

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Wing™



Varier.

The Norwegian EPD Foundation

Owner of the declaration:

Varier Furniture AS

Product:

Wing™

Declared unit:

1 kg

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 026:2022 Part B for Furniture

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-4878-4136-EN

Registration number:

NEPD-4878-4136-EN

Issue date: 31.08.2023

Valid to: 31.08.2028

EPD Software:

LCA.no EPD generator ID: 68578



General information

Product

Wing™

Program operator:

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00

web: post@epd-norge.no

Declaration number: NEPD-4878-4136-EN

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012 + A2:2019 serves as core PCR NPCR 026:2022 Part B for Furniture

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 kg Wing™

Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

Functional unit:

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i integrated into the company's environmental management system, ii the procedures for use of the EPD tool are approved by EPD-Norway, and iii the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects (no signature required

Owner of the declaration:

Varier Furniture AS Contact person: Michal Klecz Phone: +47 70 24 43 50 e-mail: info@varierfurniture.com

Manufacturer:

Varier Furniture AS

Place of production:

Varier Furniture AS Drammensveien 130 0277 Oslo, Norway

Management system:

Organisation no:

NO 989 804 804

Issue date: 31.08.2023

Valid to: 31.08.2028

Year of study:

2022

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Michal Klecz

Reviewer of company-specific input data and EPD: Bo Quist

Approved:

Håkon Hauan, CEO EPD-Norge



Product

Product description:

Wing™ is a special exception within the Varier collection as it is the only kneeling chair with wheels. Wing™ is many things in one, it is a kneeling chair, it features a swivel base with wheels, it is height adjustable and can be used in any workspace. In essence, it is versatility in the shape of a sitting device. The chair may be used at standard table heights and tabletops up to 90 cm. Wing™ is available in a black cross base and a wide range of upholstery fabrics and colors.

Product specification

Designed by Peter Opsvik in 1984. More information on Wing here: www.varierfurniture.com/collection/wing

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Powder coating	0,03	0,42	0,00	0,00
Rubber, synthetic	0,14	2,02	0,00	0,00
Metal - Steel	3,05	44,04	0,00	0,00
Chemical	0,02	0,24	0,00	0,00
Plastic - Nylon (PA)	0,50	7,22	0,00	0,00
Wood - Plywood	1,79	25,85	0,00	0,00
Plastic - Polyurethane (PUR)	0,27	3,90	0,00	0,00
Plastic - Polyethylene (HDPE)	0,93	13,43	0,00	0,00
Textile - Cotton	0,20	2,89	0,00	0,00
Total	6,93		0,00	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	2,19	86,68	0,79	36,00
Packaging - Plastic	0,09	3,45	0,00	0,00
Packaging - Wood	0,25	9,88	0,00	0,00
Total incl. packaging	9,46		0,79	

Technical data:

Chair Measurement:

W 58 cm x D 58 cm x H 52-72 cm

Box Measurement:

H 27 cm x L 68,5 cm x W 62 cm

Market:

Global, mainly Europe.

Reference service life, product

Longevity is incorporated into Varier's core values. Upholstery and cushions can be replaced over time and Varier products can be passed on to the next generation. Varier offers an extended warranty of 7 years on wooden parts and 5 years on mechanisms. Lifetime is usually longer than 15 years.

Reference service life, building

LCA: Calculation rules

Declared unit:

1 kg Wing™

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.



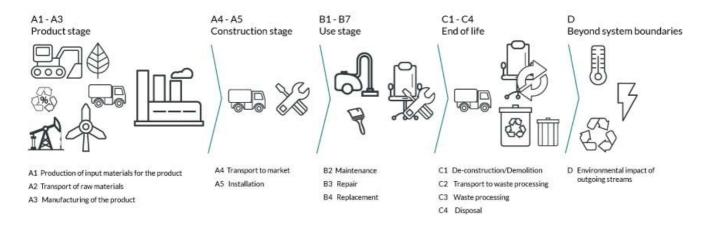
Materials	Source	Data quality	Year
Chemical	ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Packaging - Cardboard	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Plastic - Nylon (PA)	ecoinvent 3.6	Database	2019
Plastic - Polyethylene (HDPE)	ecoinvent 3.6	Database	2019
Plastic - Polyurethane (PUR)	ecoinvent 3.6	Database	2019
Powder coating	Ecoinvent 3.6	Database	2019
Rubber, synthetic	ecoinvent 3.6	Database	2019
Textile - Cotton	ecoinvent 3.6	Database	2019
Packaging - Wood	Modified ecoinvent 3.6	Database	2019
Wood - Plywood	modified ecoinvent 3.6	Database	2019



System boundaries (X=included, MND=module not declared, MNR=module not relevant)

	Product stage			Construction installation stage		Use stage				End of li	fe stage		Beyond the system boundaries			
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
X	X	X	X	X	MND	Χ	Χ	X	MND	MND	MND	X	Χ	X	X	X

System boundary:



Additional technical information:



LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	1250	0,043	l/tkm	53,75
Assembly (A5)	Unit	Value			
Waste, packaging, corrugated board box, to average treatment (kg)	kg	2,03			
Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg)	kg	0,09			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	55	0,043	l/tkm	2,37
Waste processing (C3)	Unit	Value			
Waste treatment per kg Hazardous waste, incineration (kg)	kg	0,02			
Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg)	kg	0,53			
Waste treatment per kg Polyethylene, PE, incineration with fly ash extraction - C3 (kg)	kg	0,93			
Waste treatment per kg Polyurethane (PU), incineration (kg)	kg	0,27			
Waste treatment per kg Rubber, municipal incineration with fly ash extraction (kg)	kg	0,14			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg)	kg	3,05			
Waste treatment per kg Textile, incineration with fly ash extraction (kg)	kg	0,20			
Waste treatment per kg Wood, incineration with fly ash extraction (kg)	kg	1,79			
Waste, materials to recycling (kg)	kg	1,03			
Disposal (C4)	Unit	Value			
Landfilling of ashes and residues from incineration of Scrap steel (kg)	kg	2,02			
Landfilling of ashes from incineration of Hazardous waste, from incineration (kg)	kg	0,00			
Landfilling of ashes from incineration of Non- hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,13			
Landfilling of ashes from incineration of Polyethylene, PE, process per kg ashes and residues - C4 (kg)	kg	0,03			
Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg)	kg	0,01			
Landfilling of ashes from incineration of Rubber, process per kg ashes and residues - C4 (kg)	kg	0,01			
Landfilling of ashes from incineration of Textile, soiled, process per kg ashes and residues (kg)	kg	0,01			
Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg)	kg	0,02			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	4,11			
Substitution of primary steel with net scrap (kg)	kg	1,03			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	62,26			



LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environme	ental impact								
	Indicator		Unit		A1-A3	A4	A5	B2	В3
	GWP-total		kg CO ₂ -eq		2,74E+01	1,41E+00	3,49E+00	0	0
	GWP-fossil		kg CO ₂ -eq		3,43E+01	1,40E+00	3,97E-02	0	0
	GWP-biogenic		kg CO ₂ -e	eq	-7,12E+00	5,81E-04	3,45E+00	0	0
	GWP-luluc		kg CO ₂ -e	eq	2,03E-01	5,00E-04	1,14E-05	0	0
Ö	ODP		kg CFC11 -	-eq	2,19E-06	3,18E-07	7,34E-09	0	0
CF .	АР		mol H+ -	eq	2,40E-01	4,04E-03	1,64E-04	0	0
**	EP-FreshWater		kg P -ec	I	3,27E-03	1,12E-05	2,84E-07	0	0
**	EP-Marine		kg N -ed	1	7,85E-02	7,99E-04	5,91E-05	0	0
**	EP-Terrestial		mol N -e	q	4,46E-01	8,94E-03	5,87E-04	0	0
	POCP		kg NMVOC	-eq	1,28E-01	3,42E-03	1,70E-04	0	0
	ADP-minerals&metals ¹		kg Sb -e	9	8,90E-04	3,88E-05	8,36E-07	0	0
	ADP-fossil ¹		MJ		4,96E+02	2,12E+01	4,87E-01	0	0
<u>%</u>	WDP ¹		m ³		1,30E+03	2,05E+01	6,82E-01	0	0
	Indicator								
	muicator		Unit	B4	C1	C2	C3	C4	D
	GWP-total	ı	kg CO ₂ -eq	0 0	0 0	C2 6,19E-02	C3 8,88E+00	C4 2,77E-02	-1,51E+00
_	GWP-total	ı	kg CO ₂ -eq	0	0	6,19E-02	8,88E+00	2,77E-02	-1,51E+00
	GWP-total GWP-fossil	I	kg CO ₂ -eq kg CO ₂ -eq	0	0	6, 19E-02 6, 18E-02	8,88E+00 5,29E+00	2,77E-02 2,77E-02	-1,51E+00 -1,50E+00
	GWP-total GWP-fossil GWP-biogenic	1	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq	0 0	0 0	6,19E-02 6,18E-02 2,56E-05	8,88E+00 5,29E+00 3,60E+00	2,77E-02 2,77E-02 2,05E-05	-1,51E+00 -1,50E+00 -1,37E-03
	GWP-total GWP-fossil GWP-biogenic GWP-luluc	l l k	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq	0 0 0	0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05	8,88E+00 5,29E+00 3,60E+00 4,69E-05	2,77E-02 2,77E-02 2,05E-05 7,56E-06	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP	l l k	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq	0 0 0 0	0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP	l l k	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq mol H+ -eq	0 0 0 0 0	0 0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08 1,78E-04	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08 1,68E-03	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09 1,77E-04	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02 -8,63E-03
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater	l l kı	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq mol H+ -eq kg P -eq	0 0 0 0 0 0	0 0 0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08 1,78E-04 4,94E-07	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08 1,68E-03 3,07E-06	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09 1,77E-04 2,88E-07	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02 -8,63E-03 -1,02E-04
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine	l l kų r	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq mol H+ -eq kg P -eq kg N -eq	0 0 0 0 0 0	0 0 0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08 1,78E-04 4,94E-07 3,51E-05	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08 1,68E-03 3,07E-06 8,06E-04	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09 1,77E-04 2,88E-07 6,21E-05	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02 -8,63E-03 -1,02E-04 -2,14E-03
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial	l l kų r	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq	0 0 0 0 0 0 0	0 0 0 0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08 1,78E-04 4,94E-07 3,51E-05 3,93E-04	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08 1,68E-03 3,07E-06 8,06E-04 8,20E-03	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09 1,77E-04 2,88E-07 6,21E-05 6,90E-04	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02 -8,63E-03 -1,02E-04 -2,14E-03 -2,25E-02
	GWP-total GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial POCP	l l kų r	kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq kg CO ₂ -eq g CFC11 -eq mol H+ -eq kg P -eq kg N -eq mol N -eq	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	6,19E-02 6,18E-02 2,56E-05 2,20E-05 1,40E-08 1,78E-04 4,94E-07 3,51E-05 3,93E-04 1,51E-04	8,88E+00 5,29E+00 3,60E+00 4,69E-05 2,23E-08 1,68E-03 3,07E-06 8,06E-04 8,20E-03 2,00E-03	2,77E-02 2,77E-02 2,05E-05 7,56E-06 7,51E-09 1,77E-04 2,88E-07 6,21E-05 6,90E-04 1,98E-04	-1,51E+00 -1,50E+00 -1,37E-03 -1,29E-02 -2,63E-02 -8,63E-03 -1,02E-04 -2,14E-03 -2,25E-02 -8,60E-03

GWP-total = Global Warming Potential total; 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

Remarks to environmental impacts

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{1.} The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



Additional environmental impact indicators									
	Indicator	Unit		A1-A3	A4	A5	B2	В3	
	PM	Disease incidence	Disease incidence		8,60E-08	2,45E-09	0	0	
(101)	IRP ²	kgBq U235 -eq		1,16E+00	9,28E-02	2,09E-03	0	0	
	ETP-fw ¹	CTUe		1,92E+03	1,57E+01	6,39E-01	0	0	
46.* ****	HTP-c ¹	CTUh		1,03E-07	0,00E+00	1,90E-11	0	0	
46° E	HTP-nc ¹	CTUh	CTUh		1,72E-08	7,94E-10	0	0	
	SQP ¹	dimensionless		6,92E+02	1,49E+01	3,57E-01	0	0	
li	ndicator	Unit	B4	C1	C2	C3	C4	D	
	PM	Disease incidence	0	0	3,78E-09	1,39E-08	3,13E-09	-2,75E-07	
	IRP ²	kgBq U235 -eq	0	0	4,08E-03	3,19E-03	2,28E-03	-2,89E-02	
	ETP-fw ¹	CTUe	0	0	6,93E-01	8,72E+00	3,89E-01	-9,16E+01	

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

0

0

0,00E+00

7,57E-10

6,54E-01

4,63E-10

1,11E-08

2,30E-01

1,30E-11

4,50E-10

1,24E+00

-5,99E-09

9,21E-08

-3,52E+01

CTUh

CTUh

dimensionless

HTP-c¹

HTP-nc¹

SQP¹

[&]quot;Reading example: 9,0 E-03 = 9,0*10-3 = 0,009"

^{*}INA Indicator Not Assessed

^{1.} The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

^{2.} This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.



Resource use		_					_	
	Indicator		Unit	A1-A3	A4	A5	B2	В3
T T	PERE		MJ	1,13E+02	3,04E-01	8,27E-03	0	0
	PERM		МЈ	5,01E+01	0,00E+00	-1,66E+01	0	0
T.	PERT		МЈ	1,57E+02	3,04E-01	-1,66E+01	0	0
	PENRE		МЈ	4,31E+02	2,12E+01	4,88E-01	0	0
Å	PENRM		MJ	6,91E+01	0,00E+00	-3,65E+00	0	0
IA	PENRT		МЈ	4,97E+02	2,12E+01	-3,16E+00	0	0
	SM		kg	7,90E-01	0,00E+00	0,00E+00	0	0
2	RSF		MJ	6,23E-01	1,09E-02	2,69E-04	0	0
	NRSF		MJ	1,18E+00	3,89E-02	1,08E-03	0	0
<u>%</u>	FW		m^3		2,27E-03	2,32E-04	0	0
In	dicator	Unit	B4	C1	C2	C3	C4	D
	PERE	MJ	0	0	1,34E-02	7,81E-02	1,23E-02	-3,27E+01
4	PERM	MJ	0	0	0,00E+00	-2,86E+01	0,00E+00	0,00E+00
₽ ₽	PERT	MJ	0	0	1,34E-02	-2,86E+01	1,23E-02	-3,27E+01
	PENRE	MJ	0	0	9,35E-01	1,28E+00	5,61E-01	-1,47E+01
Åg	PENRM	MJ	0	0	0,00E+00	-6,53E+01	0,00E+00	0,00E+00
IA	PENRT	MJ	0	0	9,35E-01	-6,41E+01	5,61E-01	-1,47E+01
	SM	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
2	RSF	МЈ	0	0	4,79E-04	1,83E-03	3,17E-04	3,55E-02
	NRSF	MJ	0	0	1,71E-03	0,00E+00	2,28E-02	-6,93E-01

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 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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed



End of life - Waste									
	Indicator			nit	A1-A3	A4	A5	B2	В3
	HWD			kg		1,10E-03	0,00E+00	0	0
Ū	NHWD	kg		g	6,28E+00	1,03E+00	2,12E+00	0	0
₩	RWD		kg		1,14E-03	1,45E-04	0,00E+00	0	0
In	dicator		Unit	B4	C1	C2	C3	C4	D
ā	HWD		kg	0	0	4,82E-05	0,00E+00	2,17E+00	-6,16E-03
Ū	NHWD		kg	0	0	4,55E-02	5,46E-01	6,80E-02	-5,87E-01
æ	RWD	RWD		0	0	6,37E-06	0,00E+00	3,54E-06	-2,39E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed

End of life - Output flow	End of life - Output flow										
Ind	Indicator			A1-A3	A4	A5	B2	В3			
®▷	CRU	kç	kg		0,00E+00	0,00E+00	0	0			
&▷	MFR	kç	ı	1,41E-01	0,00E+00	1,93E+00	0	0			
DF	MER	kç	J	2,65E-07	0,00E+00	1,42E-01	0	0			
5D	EEE	М	J	1,80E-02	0,00E+00	1,16E-01	0	0			
D	EET	М	МЈ		0,00E+00	1,76E+00	0	0			
Indicato	or	Unit	B4	C1	C2	C3	C4	D			
Ø▷	CRU	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00			
\$>	MFR	kg	0	0	0,00E+00	1,03E+00	0,00E+00	0,00E+00			
DV	MER	kg	0	0	0,00E+00	6,93E+00	0,00E+00	0,00E+00			
50	EEE	МЈ	0	0	0,00E+00	3,84E+00	0,00E+00	0,00E+00			
	EET	MJ	0	0	0,00E+00	5,81E+01	0,00E+00	0,00E+00			

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0*10-3 = 0,009" *INA Indicator Not Assessed

Biogenic Carbon Content								
Unit	At the factory gate							
kg C	9,01E-01							
kg C	1,12E+00							
	kg C							

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, Poland (kWh)	ecoinvent 3.6	1060,47	g CO2-eq/kWh

Dangerous substances

The product contains no substances on the REACH Candidate list or the Norwegian priority list at or above 100 ppm, 0,01 % by weight.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products									
Indicator	Unit	Unit		A4	A5	B2	В3		
GWPIOBC	kg CO ₂ -eq	kg CO ₂ -eq		1,41E+00	0,00E+00	0	0		
Indicator	Unit	B4	C1	C2	C3	C4	D		
GWPIOBC	kg CO ₂ -eq	0	0	6,19E-02	5,03E+00	2,95E-02	-2,07E+00		

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Key Environmental Indicators

Indicator	Unit	A1-A3	A4	A1-C4	A1-D
GWPtotal	kg CO ₂ -eq	27,40	1,41	41,27	39,75
Total energy consumption	MJ	546,34	21,59	571,34	523,28
Amount of recycled materials	%	8,35			



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