

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804 for:

EcoSUND RAW

from

Akustikmiljö i Falkenberg AB

akustikmiljö



Programme:

The International EPD® System, www.environdec.com

Programme operator:

EPD International AB

EPD registration number:

S-P-06013

Publication date:

2022-08-18

Valid until:

2027-08-18



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 ceiling and wall solutions C-PCR-014, version 2022-01-28.

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 Sverige 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.

Comparability between EPDs is only achievable if the following performance characteristics are equivalent: declared unit, containment level, level of working width, assumed service life, geographic region and fulfilment of the same requirements of the applicable standard (EN 13964:2014).

Company information

Owner of the EPD and location:

Akustikmiljö i Falkenberg AB, Sweden
Falkåsvägen 4, 311 21 Falkenberg

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 RAW

Product identification: The functional unit is 1m² EcoSund, class A sound absorption, RSL 50 years according to C-PCR-014.

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) 0,625 b) 0,455 c) 0,385

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.

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

¹ This is not the product weight per 1 m².

Content declaration

| Product components | Weight (g) | | | Post-consumer material (weight-%) | Renewable material (weight-%) |
|--------------------------------------|------------|------|------|-----------------------------------|-------------------------------|
| Variation (g/unit) | 1600 | 2200 | 2600 | | |
| Polyester polyetylentereftalat (PET) | 100% | 100% | 100% | 50% | |

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

| | EcoSUND | Biogenic (share of component and share of product) |
|---------------------|---------|--|
| wood (pallet) (g) | 35 | 100% |
| PE foil (g) | 2,5 | |
| Cardboard (g) | 191 | 100% |
| Product weight (kg) | 1,6 | |

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

LCA information

The complete Life Cycle Assessment report (Wendin & Lindroth, 2022) is available to the EPD verifier.

This is a product specific EPD for EcoSUND RAW.

| | |
|-------------------------------------|--|
| Declared Unit | 1m2 EcoSUND RAW sound absorption class A. are 3 densities (g/unit): 1600, 2200, 2600 |
| The function | The product are sound absorbents to customers from both the public and private sectors such as schools, offices, sports halls, and restaurants. The use of the product 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 2019. |
| Manufacturing Site | Falkenberg |
| Geographical Area | Europe, disposal is represented by Sweden. |
| Compliant with | 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). Sub-PCR C-PCR-014 Acoustical ceiling and wall solutions, version 2022-01-28. ² (EPD International, 2022), was used to set the goal and scope of the Life Cycle Assessment. 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). |
| Cut-Off Rules | The procedure below is followed for the exclusion of inputs and outputs according to the EN 15804:2012+ A2:2019 standard: No cut-offs have been made concerning specific data in this study. |
| Allocation | 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. The product EcoSUND dominates the production at Akustik miljö entirely, so allocation other products have not been required. |
| Key assumptions | A1: The share recycled polyester is 50% and it is post-consumer. A3: The cuttings are sent back to supplier to be recycled. The wood packaging material is returned and reused continuously. A4: The transport (Euro 6, 32-ton payload) to client is on average 150 km, with “sling logistics” to optimize the load factor. A5: As the installation is handmade, no energy or additional materials are required. C1: For same reasons as A5, no energy or additional materials are required for dismantling EcoSUND RAW. It is attached to the wall with metal clips and screws, that allow for easy dismantling without environmental aspects. C2: Transport 20 km with municipal waste collection. C3: The assumption is that the EcoSUND RAW 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. Product is recyclable, although incineration is a more conservative assumption and it is the most common waste treatment in Sweden currently. |

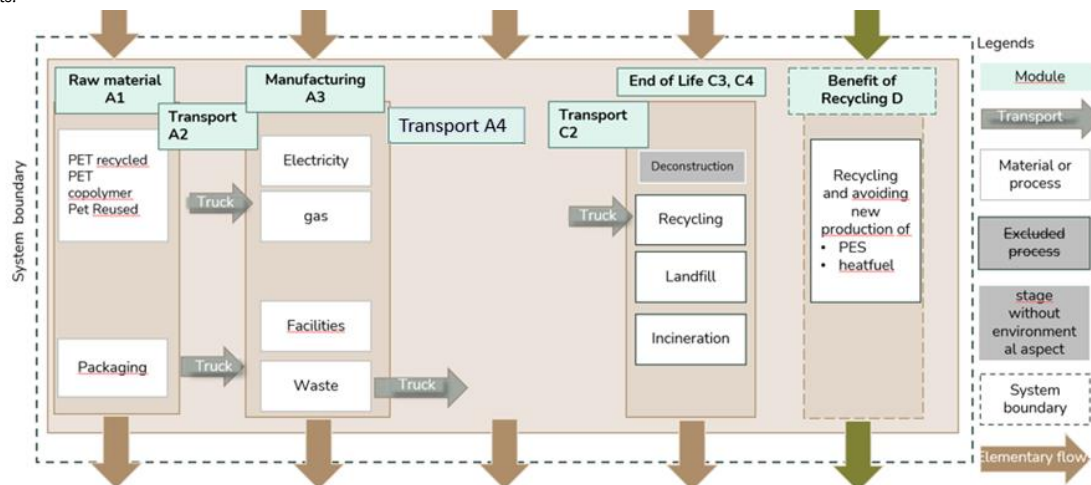
² Sub-PCR to PCR 2019:14 (v1.11)

akustikmiljö

| | |
|----------------------------------|---|
| | C4: Final disposal is not relevant for EcoSUND RAW. All the materials are incinerated. |
| Background Data | Ecoinvent 3.8 - allocation, Cut off. |
| 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 2019. |
| Foreground Data -specific | Manufacturing at Akustikmiljö I Falkenberg AB. Period of data collection 2021. |
| Electricity data | Electricity consumption in the A3 module is Goo-certified hydro power represented by data for national production of hydro power in Ecoinvent 3.8 regionalized for Sweden. |
| LCA software | SimaPro 9.3.0.3 |

| | 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) Below is system boundaries for the model of the product system. A5 and C1 do not have any environmental aspects.



Disclaimers about results for the environmental impact.

- Note that the LCIA results are relative expressions, which means that they do not predict impacts on category endpoints or the exceeding of thresholds, safety margins or risk.
- "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.
- 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 RAW 1600 gram/unit

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|---|--------------|----------|----------|----------|----------|----------|----------|-----------|
| Climate change - Fossil | kg CO2 eq | 2,84 | 1,72E-01 | 2,20E-01 | 2,60E-02 | 3,64E-02 | 3,43 | 2,08 |
| Climate change - Biogenic | kg CO2 eq | 1,63E-01 | 2,00E-04 | 2,86E-01 | 6,29E-05 | 3,23E-05 | 2,82E-01 | -4,83E-01 |
| Climate change - Land use and LU change | kg CO2 eq | 2,71E-03 | 9,42E-05 | 1,09E-01 | 9,74E-06 | 4,00E-06 | 1,08E-05 | -3,57E-03 |
| Climate change | kg CO2 eq | 3,00 | 1,72E-01 | 6,15E-01 | 2,60E-02 | 3,65E-02 | 3,71 | 1,59 |
| Ozone depletion | kg CFC11 eq | 7,00E-06 | 3,75E-08 | 2,09E-08 | 6,47E-09 | 7,90E-09 | 3,40E-09 | 9,74E-06 |
| Acidification | mol H+ eq | 1,18E-02 | 2,94E-03 | 1,71E-03 | 8,27E-05 | 2,30E-04 | 8,34E-04 | 6,30E-03 |
| Eutrophication, freshwater | kg PO4 eq | 2,35E-03 | 2,88E-05 | 2,96E-04 | 5,19E-06 | 2,00E-06 | 1,73E-05 | 1,78E-03 |
| Eutrophication, freshwater | kg P eq | 7,65E-04 | 9,37E-06 | 9,63E-05 | 1,69E-06 | 6,52E-07 | 5,65E-06 | 5,79E-04 |
| Eutrophication, marine | kg N eq | 2,79E-03 | 7,20E-04 | 6,36E-04 | 1,85E-05 | 9,25E-05 | 5,12E-04 | 1,45E-03 |
| Eutrophication, terrestrial | mol N eq | 2,41E-02 | 7,99E-03 | 5,81E-03 | 2,02E-04 | 1,02E-03 | 4,46E-03 | 8,24E-03 |
| Photochemical ozone formation | kg NMVOC eq | 1,34E-02 | 2,16E-03 | 1,17E-03 | 7,97E-05 | 3,58E-04 | 1,12E-03 | 8,66E-03 |
| Resource use, minerals and metals | kg Sb eq | 2,22E-05 | 3,27E-07 | 1,40E-06 | 6,21E-08 | 3,17E-08 | 9,84E-08 | -2,14E-05 |
| Resource use, fossils | MJ | 5,31E+01 | 2,49 | 2,89 | 4,23E-01 | 4,96E-01 | 2,68E-01 | 4,34E+01 |
| Water use | m3 depriv. | 1,36 | 6,96E-03 | 5,99E-01 | 1,41E-03 | 4,30E-04 | 5,88E-03 | 1,12 |
| Particulate matter | disease inc. | 1,05E-07 | 1,03E-08 | 2,24E-08 | 2,27E-09 | 4,93E-09 | 5,21E-09 | 5,45E-08 |
| Ionising radiation | kBq U-235 eq | 2,61E-01 | 1,16E-02 | 2,44E-02 | 2,14E-03 | 2,22E-03 | 9,90E-04 | 1,00E-01 |
| Ecotoxicity, freshwater | CTUe | 5,36E+01 | 1,84 | 7,89 | 3,30E-01 | 2,78E-01 | 1,30 | -8,86 |
| Human toxicity, cancer | CTUh | 1,73E-09 | 8,00E-11 | 3,52E-10 | 9,00E-12 | 4,98E-12 | 5,93E-10 | 1,00E-09 |
| Human toxicity, non-cancer | CTUh | 3,08E-08 | 1,62E-09 | 5,13E-09 | 3,47E-10 | 1,88E-10 | 8,50E-09 | 1,69E-08 |
| Land use | Pt | 9,35 | 1,78 | 9,65 | 4,83E-01 | 8,65E-02 | 9,05E-02 | -5,13E+01 |

Potential environmental impact: 1m2 EcoSUND RAW 2200 gram/unit

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|--|--------------|----------|----------|----------|----------|----------|----------|-----------|
| Climate change - Fossil | kg CO2 eq | 3,90 | 2,37E-01 | 2,20E-01 | 3,38E-02 | 3,64E-02 | 4,70 | 2,86 |
| Climate change - Biogenic | kg CO2 eq | 2,25E-01 | 2,75E-04 | 2,86E-01 | 8,18E-05 | 3,23E-05 | 2,82E-01 | -6,64E-01 |
| Climate change - Land use and LU change | kg CO2 eq | 3,73E-03 | 1,30E-04 | 1,09E-01 | 1,27E-05 | 4,00E-06 | 1,37E-05 | -4,91E-03 |
| Climate change | kg CO2 eq | 4,13 | 2,37E-01 | 6,15E-01 | 3,39E-02 | 3,65E-02 | 4,99 | 2,19 |
| Ozone depletion | kg CFC11 eq | 9,62E-06 | 5,16E-08 | 2,09E-08 | 8,43E-09 | 7,90E-09 | 4,46E-09 | 1,34E-05 |
| Acidification | mol H+ eq | 1,62E-02 | 4,04E-03 | 1,71E-03 | 1,08E-04 | 2,30E-04 | 1,12E-03 | 8,66E-03 |
| Eutrophication, freshwater | kg PO4 eq | 3,22E-03 | 3,96E-05 | 2,96E-04 | 6,75E-06 | 2,00E-06 | 2,18E-05 | 2,44E-03 |
| Eutrophication, freshwater | kg P eq | 1,05E-03 | 1,29E-05 | 9,63E-05 | 2,20E-06 | 6,52E-07 | 7,10E-06 | 7,95E-04 |
| Eutrophication, marine | kg N eq | 3,84E-03 | 9,90E-04 | 6,36E-04 | 2,41E-05 | 9,25E-05 | 6,91E-04 | 1,99E-03 |
| Eutrophication, terrestrial | mol N eq | 3,31E-02 | 1,10E-02 | 5,81E-03 | 2,63E-04 | 1,02E-03 | 6,02E-03 | 1,13E-02 |
| Photochemical ozone formation | kg NMVOC eq | 1,85E-02 | 2,97E-03 | 1,17E-03 | 1,04E-04 | 3,58E-04 | 1,51E-03 | 1,19E-02 |
| Resource use, minerals and metals | kg Sb eq | 3,06E-05 | 4,49E-07 | 1,40E-06 | 8,08E-08 | 3,17E-08 | 1,29E-07 | -2,94E-05 |
| Resource use, fossils | MJ | 7,30E+01 | 3,42 | 2,89 | 5,50E-01 | 4,96E-01 | 3,50E-01 | 5,97E+01 |
| Water use | m3 depriv. | 1,87 | 9,56E-03 | 5,99E-01 | 1,84E-03 | 4,30E-04 | 7,75E-03 | 1,54 |
| Particulate matter | disease inc. | 1,44E-07 | 1,42E-08 | 2,24E-08 | 2,95E-09 | 4,93E-09 | 6,99E-09 | 7,49E-08 |
| Ionising radiation | kBq U-235 eq | 3,59E-01 | 1,59E-02 | 2,44E-02 | 2,78E-03 | 2,22E-03 | 1,31E-03 | 1,38E-01 |
| Ecotoxicity, freshwater | CTUe | 7,38E+01 | 2,53 | 7,89 | 4,29E-01 | 2,78E-01 | 1,68 | -1,22E+01 |
| Human toxicity, cancer | CTUh | 2,38E-09 | 1,10E-10 | 3,52E-10 | 1,17E-11 | 4,98E-12 | 8,06E-10 | 1,38E-09 |
| Human toxicity, non-cancer | CTUh | 4,24E-08 | 2,23E-09 | 5,13E-09 | 4,52E-10 | 1,88E-10 | 1,14E-08 | 2,33E-08 |
| Land use | Pt | 1,29E+01 | 2,45 | 9,65 | 6,29E-01 | 8,65E-02 | 1,15E-01 | -7,06E+01 |

Potential environmental impact: 1m2 EcoSUND RAW 2600 gram/unit

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|---|--------------|----------|----------|----------|----------|----------|----------|-----------|
| Climate change - Fossil | kg CO2 eq | 4,61 | 2,80E-01 | 2,20E-01 | 3,90E-02 | 3,64E-02 | 5,56 | 3,38 |
| Climate change - Biogenic | kg CO2 eq | 2,66E-01 | 3,25E-04 | 2,86E-01 | 9,45E-05 | 3,23E-05 | 2,82E-01 | -7,85E-01 |
| Climate change - Land use and LU change | kg CO2 eq | 4,41E-03 | 1,53E-04 | 1,09E-01 | 1,46E-05 | 4,00E-06 | 1,56E-05 | -5,80E-03 |
| Climate change | kg CO2 eq | 4,88 | 2,80E-01 | 6,15E-01 | 3,91E-02 | 3,65E-02 | 5,84 | 2,59 |
| Ozone depletion | kg CFC11 eq | 1,14E-05 | 6,10E-08 | 2,09E-08 | 9,73E-09 | 7,90E-09 | 5,17E-09 | 1,58E-05 |
| Acidification | mol H+ eq | 1,91E-02 | 4,78E-03 | 1,71E-03 | 1,24E-04 | 2,30E-04 | 1,32E-03 | 1,02E-02 |
| Eutrophication, freshwater | kg PO4 eq | 3,81E-03 | 4,67E-05 | 2,96E-04 | 7,77E-06 | 2,00E-06 | 2,47E-05 | 2,89E-03 |
| Eutrophication, freshwater | kg P eq | 1,24E-03 | 1,52E-05 | 9,63E-05 | 2,53E-06 | 6,52E-07 | 8,06E-06 | 9,40E-04 |
| Eutrophication, marine | kg N eq | 4,54E-03 | 1,17E-03 | 6,36E-04 | 2,78E-05 | 9,25E-05 | 8,10E-04 | 2,35E-03 |
| Eutrophication, terrestrial | mol N eq | 3,92E-02 | 1,30E-02 | 5,81E-03 | 3,04E-04 | 1,02E-03 | 7,07E-03 | 1,34E-02 |
| Photochemical ozone | kg NMVOC | 2,18E-02 | 3,51E-03 | 1,17E-03 | 1,20E-04 | 3,58E-04 | 1,78E-03 | 1,41E-02 |
| Resource use, minerals and metals | kg Sb eq | 3,61E-05 | 5,31E-07 | 1,40E-06 | 9,33E-08 | 3,17E-08 | 1,49E-07 | -3,47E-05 |
| Resource use, fossils | MJ | 8,63E+01 | 4,04 | 2,89 | 6,35E-01 | 4,96E-01 | 4,04E-01 | 7,05E+01 |
| Water use | m3 depriv. | 2,20 | 1,13E-02 | 5,99E-01 | 2,12E-03 | 4,30E-04 | 8,99E-03 | 1,82 |
| Particulate matter | disease inc. | 1,71E-07 | 1,68E-08 | 2,24E-08 | 3,41E-09 | 4,93E-09 | 8,17E-09 | 8,85E-08 |
| Ionising radiation | kBq U-235 eq | 4,25E-01 | 1,88E-02 | 2,44E-02 | 3,21E-03 | 2,22E-03 | 1,52E-03 | 1,63E-01 |
| Ecotoxicity, freshwater | CTUe | 8,72E+01 | 2,99 | 7,89 | 4,96E-01 | 2,78E-01 | 1,94 | -1,44E+01 |
| Human toxicity, cancer | CTUh | 2,81E-09 | 1,30E-10 | 3,52E-10 | 1,35E-11 | 4,98E-12 | 9,48E-10 | 1,63E-09 |
| Human toxicity, non-cancer | CTUh | 5,01E-08 | 2,63E-09 | 5,13E-09 | 5,21E-10 | 1,88E-10 | 1,33E-08 | 2,75E-08 |
| Land use | Pt | 1,52E+01 | 2,89 | 9,65 | 7,26E-01 | 8,65E-02 | 1,31E-01 | -8,34E+01 |

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

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|-----------------|-----------|----------|----------|----------|----------|----------|----------|----------|
| IPCC GWP 100a | kg CO2 eq | 2,83E+00 | 1,71E-01 | 3,45E-01 | 2,58E-02 | 3,61E-02 | 3,42E+00 | 2,01E+00 |

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

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|-----------------|-----------|----------|----------|----------|----------|----------|----------|----------|
| IPCC GWP 100a | kg CO2 eq | 3,90E+00 | 2,35E-01 | 3,45E-01 | 3,35E-02 | 3,61E-02 | 4,70E+00 | 2,77E+00 |

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

| Impact category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|-----------------|-----------|----------|----------|----------|----------|----------|----------|----------|
| IPCC GWP 100a | kg CO2 eq | 4,60E+00 | 2,78E-01 | 3,45E-01 | 3,87E-02 | 3,61E-02 | 5,55E+00 | 3,27E+00 |



Use of resources 1m2 EcoSUND RAW 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 | 1,29E-01 | 0,00E+00 | 1,03E+01 | 5,37E-03 | 1,93E-03 | 0,00E+00 | -1,35E+01 |
| PERM | MJ | 2,39E+00 | 2,33E-02 | 2,67E+00 | 0,00E+00 | 0,00E+00 | 1,12E-02 | 2,06E+00 |
| PERT | MJ | 2,52E+00 | 2,33E-02 | 1,29E+01 | 5,37E-03 | 1,93E-03 | 1,12E-02 | -1,15E+01 |
| PENRE | MJ | 6,01E+00 | 0,00E+00 | 2,59E+01 | 4,49E-01 | 5,27E-01 | 2,91E-01 | -1,24E+01 |
| PENRM | MJ | 5,00E+01 | 2,64E+00 | 3,98E+00 | 0,00E+00 | 0,00E+00 | 2,91E-01 | 5,91E+01 |
| PENRT | MJ | 5,60E+01 | 2,64E+00 | 2,99E+01 | 4,49E-01 | 5,27E-01 | 5,82E-01 | 4,66E+01 |
| SM | Kg | 8,00E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -8,00E-01 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | M3 | 4,62E-02 | 3,99E-04 | 1,17E-02 | 8,73E-05 | 3,91E-05 | 1,97E-03 | 3,86E-02 |

Use of resources 1m2 EcoSUND RAW 2200 gram/unit

| Category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|----------|------|----------|----------|----------|----------|----------|----------|-----------|
| PERE | MJ | 1,77E-01 | 0,00E+00 | 1,03E+01 | 6,99E-03 | 1,93E-03 | 0,00E+00 | -1,86E+01 |
| PERM | MJ | 3,28E+00 | 3,21E-02 | 2,79E+00 | 0,00E+00 | 0,00E+00 | 1,48E-02 | 2,83E+00 |
| PERT | MJ | 3,46E+00 | 3,21E-02 | 1,31E+01 | 6,99E-03 | 1,93E-03 | 1,48E-02 | -1,57E+01 |
| PENRE | MJ | 8,26E+00 | 0,00E+00 | 2,59E+01 | 5,84E-01 | 5,27E-01 | 3,79E-01 | -1,71E+01 |
| PENRM | MJ | 6,88E+01 | 3,63E+00 | 4,37E+00 | 0,00E+00 | 0,00E+00 | 3,79E-01 | 8,12E+01 |
| PENRT | MJ | 7,71E+01 | 3,63E+00 | 3,03E+01 | 5,84E-01 | 5,27E-01 | 7,58E-01 | 6,41E+01 |
| SM | Kg | 1,10E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -1,10E+00 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | M3 | 6,35E-02 | 5,48E-04 | 1,20E-02 | 1,14E-04 | 3,91E-05 | 2,66E-03 | 5,31E-02 |

Use of resources 1m2 EcoSUND RAW 2600 gram/unit

| Category | Unit | A1 | A2 | A3 | A4 | C2 | C3 | D |
|----------|------|----------|----------|----------|----------|----------|----------|-----------|
| PERE | MJ | 2,09E-01 | 0,00E+00 | 1,03E+01 | 8,07E-03 | 1,93E-03 | 0,00E+00 | -2,20E+01 |
| PERM | MJ | 3,88E+00 | 3,79E-02 | 2,87E+00 | 0,00E+00 | 0,00E+00 | 1,72E-02 | 3,34E+00 |
| PERT | MJ | 4,09E+00 | 3,79E-02 | 1,31E+01 | 8,07E-03 | 1,93E-03 | 1,72E-02 | -1,86E+01 |
| PENRE | MJ | 9,76E+00 | 0,00E+00 | 2,59E+01 | 6,74E-01 | 5,27E-01 | 4,38E-01 | -2,02E+01 |
| PENRM | MJ | 8,13E+01 | 4,29E+00 | 4,63E+00 | 0,00E+00 | 0,00E+00 | 4,38E-01 | 9,60E+01 |
| PENRT | MJ | 9,11E+01 | 4,29E+00 | 3,05E+01 | 6,74E-01 | 5,27E-01 | 8,76E-01 | 7,58E+01 |
| SM | Kg | 1,30E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | -1,30E+00 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| FW | M3 | 7,51E-02 | 6,48E-04 | 1,21E-02 | 1,31E-04 | 3,91E-05 | 3,12E-03 | 6,28E-02 |



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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