

Environmental Product Declaration



In accordance with ISO 14025 and EN 15804 for:

Ecosund

from

Akustikmiljö i Falkenberg AB

akustikmiljö

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-05175
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Valid until:	2027-03-29



Programme information

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
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Product category rules (PCR): pcr2019-14 Construction products v1.11 and UN CPC code(s)> Together with EN 15804:2012+A2:2019 The LCA system is defined by Sub-PCR-C Acoustical systems solutions PCR 2012-01-Sub-PCR-C (updated to last 2021 out). VERSION 2020-09-18. Updated validity to 2021-12-31

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

PCR review was conducted by: The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification EPD verification

Third party verifier:

Martyna Mikusinska, Sweco Environment AB, Martyna.Mikusinska@sweco.se.

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes No

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

Company information

Owner of the EPD and location:

Akustikmiljö i Falkenberg AB, Sweden

Description of the organisation:

AM Acoustics has more than 30 years of experience in trendy acoustic products and complete solutions. The company manufactures sound absorbents from its own material EcoSUND, a material made of PET where 50% is post-consumer recycled and with production that takes place in Sweden. The company has a competent team that covers all areas from knowledge, own production, sound measurement, and assembly, which means that AM Acoustics can deliver a complete solution to customers' acoustic problems. Thanks to the fact that the company works together with some of the country's most respected and reputable acousticians, it has a competence that few can match. AM Acoustics is part of Götessons Design Group and delivers products to both the construction sector and the interior design industry.

Product-related or management system-related certifications:

ISO 9001:2015-and 14001:2015 and Sunda Hus, Basta and Byggvarubedömningen.

Product information

Product name: EcoSund

Product identification: The functional unit is 1m² EcoSund, class A sound absorption, RSL 25 years

Variations: The product comes in 3 different densities described in weight classes¹ (g/unit): a) 1600 b)2200 c)2600

Product description: The products are sound absorbents to customers from both the public and private sectors such as schools, offices, sports halls, and restaurants. The use of the products is as suspended ceiling solutions as well as interior.

UN CPC code: 37990 and 37129

Geographical scope: Europe

Results variations: The results are presented a specific for the variations (not as average).

Results in per mass (kg): To have the results per kg, the following conversion factors can be used: a) 0,457 b) 0,358 c) 0,313

Fire test according to ISO 13501-1: 2007 Result: B-s1, d0

Sound test according to ISO 354, calculation according to ISO 11654 Result Absorption class "A"

Manufacturing information

Incoming material, 2500 kg per truck, is stored in approx. 300 m² hot and cold room. Heat treatment is used to marry the materials. The finished elements are installed using a steel structure that is screwed to the wall.

Raw ECOSund: Heat in a laminating machine, then cut to the right size / shape.

ECOSund with velor: Velor + Glue film is laminated on the back; Front is heated in a laminating machine. then cut to the right size / shape.

ECOSund with textile: Textile + adhesive film is laminated in a laminating machine Then cut to the right size / shape.

ECOSund with velor and textile: Textile + Glue film, Velor + Glue film is laminated in a laminating machine. then cut out to the right size / shape.

¹ This is not the product weight per 1 m².

Content declaration

Product components	Weight (kg)			Post-consumer material (weight-%)	Renewable material (weight-%)
Variation (g/unit)	1600	2200	2600		
Polyester polyetylentereftalat (PET)	86%	89%	90%	50%	
Copolyester	3%	2%	2%		
Polyamid	4%	3%	3%		
Textile (80% Polyester, 20% viscose)	8%	6%	5%		
Total weight (kg)	2,19	2,79	3,19		

For construction product EPDs compliant with EN 15804, the content declaration shall list, as a minimum, substances contained in the products that are listed in the “Candidate List of Substances of Very High Concern for Authorization” when their content exceeds the limits for registration with the European Chemicals Agency. The product doesn’t contain any substance from the candidate list to authorization of the REACH legislation with a concentration above 0,1% (w/w)

Recycled material

Provenience of recycled materials pre-consumer in the product: 50% of the raw material is from Polyethylene terephthalate, granulate, amorphous, Recycled 100% according to GRS certificate.

Packaging

	<i>Ecosund</i>	<i>Biogenic (share of component and share of product)</i>	
<i>wood (pallet) (g)</i>	35	100%	1,8%
<i>PE foil (g)</i>	2,5		
<i>Cardboard (g)</i>	191	100%	10%
<i>Product weight (kg)</i>	1,88		

The biogenic content in packaging is 35 g + 191 (226g) per 1 m2 Ecosund.

LCA information

The complete Life Cycle Assessment report (Wendin, 2021) is available to the EPD verifier.

Declared Unit	1m2 EcoSund sound absorption class A. are 3 densities (g/unit): 1600, 2200, 2600
The function	The products are sound absorbents to customers from both the public and private sectors such as schools, offices, sports halls, and restaurants. The use of the products is as suspended ceiling solutions as well as interior.
Product group classification	37990 and 37129
Scope	Cradle to gate, with module C1-C4 and module D. The studied system includes the production of raw material (A1), its transport (A2) and manufacturing (A3). Transport to client (A4) is also included. Installation (A5) and deconstruction (C1) is not included because it does not have relevant environmental impact. The use phase (B) is not included due to the different functionalities. The end of life (C) is included and the potential secondary effects of reuse and recycling (D).
Time	Data represents the year 2020
Manufacturing Site	Falkenberg
Geographical Area	Europe, disposal is represented by Sweden.
Compliant with	<p>The methodology used follows the General program instructions for the International EPD System (EPD International, 2021b), PCR 2019:14 version 1.11 (EPD International, 2021a).</p> <p>The Sub-PCR-C Acoustical systems solutions (construction product)², was used to set the goal and scope of the Life Cycle Assessment.</p> <p>These are in line with the international standards for LCA that apply to this context: EN15804:2012+A2:2019 (CEN, 2019), ISO 14025 (ISO, 2006a), ISO 14040 (ISO, 2006b), and 14044 (ISO, 2006c).</p>
Cut-Off Rules	<p>The procedure below is followed for the exclusion of inputs and outputs according to the EN 15804:2012+ A2:2019 standard:</p> <p>No cut-offs have been made concerning specific data in this study.</p>
Allocation	<p>Allocation to coproducts (if any), is made by weight. It is most suitable because the environmental impact is mostly related to the weight and the products are made from mostly the similar material.</p> <p>The product EcoSund dominates the production at Akustik miljö entirely, so allocation other products have not been required.</p>
Key assumptions	<p>A1: The share recycled polyester is 50% and it is post-consumer.</p> <p>A3: The cuttings are sent back to supplier to be recycled. The wood packaging material is returned and reused continuously.</p> <p>A4: The transport (Euro 6, 32-ton payload) to client is on average 150 km, with “sling logistics” to optimize the load factor.</p> <p>C1 – Dismantling is not relevant for Ecosund. It is attached to the wall with metal clips and screws, that allow for easy dismantling without environmental aspects.</p> <p>C2 – Transport 20 km with municipal waste collection.</p> <p>C3 - The assumption is that the EcoSund is incinerated with energy recovery in municipal facilities in Sweden. Municipal solid waste (waste scenario) {SE} treatment of municipal solid waste, incineration Cut-off, U.</p> <p>C4 – Final disposal is not relevant for Ecosund. All the materials are incinerated.</p>
Background Data	Ecoinvent 3.7 - allocation, Cut off.

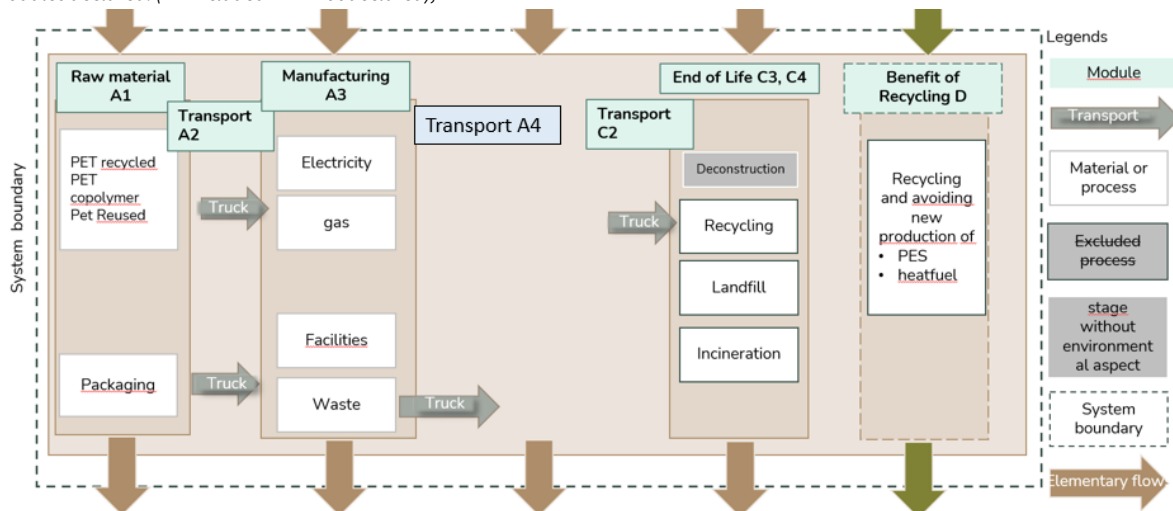
² Sub-PCR to PCR 2012:01 (v2.34)

akustikmiljö

Foreground Data -primary	Weight of articles and composition of raw materials. Suppliers' location for transport. Packaging, rest materials, electricity, heat and waste. Customers distance for distribution to client. Disposal scenario. Period of data collection 2020.
Foreground Data -specific	Manufacturing at Akustikmiljö I Falkenberg AB.
Electricity data	Electricity consumption in the A3 module is Goo-certified hydro power represented by data for national production of hydro power in Ecoinvent 3.7 regionalized for Sweden.
LCA software	SimaPro 9.2

	Material		Manufacturing & Transportation			Use							End of life				Reuse
	Raw material	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Replacement	Renovation	Energy during use	Water use	Demolition	Transport	Waste process	Final disposal	Potential benefit in recycling
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

Modules declared: (X = included ND = not declared),



Disclaimers about results for the environmental impact.

1. "Ionising Radiation" – 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.
2. Abiotic resources (elements and fossil fuels) 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.

Environmental performance

Potential environmental impact: 1m2 Ecosund 1600 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C4	D
Climate change	kg CO2 eq	5,41	0,18	0,94	0,03	0,04	4,56	1,88
Climate change - Fossil	kg CO2 eq	5,30	0,18	0,61	0,02	0,04	3,95	2,46
Climate change - Biogenic	kg CO2 eq	1,01E-01	1,56E-04	3,12E-01	5,47E-05	3,11E-05	6,04E-01	-5,72E-01
Climate change - Land use and LU change	kg CO2 eq	3,66E-03	9,12E-05	1,28E-02	7,27E-06	3,36E-06	1,54E-05	-6,07E-03
Ozone depletion	kg CFC11 eq	1,04E-05	3,82E-08	3,91E-08	6,13E-09	7,94E-09	6,99E-09	1,14E-05
Acidification	mol H+ eq	2,33E-02	3,40E-03	3,63E-03	7,87E-05	2,30E-04	1,36E-03	7,00E-03
Acidification	kg PO4 eq	3,89E-03	2,86E-05	6,63E-04	5,21E-06	2,07E-06	4,08E-05	2,18E-03
Eutrophication, freshwater	kg P eq	1,27E-03	9,31E-06	2,16E-04	1,70E-06	6,75E-07	1,33E-05	7,10E-04
Eutrophication, marine	kg N eq	5,49E-03	8,32E-04	1,08E-03	1,79E-05	9,26E-05	8,99E-04	1,73E-03
Eutrophication, terrestrial	mol N eq	4,63E-02	9,22E-03	1,12E-02	1,95E-04	1,02E-03	7,19E-03	9,98E-03
Photochemical ozone formation	kg NMVOC eq	2,14E-02	2,47E-03	2,76E-03	7,67E-05	3,58E-04	1,75E-03	1,02E-02
Resource use, minerals and metals	kg Sb eq	3,77E-05	3,19E-07	1,18E-05	6,11E-08	3,24E-08	1,80E-07	-2,39E-05
Resource use, fossils	MJ	9,41E+01	2,50E+00	2,51E+01	4,07E-01	4,96E-01	4,44E-01	5,10E+01
Water use	m3 depriv.	2,90E+00	6,27E-03	5,84E-01	1,29E-03	3,92E-04	1,83E-02	1,32E+00
Particulate matter	disease inc.	2,05E-07	9,75E-09	4,42E-08	2,18E-09	4,93E-09	7,44E-09	6,46E-08
Ionising radiation	kBq U-235 eq	4,32E-01	1,16E-02	1,10E+00	2,09E-03	2,23E-03	1,93E-03	1,18E-01
Ecotoxicity, freshwater	CTUe	8,31E+01	1,80E+00	1,88E+01	3,12E-01	2,77E-01	2,35E+00	-1,01E+01
Human toxicity, cancer	CTUh	3,00E-09	9,42E-11	7,53E-10	9,54E-12	5,35E-12	7,41E-10	1,13E-09
Human toxicity, non-cancer	CTUh	4,39E-08	1,47E-09	1,05E-08	3,22E-10	1,82E-10	9,86E-09	1,43E-08
Land use	Pt	2,06E+01	1,61E+00	1,78E+01	4,66E-01	8,74E-02	1,53E-01	-2,74E+02

Potential environmental impact: 1m2 Ecosund 2200 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C4	D
Climate change	kg CO2 eq	6,51	0,24	0,97	0,03	0,04	5,84	2,48
Climate change - Fossil	kg CO2 eq	6,35	0,24	0,64	0,03	0,04	5,23	3,24
Climate change - Biogenic	kg CO2 eq	1,62E-01	2,14E-04	3,10E-01	7,07E-05	3,11E-05	6,04E-01	-7,55E-01
Climate change - Land use and LU change	kg CO2 eq	4,41E-03	1,21E-04	1,28E-02	9,39E-06	3,36E-06	1,76E-05	-8,00E-03
Ozone depletion	kg CFC11 eq	1,30E-05	5,14E-08	4,17E-08	7,92E-09	7,94E-09	8,05E-09	1,51E-05
Acidification	mol H+ eq	2,73E-02	4,48E-03	3,85E-03	1,02E-04	2,30E-04	1,65E-03	9,23E-03
Acidification	kg PO4 eq	4,79E-03	3,87E-05	6,84E-04	6,73E-06	2,07E-06	4,52E-05	2,87E-03
Eutrophication, freshwater	kg P eq	1,56E-03	1,26E-05	2,23E-04	2,19E-06	6,75E-07	1,47E-05	9,36E-04
Eutrophication, marine	kg N eq	6,51E-03	1,10E-03	1,12E-03	2,32E-05	9,26E-05	1,08E-03	2,28E-03
Eutrophication, terrestrial	mol N eq	5,47E-02	1,22E-02	1,19E-02	2,52E-04	1,02E-03	8,75E-03	1,32E-02
Photochemical ozone formation	kg NMVOC eq	2,63E-02	3,26E-03	2,88E-03	9,90E-05	3,58E-04	2,14E-03	1,35E-02
Resource use, minerals and metals	kg Sb eq	4,60E-05	4,31E-07	1,22E-05	7,90E-08	3,24E-08	2,09E-07	-3,15E-05
Resource use, fossils	MJ	1,14E+02	3,37E+00	2,56E+01	5,25E-01	4,96E-01	5,24E-01	6,73E+01
Water use	m3 depriv.	3,40E+00	8,52E-03	5,91E-01	1,67E-03	3,92E-04	2,01E-02	1,74E+00
Particulate matter	disease inc.	2,42E-07	1,32E-08	4,68E-08	2,82E-09	4,93E-09	9,21E-09	8,52E-08
Ionising radiation	kBq U-235 eq	5,29E-01	1,57E-02	1,10E+00	2,70E-03	2,23E-03	2,26E-03	1,56E-01
Ecotoxicity, freshwater	CTUe	1,03E+02	2,43E+00	1,93E+01	4,03E-01	2,77E-01	2,72E+00	-1,33E+01
Human toxicity, cancer	CTUh	3,62E-09	1,26E-10	8,05E-10	1,23E-11	5,35E-12	9,55E-10	1,49E-09
Human toxicity, non-cancer	CTUh	5,32E-08	2,00E-09	1,09E-08	4,16E-10	1,82E-10	1,27E-08	1,89E-08
Land use	Pt	2,35E+01	2,21E+00	1,85E+01	6,02E-01	8,74E-02	1,78E-01	-3,61E+02

Potential environmental impact: 1m2 Ecosund 2600 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C4	D
Climate change	kg CO2 eq	7,25	0,28	0,99	0,04	0,04	6,69	2,88
Climate change - Fossil	kg CO2 eq	7,04	0,28	0,67	0,04	0,04	6,09	3,77
Climate change - Biogenic	kg CO2 eq	2,03E-01	2,53E-04	3,09E-01	8,21E-05	3,11E-05	6,04E-01	-8,76E-01
Climate change - Land use	kg CO2 eq	4,91E-03	1,41E-04	1,29E-02	1,09E-05	3,36E-06	1,92E-05	-9,29E-03
Ozone depletion	kg CFC11 eq	1,47E-05	6,02E-08	4,34E-08	9,20E-09	7,94E-09	8,75E-09	1,75E-05
Acidification	mol H+ eq	3,01E-02	5,20E-03	3,99E-03	1,18E-04	2,30E-04	1,84E-03	1,07E-02
Acidification	kg PO4 eq	5,38E-03	4,55E-05	6,97E-04	7,82E-06	2,07E-06	4,82E-05	3,34E-03
Eutrophication, freshwater	kg P eq	1,75E-03	1,48E-05	2,27E-04	2,55E-06	6,75E-07	1,57E-05	1,09E-03
Eutrophication, marine	kg N eq	7,19E-03	1,27E-03	1,15E-03	2,69E-05	9,26E-05	1,20E-03	2,65E-03
Eutrophication, terrestrial	mol N eq	6,03E-02	1,41E-02	1,24E-02	2,93E-04	1,02E-03	9,79E-03	1,53E-02
Photochemical ozone	kg NMVOC	2,96E-02	3,78E-03	2,97E-03	1,15E-04	3,58E-04	2,41E-03	1,56E-02
Resource use, minerals	kg Sb eq	5,16E-05	5,05E-07	1,24E-05	9,17E-08	3,24E-08	2,28E-07	-3,66E-05
Resource use, fossils	MJ	1,27E+02	3,95E+00	2,59E+01	6,10E-01	4,96E-01	5,78E-01	7,82E+01
Water use	m3 depriv.	3,73E+00	1,00E-02	5,97E-01	1,94E-03	3,92E-04	2,13E-02	2,02E+00
Particulate matter	disease inc.	2,67E-07	1,55E-08	4,86E-08	3,28E-09	4,93E-09	1,04E-08	9,89E-08
Ionising radiation	kBq U-235 eq	5,94E-01	1,84E-02	1,10E+00	3,13E-03	2,23E-03	2,48E-03	1,81E-01
Ecotoxicity, freshwater	CTUe	1,16E+02	2,85E+00	1,97E+01	4,68E-01	2,77E-01	2,97E+00	-1,54E+01
Human toxicity, cancer	CTUh	4,03E-09	1,47E-10	8,39E-10	1,43E-11	5,35E-12	1,10E-09	1,72E-09
Human toxicity, non-	CTUh	5,94E-08	2,35E-09	1,12E-08	4,83E-10	1,82E-10	1,46E-08	2,19E-08
Land use	Pt	2,54E+01	2,60E+00	1,90E+01	6,99E-01	8,74E-02	1,95E-01	-4,19E+02

Climate change as GWP (IPCC): 1m2 Ecosund 1600 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C3	D
IPCC GWP 100a	kg CO2 eq	5,24	0,17	0,62	0,02	0,04	3,95	2,38

Climate change as GWP (IPCC): 1m2 Ecosund 2200 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C3	D
IPCC GWP 100a	kg CO2 eq	6,28	0,23	0,65	0,03	0,04	5,23	3,14

Climate change as GWP (IPCC): 1m2 Ecosund 2600 gram/unit

Impact category	Unit	A1	A2	A3	A4	C2	C3	D
IPCC GWP 100a	kg CO2 eq	6,97	0,27	0,67	0,04	0,04	6,08	3,65



Use of resources 1m2 Ecosund 1600 gram/unit

Legend:

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials.

PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources.

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials.

PENRM = Use of non-renewable primary energy resources used as raw materials;

PENRT = Total use of non-renewable primary energy re-sources.

SM = Use of secondary material.

RSF = Use of renewable secondary fuels.

NRSF = Use of non-renewable secondary fuels;

FW = Use of net fresh water

Category	Unit	A1	A2	A3	A4	C2	C3	D
PERE	MJ	0,52	0,00	6,66	0,01	0	0	-15,98
PERM	MJ	5,86	0,02	2,76	0	0	0,02	2,53
PERT	MJ	6,4	0	14,7	0	0	0	-13,45
PENRE	MJ	15,0	0	25,9	0,5	0,5	0,5	-14,77
PENRM	MJ	86,5	2,7	10,9	0,0	0,0	0,5	69,57
PENRT	MJ	101,5	2,7	36,9	0,5	0,5	1,0	54,80
SM	Kg	0,8	0	0	0	0	0	-0,8
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	M3	2,90	0,01	0,57	0	0	0,02	-1,80

Use of resources 1m2 Ecosund 2200 gram/unit

Category	Unit	A1	A2	A3	A4	C2	C3	D
PERE	MJ	0,57	0	6,66	0,01	0	0	-21,09
PERM	MJ	6,73	0,03	2,88	0	0	0,02	3,34
PERT	MJ	7,3	0	14,7	0	0	0	-17,74
PENRE	MJ	17,3	0	25,9	0,6	0,5	0,6	-19,48
PENRM	MJ	105,3	3,6	11,3	0,0	0,0	0,6	91,78
PENRT	MJ	122,6	3,6	37,3	0,6	0,5	1,1	72,29
SM	Kg	1,2	0	0	0	0	0	-1,2
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	M3	2,90	0,01	0,57	0	0	0,02	-1,80

Use of resources 1m2 Ecosund 2600 gram/unit

Category	Unit	A1	A2	A3	A4	C2	C3	D
PERE	MJ	0,60	0	6,66	0,01	0	0	-24,49
PERM	MJ	7,31	0,03	2,97	0	0	0,03	3,88
PERT	MJ	7,9	0	14,7	0,0	0,0	0,0	-20,60
PENRE	MJ	18,9	0	25,9	0,7	0,5	0,6	-22,62
PENRM	MJ	117,7	4,2	11,6	0	0	0,6	106,58
PENRT	MJ	136,6	4,2	37,5	0,7	0,5	1,3	83,96
SM	Kg	1,4	0	0	0	0	0	-1,4
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	M3	2,90	0,01	0,57	0	0	0,02	-1,80



Waste production and output flows

Final waste and output flows, refers to flows that are leaving the system of the LCA. In this LCA only elementary flows (substances) are actually leaving the system.

The waste (plastic) from suppliers are going to municipal incineration with heat recovery. That is also the assumed end of life for the product. These waste treatments are included in the model. Thus, there are no final waste to declare.

Biogenic carbon content

Equation 1 Bio Carbon (uptake) according to ISO 16449

*Biogenic content*CarbonContent/ CarbonContent/(1+moisturefraction)*

Biogenic content 226 gram (in packaging)

Moisturefraction 0,12 share moisture in air

CarbonContent 0,5 share Carbon in Wood

Share of biogenic carbon	Unit	Amount
Biogenic carbon in the product	kg C	0,0
Biogenic carbon in the packaging	kg C	0,101



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