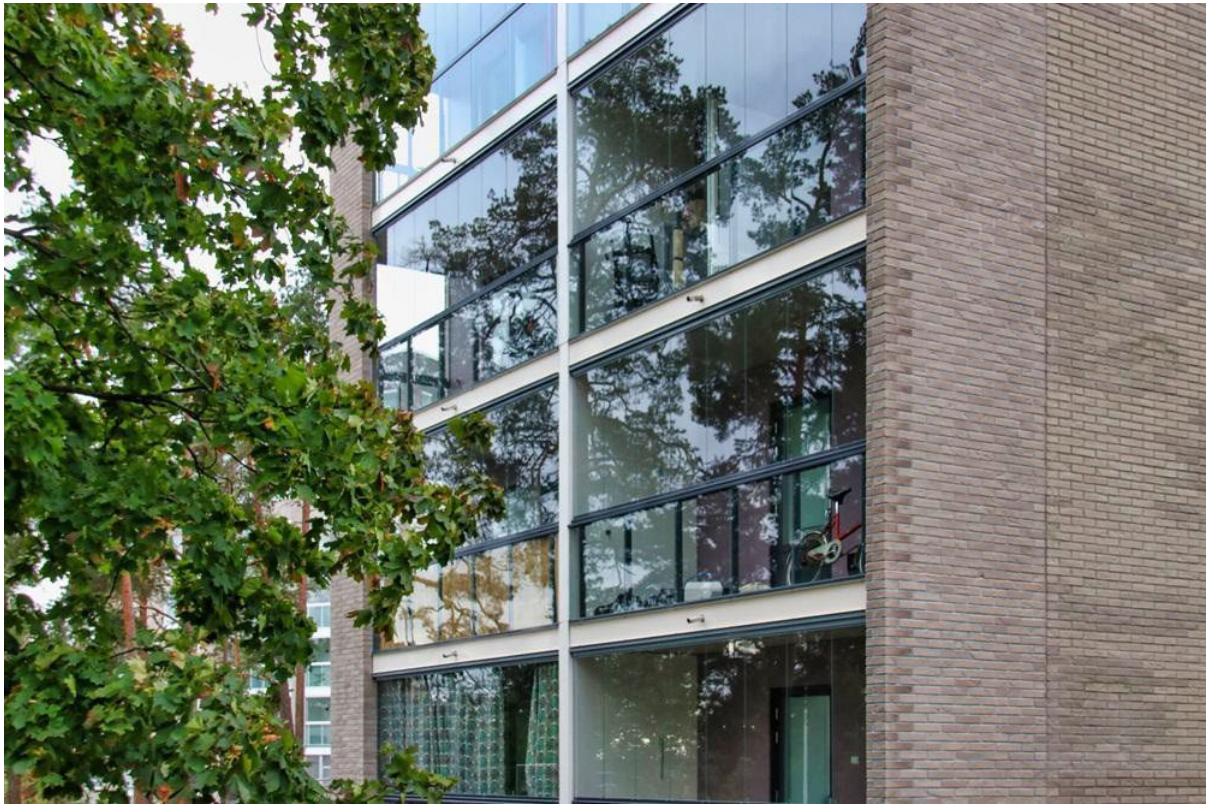
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Riikku Rakenteet Oy

Balcony and Terrace product
Component-EPD



Rakennustieto EPD
EPD Number: RTS_356_25
Publication date: 18.2.2025
Valid until: 18.2.2030

Granlund

Riikku

GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Riikku Rakenteet Oy
Address	Lasipellontie 8, 63400 Alavus
Contact details	Veli-Matti Pölönen, veli-matti.polonen@riikku.fi
Website	https://riikku.fi/

PRODUCT IDENTIFICATION

Product name	Balcony and terrace products
Additional label(s)	-
Product number / reference	
Place(s) of production	Alavus, Finland

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. EN15804 impact assessment indicators are based on EF 3.1.

EPD INFORMATION

EPD program operator	Rakennustieto EPD, Malminkatu 16 A, 00100 Helsinki, Finland https://ymparisto.rakennustieto.fi/
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. RTS PCR 2020
EPD author	Jere Peltomäki, Anni Viitala, Natalia Pennanen Granlund Oy, Malminkaari 21, 00701 Helsinki, Finland
EPD verification	Independent verification of this EPD and data, according to ISO 14025: External verification
Verification date	28.01.2025
EPD verifier	Mari Kirss, LCA Support
EPD number	RTS_356_25
Publishing date	18.2.2025
EPD valid until	18.2.2030

Jukka Seppänen
RTS EPD Committee Secretary

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PRODUCT INFORMATION

PRODUCT DESCRIPTIONS

RIIKKU POST RAILING

Riikku post railing solution is made of glass and aluminum. It is mainly used in balconies of apartments or other public spaces and walkways. It can be used for new construction and renovation projects.

The railing features a frame made of aluminum, with glass as the main cladding. The railing posts are supported to the balcony slab either from its edge or on top of the slab, depending on the chosen design. The spacing between the posts is primarily 400-1200 mm which are influenced by facade design, environmental conditions, and existing regulations.

The glass used is primarily tempered and laminated 4+4 mm glass or 5+5 mm glass. The railing can be implemented with cladding on either the outer or inner side of the posts.

The Riikku balcony glazing can be installed on top of the railing, creating a completely glazed balcony.

RIIKKU HORIZONTALLY SUPPORTED RAILING

Riikku Horizontally supported railing solution is made of glass and aluminum. It is mainly used on balconies of apartments or other public spaces and walkways. It can be used for new construction and renovation projects.

Horizontally supported railing is fastened to balcony walls from the ends of the handrail. Lower glass frame can be fastened to edge or on the top of balcony slap. Generally, at least one support post is needed to meet the regulations. However, the number of posts can be greater depending on the length of the railing and environmental conditions.

The glass used is primarily tempered and laminated 4+4 mm glass or 5+5 mm glass. Cladding in this system is always on the outside of the supporting posts.

The Riikku balcony glazing can be installed on top of the railing, creating a completely glazed balcony.

RIIKKU BALCONY GLAZING

When the system is used as balcony glazing, it is fixed to balcony railing and roof (=on railing “Riikku R2”).

System can be used also as full height glazing (=”Riikku R2 TK) in terraces or balconies fastened from floor to roof. In case of risk of falling, a separate barrier is needed that shall fulfil local requirements concerning safety.

The system can be fastened into concrete, steel, aluminium or timber substrates. It can be used for new construction and renovation projects. It is mainly used on balconies of apartments or other public spaces and walkways, but also on terraces.

Thickness of the tempered glass panes are 6, 8, 10 or 12 mm. The balcony glazing system consists of polyester or polyurethane powder painted or anodized horizontal aluminium frames and railings. The system has no vertical frames.

The balcony and terrace glazing is used to protect balcony or terrace interior from rain, snow, wind and dirt. The glazed balcony is not warm or half warm space. It is not totally watertight or air tight. Glass units can be glided one by one laterally and turned inwards so that the balcony front is free from glazing.

EAD and ETA: European Assessment Document: EAD 020002-00-0404 January 2016. European Technical Assessment: ETA 13/0212 of 31/05/2021.

TERRACE GLAZING

Riikku terrace glazing is a vertically supported sliding glazing system primarily designed for terraces. The system is full height glazing for terraces or balconies fastened from floor to roof. In case of risk of falling, a separate barrier is needed that shall fulfil local requirements concerning safety.

The thickness of the tempered glass panes are 4 or 6 mm. The terrace glazing system consists of polyester or polyurethane powder painted or anodized horizontal and vertical aluminium frames and railings. The system has vertical frames.

Vertical profiles have clamps fastening on each other, that connect the elements tightly to each other and facilitate the opening of the glazing. The terrace glazing does not turn when opened but slides to the side.

For Terrace Glazing is applied standard SFS-EN 14315-1 + A2: 2016 Windows and doors. Product standard, performance characteristics. Part 1: Windows and external pedestrian doorsets.

PRODUCT COMPONENT COMPOSITIONS

Component	Declared Unit	Description	Tempered glass	Laminated glass	Aluminium	Polymers	Steel
Tempered glass	1 kg	Tempered glass to be used in glazing	100 %	-	-	-	-
Laminated glass	1 kg	Laminated glass to be used in glazing	-	100 %			
Railing and balcony glass profile	1 kg	Aluminium profile for rails, moldings and hand railings	-	-	100 %	-	-
Railing accessory	1 kg	Nuts, bolts, plastic plugs and other small accessories used with railings	-	-	26 %	3 %	71 %
Balcony accessory	1 kg	Rivets and plastic accessories used with balconies	-	-	-	96 %	4 %
Seal and seal body	1 kg	Plastic seals	-	-	-	100 %	-
Moldings and sheet metal	1 kg	Moldings and metal sheets	-	-	-	-	100 %
Fastening accessory	1 kg	Nuts, bolts and other accessories used in fastening	-	-	-	-	100 %
Production facility	1 m	Includes all production related, allocated inputs and outputs, such as packaging materials, energy inputs and waste outputs	-	-	-	-	-

REFERENCE PRODUCT COMPONENT COMPOSITIONS

Reference product	Dimensions	Weight	Tempered glass	Laminated glass	Railing and balcony glass profile	Railing accessory	Balcony accessory	Seal and seal body	Moldings and sheet metal	Fastening accessory	Production facility
Riikku Post Railing	5,0 m x 1,36 m	160,5 kg	96,0 kg	-	49,5 kg	6,2 kg	-	2,9 kg	4,0 kg	1,9 kg	5,0 m
Riikku horizontally supported railing	5,0 m x 1,1 m	169,4 kg	96 kg	-	39,7 kg	14,8 kg	-	1,9 kg	-	0,5 kg	5,0 m
Riikku balcony glazing (on railing and full height)	5,0 m x 1,6 m	161,6 kg	111 kg	-	29,7 kg	-	2,1 kg	2 kg	-	0,4 kg	5,0 m
Riikku balcony glazing (no railing and full height	5,0 m x 2,1 m	321,9 kg	273,93 kg	-	27,21 kg	-	1,76 kg	2,11 kg	-	0,39 kg	5,0 m
Terrace glazing	4,0 m x 2 m	155,7 kg	107,4 kg	-	31,08 kg	-	0,34 kg	3,39 kg	-	0,27 kg	4,0 m

PACKAGING MATERIAL COMPOSITION

Main packaging materials of products per 1 meter of product are presented in table below.

Packaging material	Weight [kg]	Weight-%
Plastic	0,1	6 %
Cardboard	0,1	4 %
Euro pallet	1,0	37 %
Wood board	0,7	53 %
Total	**1,9**	

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	1 year, 2023

DECLARED AND FUNCTIONAL UNIT

Declared unit	1 unit of finished product
Mass per declared unit	Depends on inputs
Functional unit	-
Reference service life	-

This declaration covers the life cycle stages from cradle to gate with options (A4 and A5), modules C1–C4, and module D

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

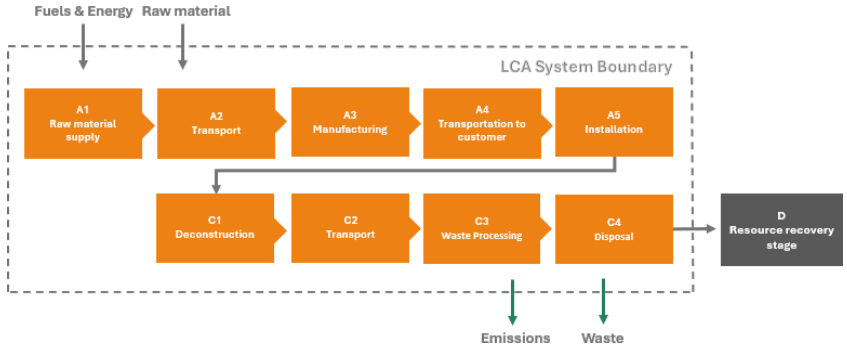
Biogenic carbon content in product, kg C	0 kg
Biogenic carbon content in packaging, kg C	0,93 kgC/1 m of product

SYSTEM BOUNDARY

The studied system boundary was cradle to gate with options, modules C1–C4 and module D (A1–A3, A4, A5, C1-C4 and D). The studied system covers the following steps of life cycle according to EN 15804: **A1** Raw material supply, **A2** Transport, **A3** Manufacturing, **A4** Transport to building, **A5** Installation to building, **C1** Deconstruction, **C2** Transportation of end-of-life **C3** Waste processing and **C4** Disposal. The benefits and loads beyond the system boundary are included to stage **D**, which consists of product reuse, recovery and recycling:

	Product Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Benefits and loads beyond the system boundary		
	Raw material supply	Transport	Manufacturing	Transport to building	Installation to building	Use/applications	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling
Stage	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
Included	X	X	X	X	X								X	X	X	X	X	X	X
Relevancy	R	R	R	R	R	NR	NR	NR	NR	NR	NR	NR	R	R	R	R	R	R	R

Mandatory
Mandatory as per the RTS PCR section 6.2.1 rules and terms
Optional modules based on scenarios

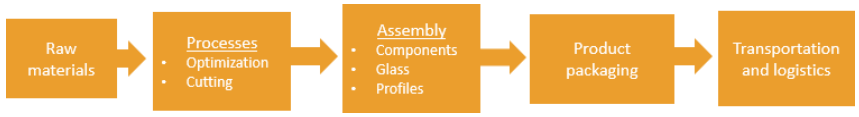


LCA System Boundary of studied products

The end of waste point of the production scraps is the point where it is processed to be ready to use in following life cycles. For example, for incinerated waste streams, it is the incineration of the materials, which results as energy that is then available for consumption in the following life cycle. For paper & metal waste streams, the materials are ready to be used as secondary raw material after sorting. End of waste point of the studied product is the step when materials are treated at the waste treatment. The end of waste point of the packaging materials in A5 module is the point when materials are collected and handled in the sorting plant.

Production stage (A3) of Riikku's production sites cover the following manufacturing processes; raw material supply, processing, packaging the final product. After that, products will be transported to the customer. The production processes of the studied product are presented in following Figure

THE PRODUCTION PROCESS OF STUDIED PRODUCT



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

CUT-OFF CRITERIA

This study follows the cut-off criteria stated in RTS PCR and EN 15804 -standard. This study does not exclude any modules or processes which represent more than 1 % of the emissions of studied life cycle stage. The study does not exclude any hazardous materials or substances.
Excluded processes and the criteria for exclusion are given in following table. Machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

Process excluded from study	Cut-off criteria	Quantified contribution from process
B1-B7 Use stage	Not relevant nor mandatory for the product group	-

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation rules used are made according to the ISO14044:2006. Allocation is avoided when possible and when necessary, allocation is made based on physical shares and also avoiding double calculations. Allocation is required if the production process produces more than one product and the flows of materials, energy and waste cannot be separately measured for the studied product. Allocation used in generic data sources follows the requirements of the EN 15804 -standard. It should be noticed that the allocation method "allocation, cut-off by classification" has been used for Ecoinvent 3.10 data, which complies with EN 15804. Avoiding allocation could not be avoided for following inputs as the information was only measured on factory process level.

- Electricity: only measured on factory level.
- District heating: only measured on factory level.
- Fuels: only measured on factory level.
- Production waste flows: only measured on factory level.
- Production water consumption: not consumed in processes
- Packaging materials: only measured on factory level.
- Ancillary materials: only measured on factory level.

According to EN 15804, flows leaving the system at the end-of-waste boundary of the product stage (A1-A3) are allocated as co-products. According to EN 15804, process that has a very low contribution to the overall revenue may be neglected in co-product allocation. Materials sent for recycling or energy recovery from manufacturing were not allocated, as it was estimated that their contribution to the overall revenue is very marginal. No other allocations were made in this assessment.

KEY ASSUMPTIONS

The scenarios included are currently in use and are representative for one of the most likely scenario alternatives.

C1-4 End of life scenario: End of life scenario was assumed based on the common practises of construction products in Finland and product's market area in Europe (SYKE 2021.)

- C1: Deconstruction/demolition: It was assumed that the products are disassembled and processed. The energy use (diesel usage) in the demolition stage is 1,30 kWh/t (Erlandsson, M. & Pettersson, D., 2015.)
- C2: Transportation distance 75 km road driving by lorry. (SYKE 2021.)
- C3-C4: It was assumed that products are collected, and the materials are separated.
    - Glass: 5 % Recycled, 95% Landfilled, according to Glass for Europe, 2024
    - Aluminium: 90 % recycled, 10 % landfilled, according to Metal Recycling Factsheet by EuRIC, 2018
    - Steel: 95 % recycled, 5 % landfilled, according to CO2data.fi
    - Plastics: 95 %energy recovery and 5 % final disposal

- Module D covers the net benefits and loads arising from the reuse or recycling of products or recovery of energy from end-of-waste state materials.

    - 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.

        - Net calorific value as received of the construction waste was assumed to be 1,59 kWh kWh/kg and efficiency of heat and power co-generation was 90 %.

    - Recycling: Benefits from the recycling of metal materials were included to the assessment. Only share of virgin raw materials in the product composition were included to the component D.

        - Glass: Benefits from avoided primary glass in the foam glass production due to the recycling of glass at the end of life.

        - Aluminium and steel components: Benefits from avoided primary metal production due to the recycling of materials at the end of life.

        - Metal: Benefits from avoided primary metal production due to the recycling of materials end of life was included.

AVERAGES AND VARIABILITY

The quality requirements for the life cycle assessment were set according to the EN ISO 14044 standard (4.2.3.6) and EN 15804 standard (6.3.7).

This LCA study follows the standard EN 15804:2012+A2:2019 and PCR and no decisions are made based on the values.

PROCEDURED FOR COLLECTION PROCESS SPECIFIC DATA

Production specific data was collected directly from manufacturer's production plant. The data represents the production of the studied product at the plant from the materials transported to the facility and represents 1 year average. The data represents year 2023, which was the latest year with full year data. All gathered data was used without excluding categories in advance following the system boundaries set in earlier chapters.

CRITERIA FOR CHOOSING THE GENERIC DATA

Generic data that was used for upstream and downstream processes represents complementary data from Ecoinvent 3.10 database.

The datasets were chosen to represent the studied system as closely as possible. When available supplier specific information was used for instance in form of EN 15804 EPDs or emissions profile of local energy supplier. When supplier specific information was not available the information sources were chosen based on their technical and geographical representativeness. Only when country specific or European data has not been available has global level data been used (concerns mainly data from Ecoinvent 3.10)

As up-to-date data as possible was chosen and no more than five-year-old for producer specific data and ten years for generic data was used.

ENVIRONMENTAL IMPACT DATA

TEMPERED GLASS

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,19E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	4,66E-04	9,51E-03	-2,23E-02
GWP – fossil	kg CO_2e	1,19E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	4,64E-04	9,51E-03	-2,23E-02
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	3,58E-04	1,56E-05	0,00E+00	4,80E-08	3,61E-06	1,18E-06	2,62E-06	-2,54E-05
Ozone depletion pot.	kg CFC_{-11}e	3,25E-08	5,15E-10	0,00E+00	7,18E-12	1,19E-10	6,76E-12	2,98E-10	-1,03E-10
Acidification potential	mol H^+e	1,09E-02	1,19E-04	0,00E+00	4,23E-06	2,75E-05	2,70E-06	1,05E-04	-1,13E-04
EP-freshwater[3)]	kg Pe	1,32E-04	2,72E-06	0,00E+00	1,35E-08	6,28E-07	1,92E-07	1,60E-05	-6,78E-06
EP-marine	kg Ne	1,80E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	7,96E-07	2,61E-05	-1,75E-05
EP-terrestrial	mol Ne	2,18E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	8,48E-06	2,81E-04	-2,63E-04
POCP (“smog”)	kg NMVOCe	6,19E-03	1,75E-04	0,00E+00	6,41E-06	4,06E-05	2,84E-06	1,03E-04	-5,22E-05
ADP-minerals & metals	kg Sbe	8,75E-06	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,71E-09	1,87E-08	-2,25E-07
ADP-fossil resources	MJ	1,38E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Water use[2)]	m^3e depr.	2,79E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,83E-05	1,34E-03	-9,67E-03

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	7,29E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	3,23E-04	4,65E-03	-2,69E-02
Renew. PER as material	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
Total use of renew. PER	MJ	7,29E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	3,23E-04	4,65E-03	-2,69E-02
Non-re. PER as energy	MJ	1,35E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Non-re. PER as material	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
Total use of non-ren. PER	MJ	1,35E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Secondary materials	kg	5,34E-03	2,15E-04	0,00E+00	2,55E-06	4,99E-05	2,56E-06	7,36E-05	4,06E-02
Renew. secondary fuels	MJ	9,82E-04	2,74E-06	0,00E+00	6,66E-09	6,33E-07	3,15E-08	1,33E-06	-6,10E-06
Non-ren. secondary fuels	MJ	5,43E-14	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^3	7,49E-03	7,48E-05	0,00E+00	4,05E-07	1,73E-05	-2,21E-05	-2,67E-03	-2,54E-04

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,31E-02	8,57E-04	0,00E+00	6,82E-06	1,98E-04	2,30E-05	3,73E-04	-1,40E-03
Non-hazardous waste	kg	1,34E+00	1,59E-02	0,00E+00	9,30E-05	3,67E-03	3,19E-02	3,40E+00	-3,17E-02
Radioactive waste	kg	1,43E-05	1,10E-07	0,00E+00	6,73E-10	2,54E-08	4,59E-09	7,25E-08	-4,20E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	1,48E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E-02	0,00E+00	0,00E+00
Materials for energy recovery	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
Exported energy	MJ	6,83E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

LAMINATED GLASS

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,08E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	4,66E-04	9,51E-03	-2,23E-02
GWP – fossil	kg CO_2e	1,08E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	4,64E-04	9,51E-03	-2,23E-02
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	4,15E-04	1,56E-05	0,00E+00	4,80E-08	3,61E-06	1,18E-06	2,62E-06	-2,54E-05
Ozone depletion pot.	kg CFC_{-11}e	5,42E-08	5,15E-10	0,00E+00	7,18E-12	1,19E-10	6,76E-12	2,98E-10	-1,03E-10
Acidification potential	mol H^+e	9,98E-03	1,19E-04	0,00E+00	4,23E-06	2,75E-05	2,70E-06	1,05E-04	-1,13E-04
EP-freshwater[3)]	kg Pe	1,48E-04	2,72E-06	0,00E+00	1,35E-08	6,28E-07	1,92E-07	1,60E-05	-6,78E-06
EP-marine	kg Ne	1,64E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	7,96E-07	2,61E-05	-1,75E-05
EP-terrestrial	mol Ne	1,97E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	8,48E-06	2,81E-04	-2,63E-04
POCP (“smog”)	kg NMVOCe	5,67E-03	1,75E-04	0,00E+00	6,41E-06	4,06E-05	2,84E-06	1,03E-04	-5,22E-05
ADP-minerals & metals	kg Sbe	8,83E-06	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,71E-09	1,87E-08	-2,25E-07
ADP-fossil resources	MJ	1,31E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Water use[2)]	m^3e depr.	3,02E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,83E-05	1,34E-03	-9,67E-03

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	7,81E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	3,23E-04	4,65E-03	-2,69E-02
Renew. PER as material	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
Total use of renew. PER	MJ	7,81E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	3,23E-04	4,65E-03	-2,69E-02
Non-re. PER as energy	MJ	1,22E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Non-re. PER as material	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
Total use of non-ren. PER	MJ	1,22E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Secondary materials	kg	3,34E-03	2,15E-04	0,00E+00	2,55E-06	4,99E-05	2,56E-06	7,36E-05	4,06E-02
Renew. secondary fuels	MJ	2,00E-03	2,74E-06	0,00E+00	6,66E-09	6,33E-07	3,15E-08	1,33E-06	-6,10E-06
Non-ren. secondary fuels	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
Use of net fresh water	m^3	7,95E-03	7,48E-05	0,00E+00	4,05E-07	1,73E-05	-2,21E-05	-2,67E-03	-2,54E-04

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,67E-02	8,57E-04	0,00E+00	6,82E-06	1,98E-04	2,30E-05	3,73E-04	-1,40E-03
Non-hazardous waste	kg	2,47E+00	1,59E-02	0,00E+00	9,30E-05	3,67E-03	3,19E-02	3,40E+00	-3,17E-02
Radioactive waste	kg	1,24E-05	1,10E-07	0,00E+00	6,73E-10	2,54E-08	4,59E-09	7,25E-08	-4,20E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E-02	0,00E+00	0,00E+00
Materials for energy recovery	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
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RAILING AND BALCONY GLASS PROFILE

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	7,42E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	1,85E-01	1,00E-03	-1,85E+01
GWP – fossil	kg CO_2e	7,36E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	1,85E-01	1,00E-03	-1,85E+01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	5,85E-02	1,56E-05	0,00E+00	4,80E-08	3,61E-06	9,48E-05	2,76E-07	-1,61E-03
Ozone depletion pot.	kg CFC_{-11}e	6,09E-07	5,15E-10	0,00E+00	7,18E-12	1,19E-10	1,72E-09	3,14E-11	-5,42E-08
Acidification potential	mol H^+e	2,98E-02	1,19E-04	0,00E+00	4,23E-06	2,75E-05	6,50E-04	1,10E-05	-1,77E-01
EP-freshwater[3)]	kg Pe	8,19E-04	2,72E-06	0,00E+00	1,35E-08	6,28E-07	4,97E-05	1,68E-06	-9,31E-03
EP-marine	kg Ne	3,24E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	7,99E-05	2,75E-06	-2,35E-02
EP-terrestrial	mol Ne	3,33E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	8,97E-04	2,96E-05	-2,36E-01
POCP (“smog”)	kg NMVOCe	2,14E-02	1,75E-04	0,00E+00	6,41E-06	4,06E-05	3,04E-04	1,08E-05	-7,10E-02
ADP-minerals & metals	kg Sbe	3,31E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	4,80E-06	1,96E-09	9,21E-05
ADP-fossil resources	MJ	1,06E+02	5,06E-01	0,00E+00	6,13E-03	1,17E-01	1,18E+00	2,33E-02	-1,82E+02
Water use[2)]	m^3e depr.	2,18E+06	2,50E-03	0,00E+00	1,53E-05	5,79E-04	2,71E-02	1,41E-04	-1,53E+00

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	5,14E+01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,90E-01	4,90E-04	-1,69E+00
Renew. PER as material	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
Total use of renew. PER	MJ	5,14E+01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,90E-01	4,90E-04	-1,69E+00
Non-re. PER as energy	MJ	1,37E+02	5,06E-01	0,00E+00	6,13E-03	1,17E-01	1,18E+00	2,33E-02	-1,82E+02
Non-re. PER as material	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
Total use of non-ren. PER	MJ	1,37E+02	5,06E-01	0,00E+00	6,13E-03	1,17E-01	1,18E+00	2,33E-02	-1,82E+02
Secondary materials	kg	5,47E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	8,61E-04	7,74E-06	1,45E-02
Renew. secondary fuels	MJ	1,51E-02	2,74E-06	0,00E+00	6,66E-09	6,33E-07	2,83E-05	1,40E-07	-2,61E-04
Non-ren. secondary fuels	MJ	3,53E-02	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^3	2,92E-02	7,48E-05	0,00E+00	4,05E-07	1,73E-05	7,92E-04	-2,81E-04	-1,97E-02

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	6,36E-01	8,57E-04	0,00E+00	6,82E-06	1,98E-04	1,84E-02	3,93E-05	-3,95E+00
Non-hazardous waste	kg	4,19E+00	1,59E-02	0,00E+00	9,30E-05	3,67E-03	4,97E-01	3,57E-01	-4,34E+01
Radioactive waste	kg	7,17E-04	1,10E-07	0,00E+00	6,73E-10	2,54E-08	2,97E-06	7,63E-09	-2,28E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	3,01E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,00E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,11E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	6,19E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RAILING ACCESSORY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,16E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	1,28E-01	6,31E-04	-5,33E+00
GWP – fossil	kg CO_2e	4,15E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	1,28E-01	6,30E-04	-5,33E+00
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,30E-02	1,56E-05	0,00E+00	4,80E-08	3,61E-06	4,39E-05	1,74E-07	-2,71E-04
Ozone depletion pot.	kg CFC_{-11}e	8,11E-08	5,15E-10	0,00E+00	7,18E-12	1,19E-10	6,76E-10	1,98E-11	-1,68E-08
Acidification potential	mol H^+e	2,61E-02	1,19E-04	0,00E+00	4,23E-06	2,75E-05	3,65E-04	6,95E-06	-4,78E-02
EP-freshwater[3)]	kg Pe	9,65E-04	2,72E-06	0,00E+00	1,35E-08	6,29E-07	2,29E-05	1,06E-06	-2,71E-03
EP-marine	kg Ne	3,81E-03	3,91E-05	0,00E+00	1,96E-06	9,05E-06	6,94E-05	1,73E-06	-6,38E-03
EP-terrestrial	mol Ne	4,03E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	7,59E-04	1,86E-05	-6,66E-02
POCP (“smog”)	kg NMVOCe	1,28E-02	1,75E-04	0,00E+00	6,41E-06	4,06E-05	2,32E-04	6,82E-06	-2,01E-02
ADP-minerals & metals	kg Sbe	8,21E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	2,33E-06	1,24E-09	1,42E-05
ADP-fossil resources	MJ	4,88E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	5,22E-01	1,47E-02	-5,26E+01
Water use[2)]	m^3e depr.	-3,22E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,50E-02	8,87E-05	-2,83E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	8,98E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	8,79E-02	3,09E-04	-1,33E+00
Renew. PER as material	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
Total use of renew. PER	MJ	8,98E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	8,79E-02	3,09E-04	-1,33E+00
Non-re. PER as energy	MJ	5,09E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-4,66E-01	1,47E-02	-5,26E+01
Non-re. PER as material	MJ	9,51E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-9,03E-01	-4,75E-02	0,00E+00
Total use of non-ren. PER	MJ	5,19E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-1,37E+00	-3,29E-02	-5,26E+01
Secondary materials	kg	5,23E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,85E-04	4,88E-06	4,25E-01
Renew. secondary fuels	MJ	5,83E-04	2,74E-06	0,00E+00	6,66E-09	6,34E-07	1,94E-05	8,83E-08	-1,43E-04
Non-ren. secondary fuels	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
Use of net fresh water	m^3	3,89E-02	7,48E-05	0,00E+00	4,05E-07	1,73E-05	3,87E-04	-1,77E-04	-2,56E-02

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	5,39E-01	8,57E-04	0,00E+00	6,82E-06	1,99E-04	7,22E-03	2,47E-05	-1,40E+00
Non-hazardous waste	kg	5,95E+00	1,59E-02	0,00E+00	9,30E-05	3,67E-03	2,07E-01	2,25E-01	-2,43E+00
Radioactive waste	kg	4,63E-04	1,10E-07	0,00E+00	6,73E-10	2,54E-08	1,22E-06	4,81E-09	-6,29E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	1,96E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,10E-01	0,00E+00	0,00E+00
Materials for energy recovery	kg	4,40E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,72E-02	0,00E+00	0,00E+00
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

BALCONY ACCESSORY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,05E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,19E+00	4,68E-04	-7,01E-01
GWP – fossil	kg CO_2e	4,04E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,19E+00	4,68E-04	-7,00E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	3,38E-03	1,56E-05	0,00E+00	4,80E-08	3,62E-06	1,79E-05	1,29E-07	-1,03E-03
Ozone depletion pot.	kg CFC_{-11}e	8,98E-08	5,15E-10	0,00E+00	7,18E-12	1,19E-10	8,18E-10	1,47E-11	-8,35E-09
Acidification potential	mol H^+e	1,47E-02	1,19E-04	0,00E+00	4,23E-06	2,76E-05	5,08E-04	5,17E-06	-4,96E-03
EP-freshwater[3)]	kg Pe	1,08E-03	2,72E-06	0,00E+00	1,35E-08	6,29E-07	7,33E-06	7,86E-07	-4,39E-04
EP-marine	kg Ne	3,06E-03	3,91E-05	0,00E+00	1,96E-06	9,05E-06	2,86E-04	1,29E-06	-6,52E-04
EP-terrestrial	mol Ne	3,07E-02	4,25E-04	0,00E+00	2,15E-05	9,85E-05	2,44E-03	1,38E-05	-6,53E-03
POCP (“smog”)	kg NMVOCe	1,49E-02	1,75E-04	0,00E+00	6,41E-06	4,06E-05	6,14E-04	5,06E-06	-2,05E-03
ADP-minerals & metals	kg Sbe	2,30E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	2,12E-07	9,19E-10	-1,03E-07
ADP-fossil resources	MJ	8,24E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	4,37E-01	1,09E-02	-1,13E+01
Water use[2)]	m^3e depr.	1,49E+00	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,44E-01	6,59E-05	-1,82E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	5,59E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,95E-02	2,29E-04	-2,51E+00
Renew. PER as material	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
Total use of renew. PER	MJ	5,59E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,95E-02	2,29E-04	-2,51E+00
Non-re. PER as energy	MJ	5,89E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-3,30E+01	1,09E-02	-1,13E+01
Non-re. PER as material	MJ	2,34E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-2,23E+01	-1,17E+00	0,00E+00
Total use of non-ren. PER	MJ	8,24E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-5,53E+01	-1,16E+00	-1,13E+01
Secondary materials	kg	4,74E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,01E-04	3,62E-06	3,39E-02
Renew. secondary fuels	MJ	1,50E-02	2,74E-06	0,00E+00	6,66E-09	6,34E-07	1,33E-05	6,56E-08	6,83E-06
Non-ren. secondary fuels	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
Use of net fresh water	m^3	3,86E-02	7,48E-05	0,00E+00	4,05E-07	1,73E-05	2,48E-03	-1,32E-04	-9,68E-03

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,84E-01	8,57E-04	0,00E+00	6,82E-06	1,99E-04	3,78E-02	1,84E-05	-1,75E-02
Non-hazardous waste	kg	1,04E+01	1,59E-02	0,00E+00	9,30E-05	3,68E-03	1,02E+00	1,67E-01	-1,59E+00
Radioactive waste	kg	1,46E-04	1,10E-07	0,00E+00	6,73E-10	2,54E-08	2,21E-07	3,57E-09	-5,56E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,42E-02	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,20E-01	0,00E+00	0,00E+00
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

SEAL AND SEAL BODY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,64E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,26E+00	5,01E-04	-8,51E-01
GWP – fossil	kg CO_2e	3,64E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	2,26E+00	5,00E-04	-8,50E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	3,36E-03	1,56E-05	0,00E+00	4,80E-08	3,61E-06	1,75E-05	1,38E-07	-1,13E-03
Ozone depletion pot.	kg CFC_{-11}e	1,11E-06	5,15E-10	0,00E+00	7,18E-12	1,19E-10	8,34E-10	1,57E-11	-9,30E-09
Acidification potential	mol H^+e	1,73E-02	1,19E-04	0,00E+00	4,23E-06	2,75E-05	5,15E-04	5,52E-06	-5,65E-03
EP-freshwater[3)]	kg Pe	8,96E-04	2,72E-06	0,00E+00	1,35E-08	6,28E-07	7,05E-06	8,40E-07	-5,09E-04
EP-marine	kg Ne	3,38E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	2,93E-04	1,38E-06	-7,95E-04
EP-terrestrial	mol Ne	3,56E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	2,50E-03	1,48E-05	-7,93E-03
POCP (“smog”)	kg NMVOCe	1,42E-02	1,75E-04	0,00E+00	6,41E-06	4,06E-05	6,27E-04	5,41E-06	-2,53E-03
ADP-minerals & metals	kg Sbe	2,93E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,62E-07	9,82E-10	-8,56E-07
ADP-fossil resources	MJ	6,01E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	4,40E-01	1,16E-02	-1,30E+01
Water use[2)]	m^3e depr.	4,35E+00	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,49E-01	7,04E-05	-2,34E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	5,26E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,81E-02	2,45E-04	-2,71E+00
Renew. PER as material	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
Total use of renew. PER	MJ	5,26E+00	6,94E-03	0,00E+00	3,88E-05	1,61E-03	1,81E-02	2,45E-04	-2,71E+00
Non-re. PER as energy	MJ	4,73E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-3,41E+01	1,16E-02	-1,30E+01
Non-re. PER as material	MJ	1,30E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,24E+01	-6,51E-01	0,00E+00
Total use of non-ren. PER	MJ	6,03E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	-4,65E+01	-6,40E-01	-1,30E+01
Secondary materials	kg	1,06E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,01E-04	3,87E-06	-1,31E-03
Renew. secondary fuels	MJ	4,53E-03	2,74E-06	0,00E+00	6,66E-09	6,33E-07	1,32E-05	7,00E-08	-6,22E-06
Non-ren. secondary fuels	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
Use of net fresh water	m^3	1,03E-01	7,48E-05	0,00E+00	4,05E-07	1,73E-05	2,55E-03	-1,41E-04	-9,86E-03

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,21E-01	8,57E-04	0,00E+00	6,82E-06	1,98E-04	3,89E-02	1,96E-05	-6,57E-02
Non-hazardous waste	kg	6,88E+00	1,59E-02	0,00E+00	9,30E-05	3,67E-03	1,05E+00	1,79E-01	-2,49E+00
Radioactive waste	kg	4,97E-05	1,10E-07	0,00E+00	6,73E-10	2,54E-08	2,05E-07	3,82E-09	-5,86E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	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
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

MOULDINGS AND SHEET METAL

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,60E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,15E-02	5,01E-04	-6,54E-01
GWP – fossil	kg CO_2e	2,60E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	2,15E-02	5,00E-04	-6,55E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	4,12E-04	1,56E-05	0,00E+00	4,80E-08	3,61E-06	2,65E-05	1,38E-07	2,22E-04
Ozone depletion pot.	kg CFC_{-11}e	2,47E-10	5,15E-10	0,00E+00	7,18E-12	1,19E-10	2,89E-10	1,57E-11	-3,10E-09
Acidification potential	mol H^+e	6,41E-03	1,19E-04	0,00E+00	4,23E-06	2,75E-05	2,55E-04	5,52E-06	-2,19E-03
EP-freshwater[3)]	kg Pe	2,39E-06	2,72E-06	0,00E+00	1,35E-08	6,28E-07	1,38E-05	8,40E-07	-3,53E-04
EP-marine	kg Ne	1,48E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	5,66E-05	1,38E-06	-3,42E-04
EP-terrestrial	mol Ne	1,60E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	6,39E-04	1,48E-05	-6,52E-03
POCP (“smog”)	kg NMVOCe	5,65E-03	1,75E-04	0,00E+00	6,41E-06	4,06E-05	1,89E-04	5,41E-06	-2,02E-03
ADP-minerals & metals	kg Sbe	3,59E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,52E-06	9,82E-10	-1,20E-05
ADP-fossil resources	MJ	3,09E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-6,31E+00
Water use[2)]	m^3e depr.	1,33E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,18E-03	7,04E-05	1,48E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	4,08E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	5,37E-02	2,45E-04	-1,02E+00
Renew. PER as material	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
Total use of renew. PER	MJ	4,08E-01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	5,37E-02	2,45E-04	-1,02E+00
Non-re. PER as energy	MJ	3,04E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-6,31E+00
Non-re. PER as material	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
Total use of non-ren. PER	MJ	3,04E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-6,31E+00
Secondary materials	kg	2,11E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	3,52E-04	3,87E-06	5,26E-01
Renew. secondary fuels	MJ	1,31E-06	2,74E-06	0,00E+00	6,66E-09	6,33E-07	1,63E-05	7,00E-08	-9,39E-05
Non-ren. secondary fuels	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
Use of net fresh water	m^3	1,53E+00	7,48E-05	0,00E+00	4,05E-07	1,73E-05	1,53E-04	-1,41E-04	-2,53E-02

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	4,11E-04	8,57E-04	0,00E+00	6,82E-06	1,98E-04	1,88E-03	1,96E-05	-4,64E-01
Non-hazardous waste	kg	7,59E-03	1,59E-02	0,00E+00	9,30E-05	3,67E-03	6,80E-02	1,79E-01	1,11E+01
Radioactive waste	kg	5,25E-08	1,10E-07	0,00E+00	6,73E-10	2,54E-08	6,27E-07	3,82E-09	-2,90E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy recovery	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
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

FASTENING ACCESSORY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,37E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,15E-02	5,01E-04	-7,36E-01
GWP – fossil	kg CO_2e	4,37E+00	3,49E-02	0,00E+00	4,69E-04	8,07E-03	2,15E-02	5,00E-04	-7,36E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	2,08E-03	1,56E-05	0,00E+00	4,80E-08	3,61E-06	2,65E-05	1,38E-07	2,50E-04
Ozone depletion pot.	kg CFC_{-11}e	1,81E-09	5,15E-10	0,00E+00	7,18E-12	1,19E-10	2,89E-10	1,57E-11	-3,49E-09
Acidification potential	mol H^+e	3,12E-02	1,19E-04	0,00E+00	4,23E-06	2,75E-05	2,55E-04	5,52E-06	-2,47E-03
EP-freshwater[3)]	kg Pe	1,63E-05	2,72E-06	0,00E+00	1,35E-08	6,28E-07	1,38E-05	8,40E-07	-3,97E-04
EP-marine	kg Ne	3,27E-03	3,91E-05	0,00E+00	1,96E-06	9,04E-06	5,66E-05	1,38E-06	-3,85E-04
EP-terrestrial	mol Ne	3,62E-02	4,25E-04	0,00E+00	2,15E-05	9,84E-05	6,39E-04	1,48E-05	-7,33E-03
POCP (“smog”)	kg NMVOCe	1,04E-02	1,75E-04	0,00E+00	6,41E-06	4,06E-05	1,89E-04	5,41E-06	-2,27E-03
ADP-minerals & metals	kg Sbe	1,72E-04	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,52E-06	9,82E-10	-1,35E-05
ADP-fossil resources	MJ	5,63E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-7,10E+00
Water use[2)]	m^3e depr.	7,90E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,18E-03	7,04E-05	1,67E-01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,47E+01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	5,37E-02	2,45E-04	-1,15E+00
Renew. PER as material	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
Total use of renew. PER	MJ	1,47E+01	6,94E-03	0,00E+00	3,88E-05	1,61E-03	5,37E-02	2,45E-04	-1,15E+00
Non-re. PER as energy	MJ	5,64E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-7,10E+00
Non-re. PER as material	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
Total use of non-ren. PER	MJ	5,64E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-7,10E+00
Secondary materials	kg	7,68E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	3,52E-04	3,87E-06	5,92E-01
Renew. secondary fuels	MJ	8,70E-06	2,74E-06	0,00E+00	6,66E-09	6,33E-07	1,63E-05	7,00E-08	-1,06E-04
Non-ren. secondary fuels	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
Use of net fresh water	m^3	2,25E-02	7,48E-05	0,00E+00	4,05E-07	1,73E-05	1,53E-04	-1,41E-04	-2,84E-02

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,88E-03	8,57E-04	0,00E+00	6,82E-06	1,98E-04	1,88E-03	1,96E-05	-5,22E-01
Non-hazardous waste	kg	6,10E-01	1,59E-02	0,00E+00	9,30E-05	3,67E-03	6,80E-02	1,79E-01	1,25E+01
Radioactive waste	kg	1,60E-03	1,10E-07	0,00E+00	6,73E-10	2,54E-08	6,27E-07	3,82E-09	-3,26E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	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
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy recovery	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
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

PRODUCTION FACILITY

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,61E+00	6,69E-02	3,84E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – fossil	kg CO_2e	6,10E+00	6,69E-02	3,47E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – biogenic	kg CO_2e	-3,50E+00	0,00E+00	3,50E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	6,41E-03	2,99E-05	1,57E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Ozone depletion pot.	kg CFC_{-11}e	2,62E-07	9,87E-10	1,03E-09	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Acidification potential	mol H^+e	4,69E-02	2,28E-04	3,89E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-freshwater[3)]	kg Pe	5,75E-04	5,21E-06	1,28E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-marine	kg Ne	9,49E-03	7,49E-05	1,46E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EP-terrestrial	mol Ne	1,13E-01	8,15E-04	1,47E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
POCP (“smog”)	kg NMVOCe	3,20E-02	3,36E-04	4,70E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-minerals & metals	kg Sbe	1,96E-05	1,87E-07	2,15E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-fossil resources	MJ	9,56E+01	9,71E-01	1,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Water use[2)]	m^3e depr.	2,98E+00	4,79E-03	2,68E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	5,64E+01	1,33E-02	-1,16E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renew. PER as material	MJ	3,01E+01	0,00E+00	-3,01E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	8,65E+01	1,33E-02	-4,17E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-re. PER as energy	MJ	8,66E+01	9,71E-01	-3,25E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-re. PER as material	MJ	5,63E+00	0,00E+00	-5,63E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-ren. PER	MJ	9,22E+01	9,71E-01	-8,88E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Secondary materials	kg	1,16E-01	4,13E-04	6,09E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renew. secondary fuels	MJ	3,43E-01	5,25E-06	8,31E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-ren. secondary fuels	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
Use of net fresh water	m^3	5,51E-02	1,43E-04	5,51E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,90E-01	1,64E-03	7,89E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste	kg	1,21E+01	3,04E-02	2,17E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Radioactive waste	kg	4,04E-04	2,10E-07	8,82E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	6,76E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	1,75E+00	0,00E+00	1,12E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	3,27E-01	0,00E+00	1,17E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	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

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity, Finland, residual mix (One Click LCA), EN15804+A2, Finland, 2022.
Electricity kg CO_2e / kWh	0.68 kg CO2e / kWh

Scenario parameter	Value
District heat data source and quality	Heat and power co-generation, wood chips, 6667 kW, state-of-the-art 2014 (Reference product: electricity, high voltage), Europe Heat and power co-generation, hard coal (Reference product: heat, district or industrial, other than natural gas), Finland Heat production, light fuel oil, at industrial furnace 1MW (Reference product: heat, district or industrial, other than natural gas), World EN15804+A2, 2024, Ecoinvent 3.10
District heat kg CO_2e / kWh	0.129 kg CO2e / kWh

End of life scenario documentation for products per 1 kg of material

		Laminated glass	Tempered glass	Railing profile and balcony glass	Moldings and sheet metal
Process flow					
Collection process specified by type	kg collected separately	1,0	1,0	1,0	1,0
	kg collected with mixed construction waste				
Recovery system specified by type	kg for reuse				
	kg for recycling	0,05	0,05	0,90	0,90
	kg for energy recovery				
Disposal specified by type	kg material for final deposition	0,95	0,95	0,10	0,10
Assumptions for scenario development	units as appropriate	Waste materials are transported 75 km by truck to recycling facility with a truck capacity utilization of 45%			

			Railing accessory	Balcony accessory	Seal and seal body	Fastening accessory
Process flow						
Collection process specified by type	kg collected separately		1,0	1,0	1,0	1,0
	kg collected with mixed construction waste					
Recovery system specified by type	kg for reuse					
	kg for recycling	Aluminium	0,23			
		Steel	0,68	0,03		0,95
	kg for energy recovery		0,03	0,92	0,95	
Disposal specified by type	kg material for final deposition		0,06	0,05	0,5	0,05
Assumptions for scenario development	units as appropriate		Waste materials are transported 75 km by truck to recycling facility with a truck capacity utilization of 45%			

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EN 15804:2012+A2:2021 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

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VERIFICATION STATEMENT

Verified according to the requirements of EN 15804+A2 (product category rules) Independent verification of the declaration, according to EN ISO 14025:2010	
☒ External	☐ Internal
Third party verifier:  Mari Kirss, Rangi Maja OÜ, Tallinn Estonia, 28.1.2025	

ANNEX 1: REFERENCE PRODUCTION EPD RESULTS

RIIKKU POST RAILING, 5 M X 1,36 M

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	5,50E+02	5,94E+00	1,92E+01	7,53E-02	1,30E+00	1,67E+01	9,71E-01	-9,57E+02
GWP – fossil	kg CO_2e	5,64E+02	5,94E+00	1,74E+00	7,53E-02	1,30E+00	1,67E+01	9,71E-01	-9,57E+02
GWP – biogenic	kg CO_2e	-1,75E+01	0,00E+00	1,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	3,06E+00	2,65E-03	7,85E-04	7,70E-06	5,79E-04	5,29E-03	2,67E-04	-8,57E-02
Ozone depletion pot.	kg CFC_{-11}e	3,83E-05	8,76E-08	5,15E-09	1,15E-09	1,91E-08	9,41E-08	3,04E-08	-2,84E-06
Acidification potential	mol H^+e	3,05E+00	2,02E-02	1,95E-03	6,79E-04	4,41E-03	3,77E-02	1,07E-02	-9,10E+00
EP-freshwater[3)]	kg Pe	6,47E-02	4,63E-04	6,40E-05	2,17E-06	1,01E-04	2,72E-03	1,63E-03	-4,82E-01
EP-marine	kg Ne	4,26E-01	6,65E-03	7,30E-04	3,15E-04	1,45E-03	5,65E-03	2,66E-03	-1,21E+00
EP-terrestrial	mol Ne	4,79E+00	7,23E-02	7,35E-03	3,45E-03	1,58E-02	6,09E-02	2,87E-02	-1,22E+01
POCP (“smog”)	kg NMVOCe	1,98E+00	2,98E-02	2,35E-03	1,03E-03	6,52E-03	1,97E-02	1,05E-02	-3,66E+00
ADP-minerals & metals	kg Sbe	3,64E-03	1,66E-05	1,08E-06	2,70E-08	3,61E-06	2,62E-04	1,91E-06	4,55E-03
ADP-fossil resources	MJ	7,76E+03	8,61E+01	5,00E+00	9,84E-01	1,88E+01	6,53E+01	2,26E+01	-9,43E+03
Water use[2)]	m^3e depr.	1,08E+08	4,25E-01	1,34E-01	2,46E-03	9,29E-02	1,90E+00	1,37E-01	-7,82E+01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	3,00E+03	1,18E+00	-5,80E+01	6,23E-03	2,58E-01	1,04E+01	4,75E-01	-1,09E+02
Renew. PER as material	MJ	1,51E+02	0,00E+00	-1,51E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	3,15E+03	1,18E+00	-2,09E+02	6,23E-03	2,58E-01	1,04E+01	4,75E-01	-1,09E+02
Non-re. PER as energy	MJ	9,19E+03	8,61E+01	-1,63E+01	9,84E-01	1,88E+01	-4,10E+01	2,26E+01	-9,43E+03
Non-re. PER as material	MJ	7,17E+01	0,00E+00	-2,82E+01	0,00E+00	0,00E+00	-4,16E+01	-2,18E+00	0,00E+00
Total use of non-ren. PER	MJ	9,26E+03	8,61E+01	-4,44E+01	9,84E-01	1,88E+01	-8,26E+01	2,04E+01	-9,43E+03
Secondary materials	kg	9,38E+00	3,66E-02	3,05E-03	4,09E-04	8,01E-03	4,91E-02	7,51E-03	1,05E+01
Renew. secondary fuels	MJ	2,57E+00	4,66E-04	4,16E-05	1,07E-06	1,02E-04	1,66E-03	1,36E-04	-1,50E-02
Non-ren. secondary fuels	MJ	1,75E+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^3	9,14E+00	1,27E-02	2,76E-03	6,50E-05	2,78E-03	4,78E-02	-2,73E-01	-1,34E+00

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	3,91E+01	1,46E-01	3,95E-02	1,09E-03	3,18E-02	1,08E+00	3,81E-02	-2,07E+02
Non-hazardous waste	kg	4,55E+02	2,70E+00	1,09E+00	1,49E-02	5,89E-01	3,24E+01	3,47E+02	-2,11E+03
Radioactive waste	kg	4,49E-02	1,87E-05	4,41E-06	1,08E-07	4,08E-06	1,59E-04	7,40E-06	-1,19E-02

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	3,38E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	9,02E+00	0,00E+00	5,60E+00	0,00E+00	0,00E+00	6,06E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	2,19E+00	0,00E+00	5,85E-01	0,00E+00	0,00E+00	2,92E+00	0,00E+00	0,00E+00
Exported energy	MJ	3,07E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RIIKKU HORIZONTALLY SUPPORTED RAILING (MODEL 12A), 5M X 1,1M

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,93E+02	5,67E+00	1,92E+01	7,17E-02	1,24E+00	1,36E+01	9,63E-01	-8,17E+02
GWP – fossil	kg CO_2e	5,07E+02	5,67E+00	1,74E+00	7,17E-02	1,23E+00	1,36E+01	9,63E-01	-8,17E+02
GWP – biogenic	kg CO_2e	-1,75E+01	0,00E+00	1,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	2,59E+00	2,53E-03	7,85E-04	7,34E-06	5,52E-04	4,57E-03	2,65E-04	-7,24E-02
Ozone depletion pot.	kg CFC_{-11}e	3,19E-05	8,37E-08	5,15E-09	1,10E-09	1,82E-08	8,07E-08	3,02E-08	-2,43E-06
Acidification potential	mol H^+e	2,90E+00	1,93E-02	1,95E-03	6,47E-04	4,20E-03	3,26E-02	1,06E-02	-7,76E+00
EP-freshwater[3)]	kg Pe	6,41E-02	4,42E-04	6,40E-05	2,06E-06	9,60E-05	2,35E-03	1,62E-03	-4,12E-01
EP-marine	kg Ne	4,13E-01	6,35E-03	7,30E-04	3,00E-04	1,38E-03	4,86E-03	2,64E-03	-1,03E+00
EP-terrestrial	mol Ne	4,66E+00	6,91E-02	7,35E-03	3,29E-03	1,50E-02	5,27E-02	2,85E-02	-1,04E+01
POCP (“smog”)	kg NMVOCe	1,83E+00	2,84E-02	2,35E-03	9,80E-04	6,21E-03	1,71E-02	1,04E-02	-3,13E+00
ADP-minerals & metals	kg Sbe	3,61E-03	1,58E-05	1,08E-06	2,57E-08	3,44E-06	2,26E-04	1,89E-06	3,84E-03
ADP-fossil resources	MJ	6,88E+03	8,22E+01	5,00E+00	9,37E-01	1,79E+01	5,62E+01	2,24E+01	-8,05E+03
Water use[2)]	m^3e depr.	8,65E+07	4,06E-01	1,34E-01	2,34E-03	8,85E-02	1,59E+00	1,36E-01	-6,62E+01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	2,54E+03	1,13E+00	-5,80E+01	5,93E-03	2,46E-01	8,94E+00	4,71E-01	-9,51E+01
Renew. PER as material	MJ	1,51E+02	0,00E+00	-1,51E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,69E+03	1,13E+00	-2,09E+02	5,93E-03	2,46E-01	8,94E+00	4,71E-01	-9,51E+01
Non-re. PER as energy	MJ	8,04E+03	8,22E+01	-1,63E+01	9,37E-01	1,79E+01	-2,40E+01	2,24E+01	-8,05E+03
Non-re. PER as material	MJ	6,69E+01	0,00E+00	-2,82E+01	0,00E+00	0,00E+00	-3,69E+01	-1,94E+00	0,00E+00
Total use of non-ren. PER	MJ	8,11E+03	8,22E+01	-4,44E+01	9,37E-01	1,79E+01	-6,10E+01	2,04E+01	-8,05E+03
Secondary materials	kg	1,14E+01	3,49E-02	3,05E-03	3,90E-04	7,63E-03	4,25E-02	7,45E-03	1,11E+01
Renew. secondary fuels	MJ	2,43E+00	4,45E-04	4,16E-05	1,02E-06	9,68E-05	1,45E-03	1,35E-04	-1,31E-02
Non-ren. secondary fuels	MJ	1,40E+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^3	2,94E+00	1,22E-02	2,76E-03	6,19E-05	2,65E-03	4,00E-02	-2,70E-01	-1,22E+00

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	3,73E+01	1,39E-01	3,95E-02	1,04E-03	3,03E-02	9,14E-01	3,78E-02	-1,78E+02
Non-hazardous waste	kg	4,57E+02	2,58E+00	1,09E+00	1,42E-02	5,61E-01	2,79E+01	3,44E+02	-1,76E+03
Radioactive waste	kg	3,96E-02	1,79E-05	4,41E-06	1,03E-07	3,88E-06	1,37E-04	7,34E-06	-1,01E-02

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	3,38E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	9,16E+00	0,00E+00	5,60E+00	0,00E+00	0,00E+00	5,45E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	2,08E+00	0,00E+00	5,85E-01	0,00E+00	0,00E+00	2,21E+00	0,00E+00	0,00E+00
Exported energy	MJ	2,46E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RIIKKU BALCONY GLAZING (ON RAILING AND FULL HEIGHT) 5M X 1,6M

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,83E+02	5,40E+00	1,92E+01	6,81E-02	1,17E+00	1,47E+01	1,09E+00	-5,55E+02
GWP – fossil	kg CO_2e	3,99E+02	5,40E+00	1,74E+00	6,81E-02	1,17E+00	1,47E+01	1,09E+00	-5,55E+02
GWP – biogenic	kg CO_2e	-1,75E+01	0,00E+00	1,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,82E+00	2,41E-03	7,85E-04	6,97E-06	5,24E-04	3,03E-03	3,00E-04	-5,50E-02
Ozone depletion pot.	kg CFC_{-11}e	2,54E-05	7,97E-08	5,15E-09	1,04E-09	1,73E-08	5,53E-08	3,41E-08	-1,66E-06
Acidification potential	mol H^+e	2,41E+00	1,84E-02	1,95E-03	6,14E-04	3,99E-03	2,18E-02	1,20E-02	-5,29E+00
EP-freshwater[3)]	kg Pe	4,59E-02	4,21E-04	6,40E-05	1,96E-06	9,12E-05	1,53E-03	1,83E-03	-2,79E-01
EP-marine	kg Ne	3,58E-01	6,05E-03	7,30E-04	2,85E-04	1,31E-03	3,67E-03	2,98E-03	-7,03E-01
EP-terrestrial	mol Ne	4,12E+00	6,58E-02	7,35E-03	3,12E-03	1,43E-02	3,80E-02	3,21E-02	-7,07E+00
POCP (“smog”)	kg NMVOCe	1,55E+00	2,71E-02	2,35E-03	9,31E-04	5,90E-03	1,20E-02	1,18E-02	-2,12E+00
ADP-minerals & metals	kg Sbe	2,23E-03	1,51E-05	1,08E-06	2,44E-08	3,27E-06	1,44E-04	2,14E-06	2,70E-03
ADP-fossil resources	MJ	5,47E+03	7,83E+01	5,00E+00	8,90E-01	1,70E+01	3,77E+01	2,53E+01	-5,48E+03
Water use[2)]	m^3e depr.	6,47E+07	3,87E-01	1,34E-01	2,22E-03	8,41E-02	1,41E+00	1,53E-01	-4,73E+01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,92E+03	1,07E+00	-5,80E+01	5,63E-03	2,34E-01	5,78E+00	5,32E-01	-6,43E+01
Renew. PER as material	MJ	1,51E+02	0,00E+00	-1,51E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,07E+03	1,07E+00	-2,09E+02	5,63E-03	2,34E-01	5,78E+00	5,32E-01	-6,43E+01
Non-re. PER as energy	MJ	6,24E+03	7,83E+01	-1,63E+01	8,90E-01	1,70E+01	-1,02E+02	2,53E+01	-5,48E+03
Non-re. PER as material	MJ	1,03E+02	0,00E+00	-2,82E+01	0,00E+00	0,00E+00	-7,16E+01	-3,76E+00	0,00E+00
Total use of non-ren. PER	MJ	6,34E+03	7,83E+01	-4,44E+01	8,90E-01	1,70E+01	-1,73E+02	2,15E+01	-5,48E+03
Secondary materials	kg	3,23E+00	3,33E-02	3,05E-03	3,70E-04	7,25E-03	2,76E-02	8,42E-03	5,24E+00
Renew. secondary fuels	MJ	2,31E+00	4,24E-04	4,16E-05	9,67E-07	9,19E-05	9,05E-04	1,52E-04	-8,47E-03
Non-ren. secondary fuels	MJ	1,05E+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^3	2,27E+00	1,16E-02	2,76E-03	5,88E-05	2,51E-03	3,14E-02	-3,05E-01	-6,65E-01

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,39E+01	1,33E-01	3,95E-02	9,90E-04	2,88E-02	7,07E-01	4,27E-02	-1,18E+02
Non-hazardous waste	kg	3,70E+02	2,46E+00	1,09E+00	1,35E-02	5,33E-01	2,26E+01	3,89E+02	-1,30E+03
Radioactive waste	kg	2,59E-02	1,70E-05	4,41E-06	9,77E-08	3,69E-06	8,98E-05	8,29E-06	-7,05E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	3,38E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	8,84E+00	0,00E+00	5,60E+00	0,00E+00	0,00E+00	3,27E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,96E+00	0,00E+00	5,85E-01	0,00E+00	0,00E+00	3,83E+00	0,00E+00	0,00E+00
Exported energy	MJ	1,85E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RIIKKU BALCONY GLAZING (NO RAILING AND FULL HEIGHT) 5M X 2,1M

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	5,57E+02	1,10E+01	1,92E+01	1,43E-01	2,47E+00	1,38E+01	2,63E+00	-5,13E+02
GWP – fossil	kg CO_2e	5,73E+02	1,10E+01	1,74E+00	1,43E-01	2,46E+00	1,38E+01	2,63E+00	-5,13E+02
GWP – biogenic	kg CO_2e	-1,75E+01	0,00E+00	1,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,74E+00	4,91E-03	7,85E-04	1,47E-05	1,10E-03	2,98E-03	7,26E-04	-5,49E-02
Ozone depletion pot.	kg CFC_{-11}e	2,93E-05	1,62E-07	5,15E-09	2,19E-09	3,63E-08	5,20E-08	8,26E-08	-1,54E-06
Acidification potential	mol H^+e	4,11E+00	3,75E-02	1,95E-03	1,29E-03	8,40E-03	2,05E-02	2,91E-02	-4,87E+00
EP-freshwater[3)]	kg Pe	6,51E-02	8,57E-04	6,40E-05	4,12E-06	1,92E-04	1,44E-03	4,43E-03	-2,57E-01
EP-marine	kg Ne	6,42E-01	1,23E-02	7,30E-04	5,99E-04	2,76E-03	3,54E-03	7,23E-03	-6,47E-01
EP-terrestrial	mol Ne	7,59E+00	1,34E-01	7,35E-03	6,57E-03	3,01E-02	3,65E-02	7,78E-02	-6,52E+00
POCP (“smog”)	kg NMVOCe	2,50E+00	5,51E-02	2,35E-03	1,96E-03	1,24E-02	1,15E-02	2,85E-02	-1,96E+00
ADP-minerals & metals	kg Sbe	3,56E-03	3,07E-05	1,08E-06	5,13E-08	6,87E-06	1,32E-04	5,18E-06	2,44E-03
ADP-fossil resources	MJ	7,44E+03	1,59E+02	5,00E+00	1,87E+00	3,57E+01	3,58E+01	6,12E+01	-5,05E+03
Water use[2)]	m^3e depr.	5,93E+07	7,87E-01	1,34E-01	4,67E-03	1,77E-01	1,32E+00	3,71E-01	-4,50E+01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,91E+03	2,19E+00	-5,80E+01	1,18E-02	4,92E-01	5,35E+00	1,29E+00	-6,39E+01
Renew. PER as material	MJ	1,51E+02	0,00E+00	-1,51E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,06E+03	2,19E+00	-2,09E+02	1,18E-02	4,92E-01	5,35E+00	1,29E+00	-6,39E+01
Non-re. PER as energy	MJ	8,08E+03	1,59E+02	-1,63E+01	1,87E+00	3,57E+01	-9,59E+01	6,12E+01	-5,05E+03
Non-re. PER as material	MJ	9,68E+01	0,00E+00	-2,82E+01	0,00E+00	0,00E+00	-6,54E+01	-3,43E+00	0,00E+00
Total use of non-ren. PER	MJ	8,18E+03	1,59E+02	-4,44E+01	1,87E+00	3,57E+01	-1,61E+02	5,78E+01	-5,05E+03
Secondary materials	kg	3,94E+00	6,77E-02	3,05E-03	7,79E-04	1,52E-02	2,58E-02	2,04E-02	1,18E+01
Renew. secondary fuels	MJ	2,43E+00	8,63E-04	4,16E-05	2,03E-06	1,93E-04	8,36E-04	3,68E-04	-8,82E-03
Non-ren. secondary fuels	MJ	9,61E-01	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^3	3,42E+00	2,36E-02	2,76E-03	1,24E-04	5,28E-03	2,53E-02	-7,40E-01	-6,55E-01

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,61E+01	2,70E-01	3,95E-02	2,08E-03	6,05E-02	6,56E-01	1,03E-01	-1,08E+02
Non-hazardous waste	kg	5,75E+02	5,01E+00	1,09E+00	2,84E-02	1,12E+00	2,63E+01	9,42E+02	-1,19E+03
Radioactive waste	kg	2,64E-02	3,46E-05	4,41E-06	2,06E-07	7,76E-06	8,31E-05	2,01E-05	-6,54E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	3,38E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	8,84E+00	0,00E+00	5,60E+00	0,00E+00	0,00E+00	3,86E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,94E+00	0,00E+00	5,85E-01	0,00E+00	0,00E+00	3,62E+00	0,00E+00	0,00E+00
Exported energy	MJ	1,70E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

RIIKKU TERRACE GLAZING, 4M X 2M

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,84E+02	5,24E+00	1,54E+01	6,68E-02	1,15E+00	1,42E+01	1,05E+00	-5,81E+02
GWP – fossil	kg CO_2e	3,96E+02	5,24E+00	1,39E+00	6,68E-02	1,15E+00	1,42E+01	1,05E+00	-5,81E+02
GWP – biogenic	kg CO_2e	-1,40E+01	0,00E+00	1,40E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	1,90E+00	2,34E-03	6,28E-04	6,84E-06	5,14E-04	3,15E-03	2,91E-04	-5,69E-02
Ozone depletion pot.	kg CFC_{-11}e	2,73E-05	7,73E-08	4,12E-09	1,02E-09	1,70E-08	5,74E-08	3,30E-08	-1,73E-06
Acidification potential	mol H^+e	2,36E+00	1,79E-02	1,56E-03	6,03E-04	3,92E-03	2,25E-02	1,16E-02	-5,53E+00
EP-freshwater[3)]	kg Pe	4,53E-02	4,08E-04	5,12E-05	1,92E-06	8,95E-05	1,60E-03	1,77E-03	-2,92E-01
EP-marine	kg Ne	3,45E-01	5,87E-03	5,84E-04	2,79E-04	1,29E-03	3,67E-03	2,89E-03	-7,35E-01
EP-terrestrial	mol Ne	3,97E+00	6,38E-02	5,88E-03	3,06E-03	1,40E-02	3,83E-02	3,12E-02	-7,39E+00
POCP (“smog”)	kg NMVOCe	1,51E+00	2,63E-02	1,88E-03	9,13E-04	5,78E-03	1,21E-02	1,14E-02	-2,22E+00
ADP-minerals & metals	kg Sbe	2,20E-03	1,46E-05	8,60E-07	2,39E-08	3,21E-06	1,50E-04	2,07E-06	2,83E-03
ADP-fossil resources	MJ	5,41E+03	7,60E+01	4,00E+00	8,73E-01	1,67E+01	3,91E+01	2,45E+01	-5,73E+03
Water use[2)]	m^3e depr.	6,78E+07	3,75E-01	1,07E-01	2,18E-03	8,25E-02	1,40E+00	1,49E-01	-4,94E+01

1)GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) 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 experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO_4e.

USE OF NATURAL RESOURCES

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy	MJ	1,93E+03	1,04E+00	-4,64E+01	5,53E-03	2,29E-01	6,02E+00	5,16E-01	-6,58E+01
Renew. PER as material	MJ	1,20E+02	0,00E+00	-1,20E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	2,05E+03	1,04E+00	-1,67E+02	5,53E-03	2,29E-01	6,02E+00	5,16E-01	-6,58E+01
Non-re. PER as energy	MJ	6,25E+03	7,60E+01	-1,30E+01	8,73E-01	1,67E+01	-8,93E+01	2,45E+01	-5,73E+03
Non-re. PER as material	MJ	7,45E+01	0,00E+00	-2,25E+01	0,00E+00	0,00E+00	-4,96E+01	-2,60E+00	0,00E+00
Total use of non-ren. PER	MJ	6,32E+03	7,60E+01	-3,55E+01	8,73E-01	1,67E+01	-1,39E+02	2,19E+01	-5,73E+03
Secondary materials	kg	3,00E+00	3,23E-02	2,44E-03	3,63E-04	7,11E-03	2,86E-02	8,16E-03	4,98E+00
Renew. secondary fuels	MJ	1,97E+00	4,11E-04	3,32E-05	9,49E-07	9,02E-05	9,37E-04	1,47E-04	-8,81E-03
Non-ren. secondary fuels	MJ	1,10E+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^3	2,30E+00	1,12E-02	2,20E-03	5,77E-05	2,46E-03	3,18E-02	-2,96E-01	-6,84E-01

1)PER = primary energy resources; Non-ren = Non renewable

END OF LIFE – WASTE

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	2,43E+01	1,29E-01	3,16E-02	9,72E-04	2,82E-02	7,20E-01	4,14E-02	-1,23E+02
Non-hazardous waste	kg	3,50E+02	2,39E+00	8,68E-01	1,33E-02	5,23E-01	2,28E+01	3,77E+02	-1,36E+03
Radioactive waste	kg	2,61E-02	1,65E-05	3,53E-06	9,59E-08	3,62E-06	9,37E-05	8,04E-06	-7,35E-03

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	2,70E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	7,10E+00	0,00E+00	4,48E+00	0,00E+00	0,00E+00	3,36E+01	0,00E+00	0,00E+00
Materials for energy recovery	kg	1,65E+00	0,00E+00	4,68E-01	0,00E+00	0,00E+00	3,53E+00	0,00E+00	0,00E+00
Exported energy	MJ	1,93E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BIOGENIC CARBON CONTENT

Biogenic carbon content	Unit (expressed per declared unit)
Biogenic carbon content in product	0 kg
Biogenic carbon content in accompanying packaging	0 kg

NOTE 1 kg biogenic carbon is equivalent to 44/12 kg of CO2

ANNEX 2: EPD RESULTS BY RTS PCR REQUIREMENTS

TEMPERED GLASS, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,19E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	4,66E-04	9,51E-03	-2,23E-02
ADP-minerals & metals	kg Sbe	8,75E-06	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,71E-09	1,87E-08	-2,25E-07
ADP-fossil	MJ	1,38E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Water use	m^3e depr.	2,79E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,83E-05	1,34E-03	-9,67E-03
Secondary materials	kg	5,34E-03	2,15E-04	0,00E+00	2,55E-06	4,99E-05	2,56E-06	7,36E-05	4,06E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LAMINATED GLASS, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,08E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	4,66E-04	9,51E-03	-2,23E-02
ADP-minerals & metals	kg Sbe	8,83E-06	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,71E-09	1,87E-08	-2,25E-07
ADP-fossil	MJ	1,31E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	6,84E-03	2,21E-01	-1,90E-01
Water use	m^3e depr.	3,02E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,83E-05	1,34E-03	-9,67E-03
Secondary materials	kg	3,34E-03	2,15E-04	0,00E+00	2,55E-06	4,99E-05	2,56E-06	7,36E-05	4,06E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RAILING AND BALCONY GLASS PROFILE, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	7,42E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	1,85E-01	1,00E-03	-1,85E+01
ADP-minerals & metals	kg Sbe	3,31E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	4,80E-06	1,96E-09	9,21E-05
ADP-fossil	MJ	1,06E+02	5,06E-01	0,00E+00	6,13E-03	1,17E-01	1,18E+00	2,33E-02	-1,82E+02
Water use	m^3e depr.	2,18E+06	2,50E-03	0,00E+00	1,53E-05	5,79E-04	2,71E-02	1,41E-04	-1,53E+00
Secondary materials	kg	5,47E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	8,61E-04	7,74E-06	1,45E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RAILING ACCESSORY, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,16E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	1,28E-01	6,31E-04	-5,33E+00
ADP-minerals & metals	kg Sbe	8,21E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	2,33E-06	1,24E-09	1,42E-05
ADP-fossil	MJ	4,88E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	5,22E-01	1,47E-02	-5,26E+01
Water use	m^3e depr.	-3,22E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,50E-02	8,87E-05	-2,83E-01
Secondary materials	kg	5,23E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,85E-04	4,88E-06	4,25E-01
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

BALCONY ACCESSORY, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,05E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,19E+00	4,68E-04	-7,01E-01
ADP-minerals & metals	kg Sbe	2,30E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	2,12E-07	9,19E-10	-1,03E-07
ADP-fossil	MJ	8,24E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	4,37E-01	1,09E-02	-1,13E+01
Water use	m^3e depr.	1,49E+00	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,44E-01	6,59E-05	-1,82E-01
Secondary materials	kg	4,74E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,01E-04	3,62E-06	3,39E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SEAL AND SEAL BODY, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,64E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,26E+00	5,01E-04	-8,51E-01
ADP-minerals & metals	kg Sbe	2,93E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,62E-07	9,82E-10	-8,56E-07
ADP-fossil	MJ	6,01E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	4,40E-01	1,16E-02	-1,30E+01
Water use	m^3e depr.	4,35E+00	2,50E-03	0,00E+00	1,53E-05	5,79E-04	1,49E-01	7,04E-05	-2,34E-01
Secondary materials	kg	1,06E-02	2,15E-04	0,00E+00	2,55E-06	4,99E-05	4,01E-04	3,87E-06	-1,31E-03
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

MOULDINGS AND SHEET METAL, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,60E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,15E-02	5,01E-04	-6,54E-01
ADP-minerals & metals	kg Sbe	3,59E-05	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,52E-06	9,82E-10	-1,20E-05
ADP-fossil	MJ	3,09E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-6,31E+00
Water use	m^3e depr.	1,33E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,18E-03	7,04E-05	1,48E-01
Secondary materials	kg	2,11E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	3,52E-04	3,87E-06	5,26E-01
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FASTENING ACCESSORY, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	4,37E+00	3,49E-02	0,00E+00	4,69E-04	8,08E-03	2,15E-02	5,01E-04	-7,36E-01
ADP-minerals & metals	kg Sbe	1,72E-04	9,73E-08	0,00E+00	1,68E-10	2,25E-08	1,52E-06	9,82E-10	-1,35E-05
ADP-fossil	MJ	5,63E+01	5,06E-01	0,00E+00	6,13E-03	1,17E-01	2,88E-01	1,16E-02	-7,10E+00
Water use	m^3e depr.	7,90E-01	2,50E-03	0,00E+00	1,53E-05	5,79E-04	5,18E-03	7,04E-05	1,67E-01
Secondary materials	kg	7,68E-01	2,15E-04	0,00E+00	2,55E-06	4,99E-05	3,52E-04	3,87E-06	5,92E-01
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PRODUCTION FACILITY, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,36E+00	3,49E-02	2,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-minerals & metals	kg Sbe	1,02E-05	9,75E-08	1,12E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ADP-fossil	MJ	4,98E+01	5,06E-01	5,21E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Water use	m^3e depr.	1,55E+00	2,50E-03	1,40E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Secondary materials	kg	6,05E-02	2,15E-04	3,18E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,48	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RIIKKU POST RAILING, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,23E+00	3,49E-02	1,13E-01	4,43E-04	7,62E-03	9,80E-02	5,71E-03	-5,63E+00
ADP-minerals & metals	kg Sbe	2,14E-05	9,73E-08	6,32E-09	1,59E-10	2,12E-08	1,54E-06	1,12E-08	2,67E-05
ADP-fossil	MJ	4,56E+01	5,06E-01	2,94E-02	5,78E-03	1,10E-01	3,84E-01	1,33E-01	-5,54E+01
Water use	m^3e depr.	6,34E+05	2,50E-03	7,88E-04	1,44E-05	5,46E-04	1,12E-02	8,04E-04	-4,60E-01
Secondary materials	kg	5,51E-02	2,15E-04	1,79E-05	2,41E-06	4,71E-05	2,89E-04	4,42E-05	6,16E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,03	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RIIKKU HORIZONTALLY SUPPORTED RAILING (MODEL 12A), RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	3,03E+00	3,49E-02	1,18E-01	4,41E-04	7,60E-03	8,36E-02	5,93E-03	-5,03E+00
ADP-minerals & metals	kg Sbe	2,22E-05	9,73E-08	6,62E-09	1,58E-10	2,12E-08	1,39E-06	1,17E-08	2,36E-05
ADP-fossil	MJ	4,23E+01	5,06E-01	3,08E-02	5,77E-03	1,10E-01	3,46E-01	1,38E-01	-4,95E+01
Water use	m^3e depr.	5,33E+05	2,50E-03	8,25E-04	1,44E-05	5,45E-04	9,78E-03	8,35E-04	-4,08E-01
Secondary materials	kg	7,02E-02	2,15E-04	1,87E-05	2,40E-06	4,70E-05	2,62E-04	4,59E-05	6,80E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,03	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RIIKKU BALCONY GLAZING (ON RAILING AND FULL HEIGHT), RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,47E+00	3,49E-02	1,24E-01	4,40E-04	7,58E-03	9,48E-02	7,03E-03	-3,59E+00
ADP-minerals & metals	kg Sbe	1,44E-05	9,73E-08	6,94E-09	1,58E-10	2,11E-08	9,31E-07	1,38E-08	1,75E-05
ADP-fossil	MJ	3,54E+01	5,06E-01	3,23E-02	5,75E-03	1,10E-01	2,44E-01	1,63E-01	-3,54E+01
Water use	m^3e depr.	4,18E+05	2,50E-03	8,66E-04	1,44E-05	5,43E-04	9,13E-03	9,90E-04	-3,06E-01
Secondary materials	kg	2,08E-02	2,15E-04	1,97E-05	2,39E-06	4,68E-05	1,79E-04	5,44E-05	3,39E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,03	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RIIKKU BALCONY GLAZING (NO RAILING AND FULL HEIGHT), RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	1,77E+00	3,49E-02	6,10E-02	4,55E-04	7,83E-03	4,38E-02	8,36E-03	-1,63E+00
ADP-minerals & metals	kg Sbe	1,13E-05	9,73E-08	3,41E-09	1,63E-10	2,18E-08	4,20E-07	1,64E-08	7,74E-06
ADP-fossil	MJ	2,36E+01	5,06E-01	1,59E-02	5,94E-03	1,13E-01	1,14E-01	1,94E-01	-1,60E+01
Water use	m^3e depr.	1,88E+05	2,50E-03	4,25E-04	1,48E-05	5,61E-04	4,20E-03	1,18E-03	-1,43E-01
Secondary materials	kg	1,25E-02	2,15E-04	9,67E-06	2,47E-06	4,84E-05	8,20E-05	6,47E-05	3,75E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,01	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RIIKKU TERRACE GLAZING, RESULTS AS PER RTS PCR REQUIREMENTS

Impact category	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP – total	kg CO_2e	2,56E+00	3,49E-02	1,02E-01	4,45E-04	7,67E-03	9,46E-02	7,02E-03	-3,87E+00
ADP-minerals & metals	kg Sbe	1,47E-05	9,73E-08	5,73E-09	1,59E-10	2,14E-08	1,00E-06	1,38E-08	1,89E-05
ADP-fossil	MJ	3,60E+01	5,06E-01	2,66E-02	5,82E-03	1,11E-01	2,61E-01	1,63E-01	-3,81E+01
Water use	m^3e depr.	4,51E+05	2,50E-03	7,14E-04	1,45E-05	5,49E-04	9,35E-03	9,90E-04	-3,29E-01
Secondary materials	kg	2,00E-02	2,15E-04	1,62E-05	2,42E-06	4,74E-05	1,91E-04	5,43E-05	3,32E-02
Biogenic carbon content in product	kg C	0,00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biogenic carbon content in packaging	kg C	0,02	N/A	N/A	N/A	N/A	N/A	N/A	N/A