01	1,20E+01	-3,21E-01
GWP-luluc	kg CO_2 eq.	2,26E+00	8,87E-04	1,13E-01	1,07E-05	8,87E-05	2,15E-03	1,32E-04	-1,68E+00
GWP-total	kg CO_2 eq.	2,56E+02	2,20E+00	1,54E+01	9,51E-02	2,49E-01	4,26E+00	2,02E+01	-1,05E+02
ODP	kg CFC 11 eq.	2,11E-05	3,78E-07	1,06E-06	1,60E-08	4,53E-08	2,55E-07	5,88E-08	-1,03E-05
AP	mol H^+ eq.	1,59E+00	1,72E-02	8,07E-02	9,80E-04	1,02E-03	1,79E-02	4,88E-03	-5,22E-01
EP-freshwater	kg P eq.	7,67E-02	1,73E-04	3,85E-03	5,41E-06	1,84E-05	1,42E-03	6,14E-04	-3,21E-02
EP-freshwater	kg PO_4^{3-} eq.	2,35E-01	5,31E-04	1,18E-02	1,66E-05	5,66E-05	4,35E-03	1,89E-03	-9,85E-02
EP-marine	kg N eq.	2,89E-01	4,66E-03	1,49E-02	4,29E-04	3,06E-04	3,17E-03	2,55E-03	-8,08E-02
EP-terrestrial	mol N eq.	3,02E+00	5,13E-02	1,56E-01	4,70E-03	3,35E-03	3,53E-02	2,18E-02	-7,50E-01
POCP	kg NMVOC eq.	7,28E-01	1,42E-02	3,78E-02	1,28E-03	1,00E-03	9,73E-03	5,34E-03	-2,23E-01
ADP-minerals&metals*	kg Sb eq.	2,64E-02	5,25E-05	1,32E-03	1,66E-07	6,77E-06	7,29E-05	4,62E-06	2,00E-04
ADP-fossil*	MJ	3,29E+03	3,16E+01	1,65E+02	1,30E+00	3,69E+00	2,66E+01	4,96E+00	-1,26E+03
WDP	m^3	-3,36E+02	-4,31E-03	-1,68E+01	-9,80E-06	-5,68E-04	-3,75E-02	3,69E-03	2,59E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

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Potential environmental impact – LK75eco window system from anodized secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,27E+02	2,19E+00	6,38E+00	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-5,87E+01
GWP-biogenic	kg CO_2 eq.	5,82E+00	9,46E-03	2,85E+00	2,55E-04	1,62E-03	1,35E-01	1,20E+01	-1,82E-01
GWP-luluc	kg CO_2 eq.	3,73E-01	8,87E-04	1,87E-02	1,07E-05	8,87E-05	2,15E-03	1,32E-04	-9,12E-01
GWP-total	kg CO_2 eq.	1,33E+02	2,20E+00	9,25E+00	9,51E-02	2,49E-01	4,26E+00	2,02E+01	-5,98E+01
ODP	kg CFC 11 eq.	7,80E-06	3,78E-07	3,94E-07	1,60E-08	4,53E-08	2,55E-07	5,88E-08	-5,56E-06
AP	mol H^+ eq.	7,52E-01	1,72E-02	3,89E-02	9,80E-04	1,02E-03	1,79E-02	4,88E-03	-2,90E-01
EP-freshwater	kg P eq.	2,46E-02	1,73E-04	1,25E-03	5,41E-06	1,84E-05	1,42E-03	6,14E-04	-1,71E-02
EP-freshwater	kg PO_4^{3-} eq.	7,57E-02	5,31E-04	3,84E-03	1,66E-05	5,66E-05	4,35E-03	1,89E-03	-5,26E-02
EP-marine	kg N eq.	1,59E-01	4,66E-03	8,42E-03	4,29E-04	3,06E-04	3,17E-03	2,55E-03	-4,52E-02
EP-terrestrial	mol N eq.	1,71E+00	5,13E-02	9,10E-02	4,70E-03	3,35E-03	3,53E-02	2,18E-02	-4,21E-01
POCP	kg NMVOC eq.	3,62E-01	1,42E-02	1,95E-02	1,28E-03	1,00E-03	9,73E-03	5,34E-03	-1,26E-01
ADP-minerals&metals*	kg Sb eq.	2,58E-02	5,25E-05	1,29E-03	1,66E-07	6,77E-06	7,29E-05	4,62E-06	1,04E-04
ADP-fossil*	MJ	1,83E+03	3,16E+01	9,21E+01	1,30E+00	3,69E+00	2,66E+01	4,96E+00	-7,07E+02
WDP	m^3	-4,51E+01	-4,31E-03	-2,26E+00	-9,80E-06	-5,68E-04	-3,75E-02	3,69E-03	1,41E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – LK75eco window system from painted primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	2,47E+02	2,19E+00	1,24E+01	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-1,03E+02
GWP-biogenic	kg CO_2 eq.	6,36E+00	9,46E-03	2,87E+00	2,55E-04	1,62E-03	1,35E-01	1,20E+01	-3,21E-01
GWP-luluc	kg CO_2 eq.	2,25E+00	8,87E-04	1,13E-01	1,07E-05	8,87E-05	2,15E-03	1,32E-04	-1,68E+00
GWP-total	kg CO_2 eq.	2,55E+02	2,20E+00	1,53E+01	9,51E-02	2,49E-01	4,26E+00	2,02E+01	-1,05E+02
ODP	kg CFC 11 eq.	2,09E-05	3,78E-07	1,05E-06	1,60E-08	4,53E-08	2,55E-07	5,88E-08	-1,03E-05
AP	mol H^+ eq.	1,58E+00	1,72E-02	8,02E-02	9,80E-04	1,02E-03	1,79E-02	4,88E-03	-5,22E-01
EP-freshwater	kg P eq.	7,58E-02	1,73E-04	3,81E-03	5,41E-06	1,84E-05	1,42E-03	6,14E-04	-3,21E-02
EP-freshwater	kg PO_4^{3-} eq.	2,33E-01	5,31E-04	1,17E-02	1,66E-05	5,66E-05	4,35E-03	1,89E-03	-9,85E-02
EP-marine	kg N eq.	2,85E-01	4,66E-03	1,47E-02	4,29E-04	3,06E-04	3,17E-03	2,55E-03	-8,08E-02
EP-terrestrial	mol N eq.	3,01E+00	5,13E-02	1,56E-01	4,70E-03	3,35E-03	3,53E-02	2,18E-02	-7,50E-01
POCP	kg NMVOC eq.	7,26E-01	1,42E-02	3,77E-02	1,28E-03	1,00E-03	9,73E-03	5,34E-03	-2,23E-01
ADP-minerals&metals*	kg Sb eq.	2,64E-02	5,25E-05	1,32E-03	1,66E-07	6,77E-06	7,29E-05	4,62E-06	2,00E-04
ADP-fossil*	MJ	3,29E+03	3,16E+01	1,65E+02	1,30E+00	3,69E+00	2,66E+01	4,96E+00	-1,26E+03
WDP	m^3	-3,36E+02	-4,31E-03	-1,68E+01	-9,80E-06	-5,68E-04	-3,75E-02	3,69E-03	2,59E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Potential environmental impact – LK75eco window system from painted secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,26E+02	2,19E+00	6,35E+00	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-5,87E+01
GWP-biogenic	kg CO_2 eq.	5,57E+00	9,46E-03	2,83E+00	2,55E-04	1,62E-03	1,35E-01	1,20E+01	-1,82E-01
GWP-luluc	kg CO_2 eq.	3,67E-01	8,87E-04	1,84E-02	1,07E-05	8,87E-05	2,15E-03	1,32E-04	-9,12E-01
GWP-total	kg CO_2 eq.	1,32E+02	2,20E+00	9,20E+00	9,51E-02	2,49E-01	4,26E+00	2,02E+01	-5,98E+01
ODP	kg CFC 11 eq.	7,53E-06	3,78E-07	3,81E-07	1,60E-08	4,53E-08	2,55E-07	5,88E-08	-5,56E-06
AP	mol H^+ eq.	7,42E-01	1,72E-02	3,84E-02	9,80E-04	1,02E-03	1,79E-02	4,88E-03	-2,90E-01
EP-freshwater	kg P eq.	2,38E-02	1,73E-04	1,21E-03	5,41E-06	1,84E-05	1,42E-03	6,14E-04	-1,71E-02
EP-freshwater	kg PO_4^{3-} eq.	7,29E-02	5,31E-04	3,70E-03	1,66E-05	5,66E-05	4,35E-03	1,89E-03	-5,26E-02
EP-marine	kg N eq.	1,55E-01	4,66E-03	8,23E-03	4,29E-04	3,06E-04	3,17E-03	2,55E-03	-4,52E-02
EP-terrestrial	mol N eq.	1,71E+00	5,13E-02	9,06E-02	4,70E-03	3,35E-03	3,53E-02	2,18E-02	-4,21E-01
POCP	kg NMVOC eq.	3,60E-01	1,42E-02	1,94E-02	1,28E-03	1,00E-03	9,73E-03	5,34E-03	-1,26E-01
ADP-minerals&metals*	kg Sb eq.	2,58E-02	5,25E-05	1,29E-03	1,66E-07	6,77E-06	7,29E-05	4,62E-06	1,04E-04
ADP-fossil*	MJ	1,84E+03	3,16E+01	9,23E+01	1,30E+00	3,69E+00	2,66E+01	4,96E+00	-7,07E+02
WDP	m^3	-4,51E+01	-4,31E-03	-2,26E+00	-9,80E-06	-5,68E-04	-3,75E-02	3,69E-03	1,41E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

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Potential environmental impact – additional mandatory and voluntary indicators

LK90eco window system from anodized primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG[1]	kg CO_2 eq.	2,61E+02	2,33E+00	1,31E+01	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-1,06E+02

LK90eco window system from anodized secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	1,38E+02	2,33E+00	6,93E+00	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-5,99E+01

LK90eco window system from painted primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	2,60E+02	2,33E+00	1,30E+01	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-1,06E+02

LK90eco window system from painted secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	1,37E+02	2,33E+00	6,89E+00	1,01E-01	2,64E-01	4,14E+00	9,29E+00	-5,99E+01

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

LK75eco window system from anodized primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	2,49E+02	2,19E+00	1,25E+01	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-1,05E+02

LK75eco window system from anodized secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	1,27E+02	2,19E+00	6,40E+00	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-5,96E+01

LK75eco window system from painted primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	2,49E+02	2,19E+00	1,25E+01	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-1,05E+02

LK75eco window system from painted secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG	kg CO_2 eq.	1,27E+02	2,19E+00	6,37E+00	9,49E-02	2,48E-01	4,12E+00	8,24E+00	-5,96E+01

Use of resources

LK90eco window system from anodized primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8,02E+02	3,62E-01	4,01E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-4,32E+02
PERM	MJ	3,79E+01	0	0	0	0	0	0	0
PERT	MJ	8,40E+02	3,62E-01	4,01E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-4,32E+02
PENRE	MJ	4,67E+03	3,47E+01	2,34E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,81E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	4,67E+03	3,47E+01	2,34E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,81E+03
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	7,45E+00	3,53E-03	3,73E-01	8,66E-05	4,24E-04	1,64E-02	2,08E-02	-3,91E+00
Acronyms	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 = Use of net fresh water								

LK90eco window system from anodized secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,08E+02	3,62E-01	1,54E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-2,35E+02
PERM	MJ	3,79E+01	0	0	0	0	0	0	0
PERT	MJ	3,46E+02	3,62E-01	1,54E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-2,35E+02
PENRE	MJ	2,58E+03	3,47E+01	1,30E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,00E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	2,58E+03	3,47E+01	1,30E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,00E+03
SM	kg	1,41E+01	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	3,91E+00	3,53E-03	1,96E-01	8,66E-05	4,24E-04	1,64E-02	2,08E-02	-2,55E+00
Acronyms	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 = Use of net fresh water								

LK90eco window system from painted primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	7,97E+02	3,62E-01	3,99E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-4,32E+02
PERM	MJ	3,79E+01	0	0	0	0	0	0	0
PERT	MJ	8,35E+02	3,62E-01	3,99E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-4,32E+02
PENRE	MJ	4,66E+03	3,47E+01	2,34E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,81E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	4,66E+03	3,47E+01	2,34E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,81E+03
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	7,43E+00	3,53E-03	3,72E-01	8,66E-05	4,24E-04	1,64E-02	2,08E-02	-3,91E+00
Acronyms	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 = Use of net fresh water								

LK90eco window system from painted secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,03E+02	3,62E-01	1,52E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-2,35E+02
PERM	MJ	3,79E+01	0	0	0	0	0	0	0
PERT	MJ	3,40E+02	3,62E-01	1,52E+01	1,12E-02	5,68E-02	3,43E+00	1,93E-01	-2,35E+02
PENRE	MJ	2,57E+03	3,47E+01	1,29E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,00E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	2,57E+03	3,47E+01	1,29E+02	1,41E+00	4,05E+00	3,52E+01	6,53E+00	-1,00E+03
SM	kg	1,41E+01	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	3,89E+00	3,53E-03	1,95E-01	8,66E-05	4,24E-04	1,64E-02	2,08E-02	-2,55E+00
Acronyms	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 = Use of net fresh water								

LK75eco window system from anodized primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8,06E+02	3,39E-01	4,03E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-4,30E+02
PERM	MJ	4,24E+01	0	0	0	0	0	0	0
PERT	MJ	8,49E+02	3,39E-01	4,03E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-4,30E+02
PENRE	MJ	4,46E+03	3,26E+01	2,24E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,80E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	4,46E+03	3,26E+01	2,24E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,80E+03
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	7,21E+00	3,31E-03	3,61E-01	8,11E-05	3,97E-04	1,63E-02	1,85E-02	-3,90E+00
Acronyms	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 = Use of net fresh water								

LK75eco window system from anodized secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,15E+02	3,39E-01	1,21E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-2,34E+02
PERM	MJ	4,24E+01	0	0	0	0	0	0	0
PERT	MJ	3,57E+02	3,39E-01	1,21E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-2,34E+02
PENRE	MJ	2,38E+03	3,26E+01	1,05E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,00E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	2,38E+03	3,26E+01	1,05E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,00E+03
SM	kg	1,40E+01	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	3,68E+00	3,31E-03	1,58E-01	8,11E-05	3,97E-04	1,63E-02	1,85E-02	-2,54E+00
Acronyms	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 = Use of net fresh water								

LK75eco window system from painted primary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	8,01E+02	3,39E-01	4,01E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-4,30E+02
PERM	MJ	4,24E+01	0	0	0	0	0	0	0
PERT	MJ	8,43E+02	3,39E-01	4,01E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-4,30E+02
PENRE	MJ	4,45E+03	3,26E+01	2,23E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,80E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	4,45E+03	3,26E+01	2,23E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,80E+03
SM	kg	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	7,18E+00	3,31E-03	3,60E-01	8,11E-05	3,97E-04	1,63E-02	1,85E-02	-3,90E+00
Acronyms	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 = Use of net fresh water								

LK75eco window system from painted secondary aluminium profile (unit MJ, net calorific value)

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,09E+02	3,39E-01	1,55E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-2,34E+02
PERM	MJ	4,24E+01	0	0	0	0	0	0	0
PERT	MJ	3,51E+02	3,39E-01	1,55E+01	1,05E-02	5,32E-02	3,41E+00	1,71E-01	-2,34E+02
PENRE	MJ	2,37E+03	3,26E+01	1,19E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,00E+03
PENRM	MJ.	0	0	0	0	0	0	0	0
PENRT	MJ	2,37E+03	3,26E+01	1,19E+02	1,32E+00	3,80E+00	3,50E+01	5,79E+00	-1,00E+03
SM	kg	1,40E+01	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	3,66E+00	3,31E-03	1,84E-01	8,11E-05	3,97E-04	1,63E-02	1,85E-02	-2,54E+00
Acronyms	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 = Use of net fresh water								

Waste production

LK90eco window system from anodized primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,57E-01	8,32E-05	2,29E-02	3,86E-06	1,05E-05	9,31E-02	1,86E-05	1,18E-01
Non-hazardous waste disposed	kg	5,61E+01	1,44E+00	4,35E+00	2,55E-03	1,92E-01	1,52E+01	9,78E-01	-2,72E+01
Radioactive waste disposed	kg	1,41E-02	2,26E-04	7,09E-04	9,52E-06	2,74E-05	1,46E-04	2,03E-05	-6,97E-03

LK90eco window system from anodized secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,19E-01	8,32E-05	2,09E-02	3,86E-06	1,05E-05	9,31E-02	1,86E-05	6,40E-02
Non-hazardous waste disposed	kg	2,27E+01	1,44E+00	2,68E+00	2,55E-03	1,92E-01	1,52E+01	9,78E-01	-1,47E+01
Radioactive waste disposed	kg	5,53E-03	2,26E-04	2,79E-04	9,52E-06	2,74E-05	1,46E-04	2,03E-05	-3,75E-03

LK90eco window system from painted primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,88E-01	8,32E-05	2,44E-02	3,86E-06	1,05E-05	9,31E-02	1,86E-05	1,18E-01
Non-hazardous waste disposed	kg	5,52E+01	1,44E+00	4,31E+00	2,55E-03	1,92E-01	1,52E+01	9,78E-01	-2,72E+01
Radioactive waste disposed	kg	1,40E-02	2,26E-04	7,01E-04	9,52E-06	2,74E-05	1,46E-04	2,03E-05	-6,97E-03

LK90eco window system from painted secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,49E-01	8,32E-05	2,25E-02	3,86E-06	1,05E-05	9,31E-02	1,86E-05	6,40E-02
Non-hazardous waste disposed	kg	2,18E+01	1,44E+00	2,64E+00	2,55E-03	1,92E-01	1,52E+01	9,78E-01	-1,47E+01
Radioactive waste disposed	kg	5,38E-03	2,26E-04	2,71E-04	9,52E-06	2,74E-05	1,46E-04	2,03E-05	-3,75E-03

Waste production

LK75eco window system from anodized primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,55E-01	7,80E-05	2,27E-02	3,62E-06	9,88E-06	9,27E-02	1,65E-05	1,17E-01
Non-hazardous waste disposed	kg	5,52E+01	1,35E+00	4,60E+00	2,39E-03	1,80E-01	1,51E+01	8,68E-01	-2,70E+01
Radioactive waste disposed	kg	1,40E-02	2,12E-04	7,02E-04	8,92E-06	2,57E-05	1,46E-04	1,80E-05	-6,94E-03

LK75eco window system from anodized secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,17E-01	7,80E-05	2,08E-02	3,62E-06	9,88E-06	9,27E-02	1,65E-05	6,37E-02
Non-hazardous waste disposed	kg	2,20E+01	1,35E+00	2,94E+00	2,39E-03	1,80E-01	1,51E+01	8,68E-01	-1,46E+01
Radioactive waste disposed	kg	5,44E-03	2,12E-04	2,74E-04	8,92E-06	2,57E-05	1,46E-04	1,80E-05	-3,73E-03

LK75eco window system from painted primary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,85E-01	7,80E-05	2,43E-02	3,62E-06	9,88E-06	9,27E-02	1,65E-05	1,17E-01
Non-hazardous waste disposed	kg	5,43E+01	1,35E+00	4,56E+00	2,39E-03	1,80E-01	1,51E+01	8,68E-01	-2,70E+01
Radioactive waste disposed	kg	1,38E-02	2,12E-04	6,94E-04	8,92E-06	2,57E-05	1,46E-04	1,80E-05	-6,94E-03

LK75eco window system from painted secondary aluminium profile

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4,47E-01	7,80E-05	2,23E-02	3,62E-06	9,88E-06	9,27E-02	1,65E-05	6,37E-02
Non-hazardous waste disposed	kg	2,11E+01	1,35E+00	2,89E+00	2,39E-03	1,80E-01	1,51E+01	8,68E-01	-1,46E+01
Radioactive waste disposed	kg	5,28E-03	2,12E-04	2,66E-04	8,92E-06	2,57E-05	1,46E-04	1,80E-05	-3,73E-03

Output flows

LK90eco window system

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0
Material for recycling	kg	0,1	0	0,00833	0	0	14,1	0	0
Materials for energy recovery	kg	0,9	0	1,46	0	0	17,8	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0

LK75eco window system

Results per declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0	0	0	0	0	0
Material for recycling	kg	0,1	0	0,01	0	0	14,0	0	0
Materials for energy recovery	kg	0,9	0	1,75	0	0	16,0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0

Information on biogenic carbon content

Results per declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	0,051

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2.

Additional information – Scenarios

Transport to construction site (A4)

Parameter	Unit
Vehicle type	Lorry, 16-32 metric ton
Load capacity	37 % (ecoinvent 3.6)
Distance	370 km
Bulk density	63 kg/m3

Parameter	Unit
Vehicle type	Transoceanic ship
Load capacity	65 % (LIPASTO)
Distance	85 km
Bulk density	63 kg/m3

Installation (A5)

Parameter	Unit
Ancillary materials for installation	estimated to very small and hence neglected
Water use	0 m3
Other resource use	0 kg
Energy type and consumption	estimated to very small and hence neglected
Waste materials	5 % material loss
Output materials	packaging materials; material reuse and energy recovery

End-of-life (C)

Parameter	Unit
Collection process	collected separately
Transportation	50 km road
Recovery system	90% of aluminium and 95 % of steel recycled
Disposal	Rest for waste incineration

Recycling (D)

The recycled aluminium and steel substitutes the primary aluminium and steel 1:1. In secondary aluminium products, the post-consumer aluminium amount is subtracted from the amount of aluminium going to recycling, as it has already been recovered from a previous system.

Differences versus previous versions

The previously published version followed standard EN 15804:2012 + A1:2013. The EPD has been updated to follow the new standard EN 15804:2012 + A2:2019 and its requirements: The impact categories have been updated and results for module D calculated for the product. Also, the aluminium origin in module A1 has been updated.

References

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www.environdec.com