

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

ACOUSTERA FELT ACOUSTIC PANELS



EPD-Global

Owner of the declaration:

ACOUSTERA YAPI MALZEMELERI INSAAT VE TASARIM A.S.

Product:

ACOUSTERA FELT ACOUSTIC PANELS

Declared unit:

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 026:2024 Part B for Furniture

Program operator:

EPD-Global

Declaration number:

NEPD-17694-22192

Issue date:

18.09.2026

Valid to:

18.09.2031

EPD software:

LCAno EPD generator ID: 1690403

General information

Product

ACOUSTERA FELT ACOUSTIC PANELS

Program operator:

EPD-Global
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-global.com

Declaration number:

NEPD-17694-22192

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 026:2024 Part B for Furniture

Statement of liability:

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

Declared unit:

1 pcs ACOUSTERA FELT ACOUSTIC PANELS

Declared unit (cradle to gate) with option:

A1-A3, A4, A5, C1, C2, C3, C4, D

Functional unit:

1 m2 of ACOUSTERA FELT ACOUSTIC PANELS (12mm thickness)
including packaging

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-Global'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-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global'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 EPD-Global'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:

ACOUSTERA YAPI MALZEMELERI INSAAT VE TASARIM A.S.
Contact person: S. Kerem Özmen
Phone:
e-mail: kerem@acoustera.com

Manufacturer:

ACOUSTERA YAPI MALZEMELERI INSAAT VE TASARIM A.S.

Place of production:

ACOUSTERA YAPI MALZEMELERI INSAAT VE TASARIM A.S.
Kültür Mahallesi Öz Sokak Öz Ishani No:1 D 81010 Merkez
Düzce, Türkiye

Management system:

ISO 9001, ISO 14001, ISO 45001, ISO 27001, ISO 50001 and ISO 10002

Organisation no:

0051428998

Issue date:

18.09.2026

Valid to:

18.09.2031

Year of study:

2026

Comparability:

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not viewed in a building context.

Development and verification of EPD:

The declaration is created using EPD generator v2025.09, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global.

Developer of EPD: Eren Yaman - ERKE Sustainability Consultancy

Reviewer of company-specific input data and EPD: Børge Heggen Johansen, Energiråd AS

Approved:



Håkon Hauan, CEO EPD-Global

Product

Product description:

Acoustera products are modular acoustic panels made from 100% polyester industrial PET felt. Combining aesthetic design with superior acoustic performance, they offer modern noise management solutions for offices, educational facilities, and public spaces.

Product specification

It is a high-performance, sustainable interior solution designed to enhance acoustic comfort by optimizing the sound absorption coefficient in interior spaces, control reverberation time, and ensure structural noise control.

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Textile - Felt	2.50	100.00	1.50	60.00
Total	2.50	100.00	1.50	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	0.014	4.59	0.014	100.00
Packaging - Plastic	0.0829	27.19	0.052	62.73
Packaging - Wood	0.208	68.22	0.00	0.00
Total incl. packaging	2.80	100.00	1.57	

Technical data:

The reference product is a 12 mm thick ACOUSTERA FELT Acoustic Panel made of 100% polyester (PET) felt. The product provides acoustic absorption performance with an NRC value of 1.0. The product is classified as B-s1, d0 for reaction to fire and Class A according to ASTM E84.

Parameter	Value
Material	100% Polyester PET Felt
Thickness	12mm
Fire Resistance	B-s1, d0, ASTM E84-A Class
Sound Absorption Performance	NRC: 1.0

Market:

Global

Reference service life, product

The reference service life of acoustic panels is estimated to be 15 years, in accordance with NPCR 026:2024 for Furniture. The actual lifespan of the product depends on maintenance and context of use.

Reference service life, building

Not relevant.

LCA: Calculation rules

Declared unit:

1 pcs ACOUSTERA FELT ACOUSTIC PANELS

Cut-off criteria:

All major raw materials and all the essential energy are included. The production processes for raw materials and energy flows with very small amounts (less than 1%) may not be 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.

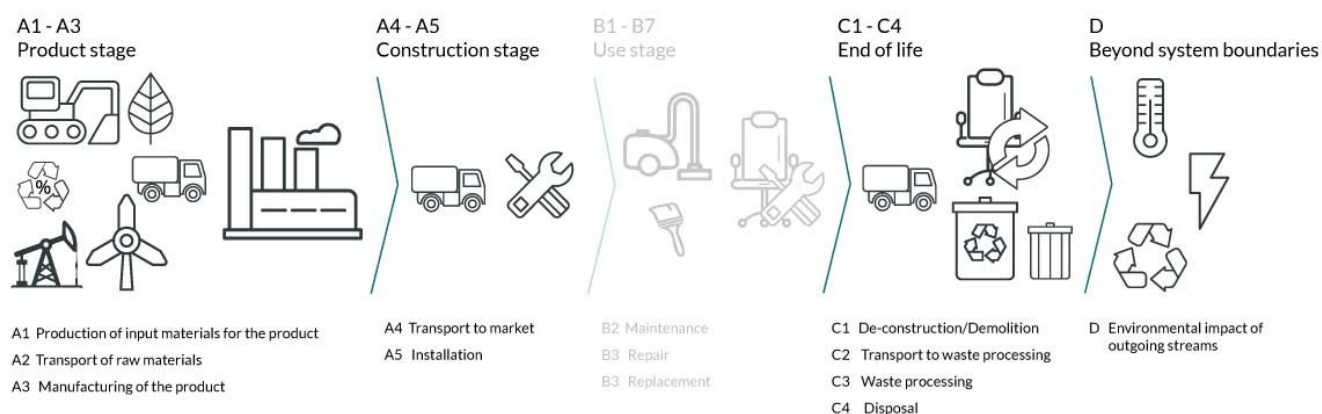
Materials	Source	Data quality	Year
Packaging - Cardboard	Modified ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.10.1	Database	2023
Packaging - Wood	ecoinvent 3.10.1	Database	2023
Textile - Felt	Modified ecoinvent 3.10.1	Database	2023

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	MND	MND	MND	MND	MND	MND	MND		X	X	X	X	X

System boundary:

Cradle to gate with options, modules A1-A3, A4, A5, C, and D



Additional technical information:

LCA: Scenarios and additional technical information

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

A4 – Transport to the construction site: Distribution is assumed as 60% to Türkiye and Europe, 25% to the Middle East and North Africa, and 15% to the Americas and Asia-Pacific. Weighted average transport distances of 1,310 km by road and 1,850 km by sea are considered.

A5 – Installation: Packaging waste generated during installation is considered. The adhesive used for product installation is also included.

* C1 – Deconstruction/Demolition: The product is manually dismantled; therefore, no energy consumption is considered.

C2 – Transport: An average transport distance of 100 km by truck to the end-of-life treatment facility is considered.

C3 – Waste processing: The felt component is assumed to be 100% recycled at end of life.

C4 – Disposal: No disposal is considered for the felt component, as it is assumed to be fully recycled at end of life.

D – Benefits and loads beyond the system boundary: Benefits from the recycling of the felt component at end of life are considered as avoided production of equivalent virgin material.

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 %	1850.00	0.034	l/tkm	62.90
Truck, 16-32 tonnes, EURO 6 (km)	36.7 %	1310.00	0.043	l/tkm	56.33
Assembly (A5)	Unit	Value			
Waste, packaging, wood (kg) (A5 included)	kg	0.208			
Waste, packaging, cardboard and paper, to average treatment (kg)	kg	0.014			
Waste, plastic, mixture, to average treatment - A5 including transport (kg)	kg	0.052			
Water based adhesive (kg) - RER	kg	0.20			
Waste, packaging, plastic, mixture, to average treatment (kg)	kg	0.0309			
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 %	100.00	0.043	l/tkm	4.30
Waste processing (C3)	Unit	Value			
Waste treatment per kg Plastics, from incineration - C3 (kg)	kg	2.70			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of thermal energy, district heating (MJ)	MJ	0.000006798			
Substitution of electricity, in Norway (MJ)	MJ	0.000000173			
Substitution of electricity (MJ)	MJ	0.0002546			
Substitution of electricity (MJ)	MJ	0.000002591			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	0.000000168			
Substitution, Packaging, Pallet, EUR wooden pallet, single use (kg)	kg	0.1344			
Substitution of thermal energy, district heating (MJ)	MJ	0.0005366			

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	C1	C2	C3	C4	D
	GWP-total	kg CO ₂ -eq	1.26E+01	1.17E+00	9.68E-01	0	4.59E-02	6.43E+00	0	1.63E-01
	GWP-fossil	kg CO ₂ -eq	1.26E+01	1.17E+00	6.03E-01	0	4.59E-02	6.43E+00	0	-3.34E-02
	GWP-biogenic	kg CO ₂ -eq	-2.02E-02	3.97E-04	3.65E-01	0	1.90E-05	4.33E-04	0	1.97E-01
	GWP-luluc	kg CO ₂ -eq	1.90E-02	5.70E-04	4.90E-04	0	1.63E-05	4.97E-05	0	-1.69E-04
	ODP	kg CFC11 -eq	1.78E-05	2.51E-07	1.17E-08	0	1.04E-08	2.37E-09	0	-2.30E-07
	AP	mol H ⁺ -eq	6.76E-02	2.04E-02	7.21E-03	0	1.32E-04	1.46E-03	0	-1.84E-04
	EP-FreshWater	kg P -eq	3.72E-03	6.99E-06	1.96E-04	0	3.67E-07	2.00E-05	0	-1.15E-05
	EP-Marine	kg N -eq	1.33E-02	5.01E-03	5.45E-04	0	2.61E-05	8.33E-04	0	-5.60E-05
	EP-Terrestrial	mol N -eq	1.71E-01	5.57E-02	5.07E-03	0	2.92E-04	7.10E-03	0	-6.29E-04
	POCP	kg NMVOC -eq	6.58E-02	1.49E-02	2.53E-03	0	1.12E-04	1.78E-03	0	-2.74E-04
	ADP-minerals&metals ¹	kg Sb-eq	1.08E-04	2.04E-05	5.50E-06	0	1.27E-06	4.61E-07	0	-1.92E-07
	ADP-fossil ¹	MJ	1.99E+02	1.64E+01	9.46E+00	0	6.94E-01	1.25E+00	0	-5.85E-01
	WDP ¹	m ³	-5.36E+01	1.02E+01	5.38E-01	0	6.71E-01	4.23E-01	0	-2.19E-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"

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

The LCA results in the EPD are calculated using a specific methodological approach for accounting energy resources, see the additional requirements section for more information. In this EPD the following approach was used: Location-based approach.

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
 PM	Disease incidence	8.91E-07	5.24E-08	3.69E-08	0	2.81E-09	7.55E-09	0	-3.36E-09
 IRP ²	kgBq U235 -eq	9.99E-01	7.11E-02	6.36E-02	0	3.03E-03	2.26E-03	0	-3.51E-03
 ETP-fw ¹	CTUe	7.22E+01	1.09E+01	5.36E+00	0	5.14E-01	1.26E+01	0	-1.56E-01
 HTP-c ¹	CTUh	4.96E-09	0.00E+00	2.76E-10	0	0.00E+00	5.48E-10	0	-2.09E-10
 HTP-nc ¹	CTUh	1.25E-07	1.26E-08	2.05E-08	0	5.62E-10	1.92E-08	0	-3.86E-10
 SQP ¹	dimensionless	1.03E+02	7.28E+00	2.89E+00	0	4.85E-01	3.52E-01	0	-1.75E+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)

"Reading example: 9.0 E-03 = 9.0×10^{-3} = 0.009"

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	C1	C2	C3	C4	D
	PERE	MJ	2.21E+01	1.76E-01	8.04E-01	0	9.93E-03	5.14E-02	0	-1.31E+00
	PERM	MJ	3.05E+00	0.00E+00	-3.15E+00	0	0.00E+00	0.00E+00	0	-1.92E+00
	PERT	MJ	2.51E+01	1.76E-01	-2.35E+00	0	9.93E-03	5.14E-02	0	-3.23E+00
	PENRE	MJ	1.74E+02	1.64E+01	6.13E+00	0	6.94E-01	1.25E+00	0	-4.58E-01
	PENRM	MJ	5.31E+01	0.00E+00	6.26E-01	0	0.00E+00	0.00E+00	0	0.00E+00
	PENRT	MJ	2.27E+02	1.64E+01	6.76E+00	0	6.94E-01	1.25E+00	0	-4.58E-01
	SM	kg	1.66E+00	0.00E+00	8.47E-03	0	0.00E+00	0.00E+00	0	0.00E+00
	RSF	MJ	1.76E-01	5.82E-03	1.09E-04	0	3.55E-04	3.74E-05	0	-6.48E-02
	NRSF	MJ	9.63E-03	1.66E-02	2.94E-05	0	1.27E-03	0.00E+00	0	-1.64E-05
	FW	m ³	1.03E-01	1.32E-03	1.26E-02	0	7.42E-05	7.25E-03	0	-5.08E-04

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"

End of life - Waste										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 HWD	kg	8.04E-01	7.64E-04	8.97E-02	0	3.58E-05	1.11E-01	0	-2.51E-03	
 NHWD	kg	5.76E+01	4.58E-01	4.60E+00	0	3.38E-02	2.99E+00	0	-6.40E-02	
 RWD	kg	2.84E-04	1.13E-04	1.62E-05	0	4.73E-06	5.74E-07	0	-9.12E-07	

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"

End of life - Output flow										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 CRU	kg	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00	
 MFR	kg	0.00E+00	0.00E+00	1.84E-01	0	0.00E+00	0.00E+00	0	0.00E+00	
 MER	kg	0.00E+00	0.00E+00	2.60E-06	0	0.00E+00	0.00E+00	0	0.00E+00	
 EEE	MJ	0.00E+00	0.00E+00	1.28E-05	0	0.00E+00	2.55E-04	0	0.00E+00	
 EET	MJ	0.00E+00	0.00E+00	7.90E-05	0	0.00E+00	5.37E-04	0	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"

Biogenic Carbon Content		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	9.91E-02

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

The EPD presents environmental impact categories in the main results tables using a specific methodological approach for accounting energy resources. To ensure transparency and support informed interpretation, the table below explains the implications of the chosen methodology. It illustrates the GWP-total for energy resources used in the manufacturing stage, comparing the location-based and market-based approaches. In this EPD the following approach was used in main result tables: Location-based approach.

Electricity mix	Source	Amount	Unit	GWPtotal [kg CO ₂ /Unit]	SUM [kg CO ₂]
Location-based approach.					
Electricity, Turkey (kWh)	ecoinvent 3.6	6.06E-01	kWh	6.67E-01	4.04E-01
Market-based approach.					

"Reading example: 9.0 E-03 = $9.0 \cdot 10^{-3}$ = 0.009"

Dangerous substances

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

Indoor environment

VOC testing was conducted using GC-MS Headspace analysis. The tested VOC compounds were not detected (N.D.), with a reporting limit of 2 mg/kg.

Additional Environmental Information

Key Environmental Indicators

Key environmental performance indicators	Unit	Product stage	Construction stage		End-of-life				Net benefits and loads from reuse, recovery, and/or recycling
		A1-A3	A4	A5	C1	C2	C3	C4	D
GWPtotal	kg CO ₂ -eq	12.64	1.17	0.97	0.00	0.05	6.43	0.00	0.16
Total energy consumption	MJ	196.54	16.59	6.94	0.00	0.71	1.30	0.00	-1.84
Share of recycled materials	%	55.83							

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

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	1.29E+01	1.17E+00	6.04E-01	0	4.59E-02	6.43E+00	0	-3.37E-02

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.

Bibliography

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 NPCR 026 Part B for Furniture. Ver. 3.0 October 2024, EPD-Norge.

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