

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Akunok Acoustic Seating, One-seater with Highback



abstracta

The Norwegian EPD Foundation

Owner of the declaration:

Abstracta AB

Product:

Akunok Acoustic Seating, One-seater with Highback

Declared unit:

1 pcs

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-6488-5748-EN

Registration number:

NEPD-6488-5748-EN

Issue date: 30.04.2024

Valid to: 30.04.2029

EPD software:

LCAno EPD generator ID: 269333

General information

Product

Akunok Acoustic Seating, One-seater with Highback

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-6488-5748-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 pcs Akunok Acoustic Seating, One-seater with Highback

Declared unit (cradle to gate) with option:

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

Functional unit:

This EPD considers one pcs of Akunok Acoustic Seating. The product is a sofa, either with one- or two seats, with sound-absorbing screens. At the end of its life it can be dismantled and recycled or returned to Abstracta for reuse or recycling.

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:

Abstracta AB
Contact person: Tim Wisme
Phone:
e-mail: tim.wisme@abstracta.se

Manufacturer:

Abstracta AB

Place of production:

Abstracta AB
Lammengatan 2
363 45 Lammhult, Sweden

Management system:

ISO 9001, 14001 och 45001

Organisation no:

556046-3852

Issue date:

30.04.2024

Valid to:

30.04.2029

Year of study:

2023

Comparability:

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

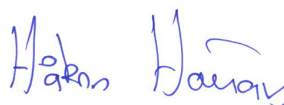
Development and verification of EPD:

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: Tim Wisme

Reviewer of company-specific input data and EPD: Erik Graesen

Approved:



Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

This acoustic furniture concept by Abstracta and designer Maja Ganszyniec ambitiously tackles two of the biggest challenges facing many of today's workplaces. The first is to create better soundscapes that promote well-being and job satisfaction. The second is to offer employees secluded, quiet smaller areas where they can focus on their work in comfort, either alone or in small groups.

A play on the words acoustic and nook, Akunok is about carefully created seclusion — rather than establishing enclosed rooms.

Akunok is designed for dynamic environments characterised by noise and movement, such as open-plan offices and co-working spaces. It is also ideal for furnishing lobbies, libraries and reading rooms.

For more information about the product, visit the product page <https://abstracta.se/product/akunok-acoustic-seating/>

Product specification

The Akunok Acoustic Seating are generously sized, with pocket springs for maximum comfort, and sound-absorbing infill. They are marked by uncompromising quality and attention to detail, such as their beautiful French seam and a tubular steel base that protrudes just enough to give Akunok its unique character inspired by Japanese interiors. Akunok is available in a selection of fabrics and colours. Its base comes in several colours.

This EPD includes these variants:

Akunok Acoustic Seating, Two-seater with Highback

See the product sheet for more information: <https://lammhults.sharepoint.com/:b:/s/abs-webpage/Ee6SDKRYFA9Pqh2AbEfQcTIBNLTH1mTBCINEa35YcXviDg?e=0eHkT8>.

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Wood	16,55	32,61	0,00	0,00
Metal - Stainless steel	0,32	0,63	0,07	21,83
Textile - Wool	2,76	5,43	0,31	11,20
Wood - Medium Density Fibreboard (MDF)	0,82	1,62	0,00	0,00
Filt	4,41	8,68	2,20	50,00
Glue for wood	0,16	0,31	0,00	0,00
Metal - Steel	10,65	20,98	0,00	0,00
Adhesive	0,46	0,91	0,01	1,82
Wood - Plywood	7,15	14,08	0,00	0,00
Plastic - Polyurethane (PUR)	2,58	5,08	0,00	0,00
Rubber, synthetic	0,31	0,61	0,00	0,00
Wood - Solid beech/birch	1,40	2,76	0,00	0,00
Plastic - Polyethylene (HDPE)	0,02	0,04	0,00	0,00
Powder coating	0,15	0,30	0,00	0,00
Textile - Polyester (PE)	2,30	4,53	0,03	1,38
Plastic - Nylon (PA)	0,04	0,08	0,00	0,00
Wood - High Density Fibreboard (HDF)	0,68	1,34	0,00	0,00
Total	50,75		2,62	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Polystyrene	0,12	0,51	0,00	0,00
Packaging - Steel	0,03	0,14	0,00	0,00
Recycled cardboard	3,78	15,54	3,78	100,00
Packaging - Wood	17,45	71,72	0,00	0,00
Packaging - Cardboard	2,52	10,36	0,00	0,00
Packaging - Plastic	0,37	1,51	0,00	0,00
Packaging - Plastic straps	0,05	0,22	0,00	0,00
Total incl. packaging	75,08		6,40	

Technical data:

The dimensions of Akunok Acoustic Seating, One-seater with Highback is 1090x1290x980, but other sizes are available.

For more information see the technical data sheet: https://lammhults.sharepoint.com/:b:/s/abs-webpage/ERWW6SiHr1NLiLiWk8EYAoB91DN-07AU_e9bqg_q0rH2w?e=Na8TV2.

Market:

The product is available worldwide. The distance to the market is based on shipping to Scandinavia or Western Europe.

Reference service life, product

At least 10 years, with a 5-year warranty and a 10-year spare part guarantee.

Reference service life, building

Assumed to be 60 years.

LCA: Calculation rules**Declared unit:**

1 pcs Akunok Acoustic Seating, One-seater with Highback

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
Adhesive	Modified ecoinvent 3.6	Database/Supplier	2019
Filt	S-P-04908	EPD	2020
Glue for wood	ecoinvent 3.6	Database	2019
Metal - Stainless steel	ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Packaging - Cardboard	Modified ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Packaging - Plastic straps	ecoinvent 3.6	Database	2019
Packaging - Polystyrene	ecoinvent 3.6	Database	2019
Packaging - Steel	ecoinvent 3.6	Database	2019
Packaging - Wood	Modified 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
Recycled cardboard	Modified ecoinvent 3.6	Database	2019
Rubber, synthetic	ecoinvent 3.6	Database	2019
Textile - Polyester (PE)	ecoinvent 3.6	Database	2019
Textile - Wool	MD-23110-EN_rev1	EPD	2021
Wood	ecoinvent 3.6	Database	2019
Wood - High Density Fibreboard (HDF)	ecoinvent 3.6	Database	2019
Wood - Medium Density Fibreboard (MDF)	ecoinvent 3.6	Database	2019
Wood - Plywood	modified ecoinvent 3.6	Database	2019
Wood - Solid beech/birch	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 life 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	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MNR	X	X	X	MNR	MNR	MNR	X	X	X	X	X

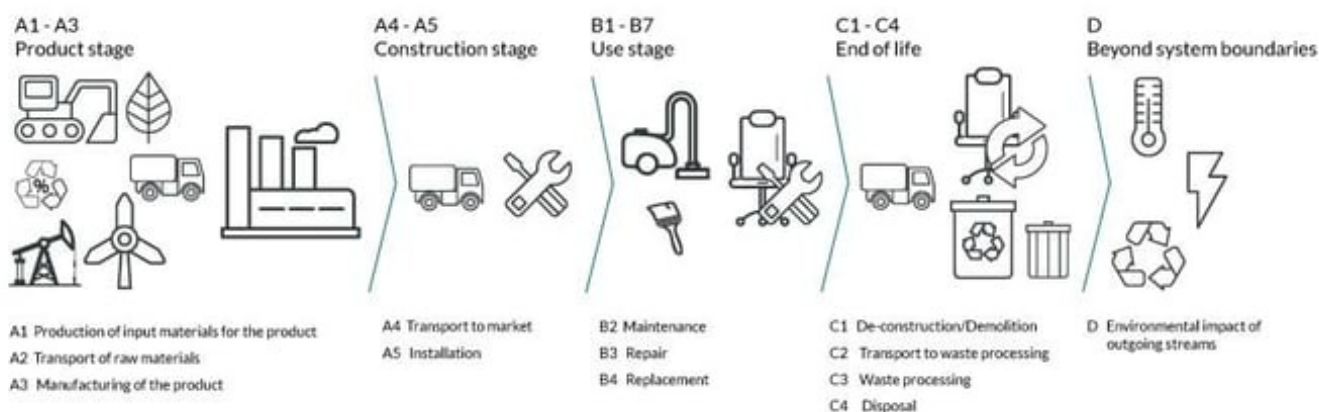
System boundary:

The EPD is a cradle-to-cradle analysis, A1-D, where some B-stages (use phase) that were assumed to be neglectable are not included.

The A1-A4 stages includes the extraction and production of raw materials, transportation to the production site, the production process itself, and an estimated transport distance to the market. A5 includes the generated waste from the packaging of the product after assembly at the customer.

The only B stage that is assumed to be relevant is B2. This stage includes assumptions on how the customer takes care of the product according to Abstracta’s care instructions.

The C- and D-stages includes the use of materials and energy for deconstruction, the transport to waste management, the waste processes, disposal of materials that cannot be processed, and the potential of reuse, recovery, and recycling of the product.



Additional technical information:

To preserve the fabric colour and the appearance of the fabric, Akunok should be vacuumed regularly with a soft nozzle.

Polyester Stain Removal: Use uncoloured paper towel or cloth to soak up as much as possible of the stain. Dried stains should be vacuumed. Moisten the stain lightly with a clean white cotton cloth, lukewarm water and possibly a small amount of pH-neutral detergent. Press a dry cloth or uncoloured paper towel against the fabric so that moisture and dirt are absorbed. Repeat moistening and soaking until the stain is gone. Use clean water without detergent at the last moistening. Finish with soaking.

Wool Stain Removal: Dab or wipe gently with a moist cloth.

Abstracta offers a reuse service for our clients. This involves us collecting worn-out products to facilitate reuse, renovation, or recycling. In order to make circularity easier, most of our products feature replaceable parts, simplifying repair. We do this in the hope that we can help contribute in the transition to a more sustainable future. Read more about the service here: <https://abstracta.se/story/abstracta-is-introducing-a-new-recycling-service-for-used-products-abstracta/> or contact our Sales Support for more information. Otherwise, try to ensure that the product can be reused when possible, or else, dismantle it so that as much of the materials can be recycled as possible.

LCA: Scenarios and additional technical information

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

Some assumptions have been made regarding the products lifetime after leaving the factory gates. The product is assumed to be transported to a customer in Scandinavia, Germany, the UK, or France (88% of sales in 2023). An average distance to the customer has been calculated through this data. In the A5 phase, the packaging of the product becomes waste, and the impacts are added automatically according to assumptions made in the EPD tool on waste handling on-site. In the use stage, the assumption is that the customer takes care of the product by vacuuming it for 1 minute/m² of the product, with a 600 W vacuum, on a yearly basis. For the end-of-life stage of the product, it has been assumed that there is a 50 km distance from the customer to a waste terminal. The rest of the values are automatically filled in by the tool. For the D-stage, automatic values are filled in, according to generic data.














Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Ship, Ferry, Sea (km)	50,0 %	8	0,034	l/tkm	0,27
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	502	0,043	l/tkm	21,58
Assembly (A5)		Unit	Value		
Waste, metal, average treatment (kg)	kg	0,03			
Waste, packaging, cardboard, 100 % recycled, to average treatment (kg)	kg	3,78			
Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg)	kg	2,52			
Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg)	kg	17,45			
Waste, packaging, PET straps, to average treatment - A5 (kg)	kg	0,05			
Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg)	kg	0,37			
Waste, packaging, polystyrene, for incineration (kg)	kg	0,12			
Maintenance (B2)		Unit	Value		
Electricity, Nordic (kWh)	kWh/DU	0,70			
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 %	50	0,043	l/tkm	2,15
Waste processing (C3)		Unit	Value		
Copper to recycling (kg)	kg	3,72			
Waste treatment per kg Hazardous waste, incineration (kg)	kg	0,62			
Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg)	kg	0,15			
Waste treatment per kg Plastics, Mixture, municipal incineration with fly ash extraction (kg)	kg	0,04			
Waste treatment per kg Polyethylene terephthalate, PET, incineration with fly ash extraction - C3 (kg)	kg	4,41			
Waste treatment per kg Polyethylene, PE, incineration with fly ash extraction - C3 (kg)	kg	0,02			
Waste treatment per kg Polyurethane (PU), incineration (kg)	kg	2,58			
Waste treatment per kg Rubber, municipal incineration with fly ash extraction (kg)	kg	0,31			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg)	kg	10,97			
Waste treatment per kg Textile, incineration with fly ash extraction (kg)	kg	5,06			
Waste treatment per kg Wood, incineration with fly ash extraction (kg)	kg	26,60			














Disposal (C4)	Unit	Value			
Landfilling of ashes and residues from incineration of Scrap steel (kg)	kg	7,25			
Landfilling of ashes from incineration of Hazardous waste, from incineration (kg)	kg	0,12			
Landfilling of ashes from incineration of Non-hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,04			
Landfilling of ashes from incineration of Plastics, Mixture, municipal incineration with fly ash extraction, process per kg ashes and residues - C4 (kg)	kg	0,00			
Landfilling of ashes from incineration of Polyethylene terephthalate, PET, process per kg ashes and residues - C4 (kg)	kg	0,10			
Landfilling of ashes from incineration of Polyethylene, PE, process per kg ashes and residues - C4 (kg)	kg	0,00			
Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg)	kg	0,10			
Landfilling of ashes from incineration of Rubber, process per kg ashes and residues - C4 (kg)	kg	0,02			
Landfilling of ashes from incineration of Textile, soiled, process per kg ashes and residues (kg)	kg	0,25			
Landfilling of ashes from incineration of Wood, process per kg ashes and residues (kg)	kg	0,31			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	31,95			
Substitution of primary steel with net scrap (kg)	kg	3,29			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	483,35			

LCA: Results

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

Environmental impact							
Indicator	Unit	A1-A3	A4	A5	B2	B3	
 GWP-total	kg CO ₂ -eq	9,95E+01	6,22E+00	3,77E+01	1,02E-01	0	
 GWP-fossil	kg CO ₂ -eq	1,72E+02	6,22E+00	5,55E-01	9,50E-02	0	
 GWP-biogenic	kg CO ₂ -eq	-7,29E+01	2,56E-03	3,71E+01	1,74E-03	0	
 GWP-luluc	kg CO ₂ -eq	3,44E-01	2,23E-03	4,29E-05	5,21E-03	0	
 ODP	kg CFC11 -eq	2,80E-05	1,41E-06	2,77E-08	1,03E-08	0	
 AP	mol H+ -eq	7,36E-01	1,98E-02	7,62E-04	4,38E-04	0	
 EP-FreshWater	kg P -eq	9,06E-03	4,94E-05	1,22E-06	6,29E-06	0	
 EP-Marine	kg N -eq	1,66E-01	4,04E-03	3,02E-04	6,93E-05	0	
 EP-Terrestrial	mol N -eq	1,95E+00	4,51E-02	2,99E-03	9,30E-04	0	
 POCP	kg NMVOC -eq	6,02E-01	1,65E-02	8,29E-04	2,18E-04	0	
 ADP-minerals&metals ¹	kg Sb-eq	3,17E-03	1,70E-04	3,07E-06	1,48E-06	0	
 ADP-fossil ¹	MJ	2,61E+03	9,39E+01	1,87E+00	2,57E+00	0	
 WDP ¹	m ³	1,48E+04	9,02E+01	2,80E+00	1,99E+02	0	

Indicator	Unit	B4	C1	C2	C3	C4	D
 GWP-total	kg CO ₂ -eq	0	0	6,14E-01	7,56E+01	1,58E-01	-6,53E+00
 GWP-fossil	kg CO ₂ -eq	0	0	6,13E-01	1,93E+01	1,58E-01	-6,42E+00
 GWP-biogenic	kg CO ₂ -eq	0	0	2,54E-04	5,63E+01	1,26E-04	-7,78E-03
 GWP-luluc	kg CO ₂ -eq	0	0	2,18E-04	4,81E-04	3,34E-05	-9,82E-02
 ODP	kg CFC11 -eq	0	0	1,39E-07	2,42E-07	3,04E-08	-2,04E-01
 AP	mol H+ -eq	0	0	1,76E-03	1,52E-02	7,66E-04	-4,11E-02
 EP-FreshWater	kg P -eq	0	0	4,90E-06	4,43E-05	1,65E-06	-4,72E-04
 EP-Marine	kg N -eq	0	0	3,49E-04	7,25E-03	2,59E-04	-1,13E-02
 EP-Terrestrial	mol N -eq	0	0	3,90E-03	7,32E-02	2,90E-03	-1,20E-01
 POCP	kg NMVOC -eq	0	0	1,49E-03	1,79E-02	8,27E-04	-4,06E-02
 ADP-minerals&metals ¹	kg Sb-eq	0	0	1,69E-05	8,47E-06	1,63E-06	-9,03E-05
 ADP-fossil ¹	MJ	0	0	9,27E+00	1,31E+01	2,33E+00	-7,05E+01
 WDP ¹	m ³	0	0	8,97E+00	3,69E+01	1,22E+01	-3,11E+02

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







"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

Remarks to environmental impacts

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	B2	B3
 PM	Disease incidence	1,32E-05	3,79E-07	1,04E-08	2,32E-09	0
 IRP ²	kgBq U235 -eq	9,71E+00	4,10E-01	7,80E-03	5,86E-02	0
 ETP-fw ¹	CTUe	5,59E+03	6,95E+01	2,41E+00	3,22E+00	0
 HTP-c ¹	CTUh	4,08E-07	0,00E+00	1,12E-10	7,50E-11	0
 HTP-nc ¹	CTUh	4,72E-06	7,59E-08	4,86E-09	1,97E-09	0
 SQP ¹	dimensionless	6,62E+03	6,52E+01	1,36E+00	1,94E+00	0


Indicator	Unit	B4	C1	C2	C3	C4	D
 PM	Disease incidence	0	0	3,75E-08	1,30E-07	1,23E-08	-1,70E-06
 IRP ²	kgBq U235 -eq	0	0	4,05E-02	3,96E-02	9,88E-03	-2,43E-01
 ETP-fw ¹	CTUe	0	0	6,87E+00	6,04E+01	2,22E+00	-4,20E+02
 HTP-c ¹	CTUh	0	0	0,00E+00	3,66E-09	9,60E-11	-2,14E-08
 HTP-nc ¹	CTUh	0	0	7,51E-09	9,88E-08	3,20E-09	1,69E-07
 SQP ¹	dimensionless	0	0	6,48E+00	3,27E+00	5,42E+00	-2,70E+02











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)

"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 experience 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	B3	
	PERE	MJ	1,32E+03	1,34E+00	3,35E-02	2,53E+00	0	
	PERM	MJ	6,96E+02	0,00E+00	-3,04E+02	0,00E+00	0	
	PERT	MJ	2,02E+03	1,34E+00	-3,04E+02	2,53E+00	0	
	PENRE	MJ	2,36E+03	9,39E+01	1,87E+00	2,61E+00	0	
	PENRM	MJ	2,69E+02	0,00E+00	-2,17E+01	0,00E+00	0	
	PENRT	MJ	2,63E+03	9,39E+01	-1,50E+01	2,61E+00	0	
	SM	kg	6,40E+00	0,00E+00	0,00E+00	0,00E+00	0	
	RSF	MJ	1,70E+00	4,78E-02	1,06E-03	2,55E-02	0	
	NRSF	MJ	5,29E+00	1,70E-01	5,57E-03	0,00E+00	0	
	FW	m ³	2,24E+00	9,99E-03	1,02E-03	1,15E-02	0	




Indicator		Unit	B4	C1	C2	C3	C4	D
	PERE	MJ	0	0	1,33E-01	1,27E+00	7,75E-02	-2,50E+02
	PERM	MJ	0	0	0,00E+00	-3,80E+02	0,00E+00	0,00E+00
	PERT	MJ	0	0	1,33E-01	-3,78E+02	7,75E-02	-2,50E+02
	PENRE	MJ	0	0	9,27E+00	1,32E+01	2,33E+00	-7,05E+01
	PENRM	MJ	0	0	0,00E+00	-2,48E+02	0,00E+00	0,00E+00
	PENRT	MJ	0	0	9,27E+00	-2,34E+02	2,33E+00	-7,05E+01
	SM	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	RSF	MJ	0	0	4,75E-03	2,84E-02	1,79E-03	8,74E-02
	NRSF	MJ	0	0	1,70E-02	0,00E+00	1,68E-01	-1,09E+01
	FW	m ³	0	0	9,91E-04	2,54E-02	2,31E-03	-3,06E-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 excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy 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		Unit	A1-A3	A4	A5	B2	B3
	HWD	kg	1,00E+00	4,83E-03	0,00E+00	2,41E-04	0
	NHWD	kg	3,22E+01	4,53E+00	7,75E+00	1,59E-02	0
	RWD	kg	1,80E-02	6,40E-04	0,00E+00	2,69E-05	0






Indicator		Unit	B4	C1	C2	C3	C4	D
	HWD	kg	0	0	4,78E-04	0,00E+00	7,64E+00	-2,07E-02
	NHWD	kg	0	0	4,51E-01	7,71E-01	3,88E-01	-2,43E+00
	RWD	kg	0	0	6,32E-05	0,00E+00	1,27E-05	-2,00E-04

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							
Indicator		Unit	A1-A3	A4	A5	B2	B3
	CRU	kg	0,00E+00	0,00E+00	1,66E+01	0,00E+00	0
	MFR	kg	5,62E-01	0,00E+00	6,11E+00	0,00E+00	0
	MER	kg	1,81E+00	0,00E+00	9,89E-01	0,00E+00	0
	EEE	MJ	1,11E+00	0,00E+00	1,18E+00	0,00E+00	0
	EET	MJ	1,68E+01	0,00E+00	1,79E+01	0,00E+00	0

Indicator		Unit	B4	C1	C2	C3	C4	D
	CRU	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	0	0	0,00E+00	3,72E+00	0,00E+00	0,00E+00
	MER	kg	0	0	0,00E+00	5,07E+01	0,00E+00	0,00E+00
	EEE	MJ	0	0	0,00E+00	3,11E+01	0,00E+00	0,00E+00
	EET	MJ	0	0	0,00E+00	4,70E+02	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		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	1,33E+01
Biogenic carbon content in accompanying packaging	kg C	1,04E+01

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, Sweden (kWh)	ecoinvent 3.6	54,94	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Additional Environmental Information

Key Environmental Indicators

Key environmental indicators	Unit	A1-A3	A4	A1-C4	A1-D
GWPtotal	kg CO ₂ -eq	99,46	6,22	219,82	213,30
Total energy consumption	MJ	3688,37	95,44	3817,41	3486,12
Amount of recycled materials	%	7,48			

Additional environmental impact indicators required in NPCR Part A for construction products

Indicator	Unit	A1-A3	A4	A5	B2	B3
GWPIOBC	kg CO ₂ -eq	1,74E+02	6,22E+00	5,55E-01	1,38E-01	0

Indicator	Unit	B4	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	0	0	6,14E-01	2,74E+01	1,75E-01	-8,28E+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.

Variants and Options

Key environmental indicators (A1-A3) for variants of this EPD

Variants	Weight (kg)	GWPtotal (kg CO ₂ -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)
Akunok Acoustic Seating, Two-seater with Highback	121,60	172,23	6121,56	8,25

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