ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-UOY-200190082-CBC1-EN
Issue date	17/09/2019
Valid to	16/09/2024

Zero Sound

Upofloor Oy, Finland

Institut Bauen und Umwelt e.V.

www.ibu-epd.com / https://epd-online.com

UPOFLOOR®

General Information

Upofloor

Programme holder
IBU - Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-UOY-200190082-CBC1-EN

This declaration is based on the product category rules:
Floor coverings, 02/2018
(PCR checked and approved by the SVR)

Issue date
17/09/2019

Valid to
16/09/2024

Dipl. Ing. Hans Peters
(President of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director IBU)

Zero Sound

Owner of the declaration
Upofloor Oy
Souranderintie 2
FI- 37101 Nokia
Finland

Declared product / declared unit
Zero Sound, installed / 1 m^2

Scope:
In this EPD acoustic resilient Enomer floor coverings with sound insulation backing are declared. The application of this EPD is restricted to **Zero Sound** manufactured by Upofloor Oy.

This thickness of the product is 3.6 mm. Product standard is EN 14565: Resilient floor covering based upon synthetic termoplastic polymers.

Data is based upon production during 2017 at the manufacturing site in Finland.

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

Verification

The standard /EN 15804/ serves as the core PCR
Independent verification of the declaration and data according to /ISO 14025:2010/
☐ internally ☒ externally

Prof. Dr. Birgit Grahl
(Independent verifier appointed by SVR)

Product

Product description / Product definition
Resilient floor coverings are an entire product family of flexible flooring solutions available in sheets, tiles and planks. They are classified as having heterogeneous or homogeneous compositions based on vinyl, linoleum, cork, rubber or synthetic thermoplastic polymers. Resilient floor coverings can provide different functionalities (acoustic, static control, slip resistance, easy maintenance, etc.) to match a wide range of domestic, commercial and industrial applications. They are available in a very wide range of patterns and colours fitting with inspiration and decorative needs.
This EPD applies to acoustic Enomer sheet manufactured by Upofloor.

Acoustic Enomer products are based upon synthetic thermoplastic polymers according /EN 14565/ and are supplied in roll form with the product name Zero Sound.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) /Regulation (EU) No. 305/2011 (CPR)/ applies. The product needs a declaration of performance taking into consideration /EN 14041:2004: Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics/ and the CE-marking. For the application and use the respective national provisions apply.

Application
According to /ISO 10874/ (previously EN 685) the area of application for resilient floor coverings is indicated by use classes. The declared product group covers the use classes 23, 34 and 43.

Technical Data

Constructional data

Name	Value	Unit

Product thickness	3.6	mm
Grammage	3850	g/m²
Product Form	Sheet	-
Width	145	cm

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to /EN 14041:2004, Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics/.

Base materials / Ancillary materials

The product has the following composition:

Mineral filler from natural source (45- 55%)
Thermoplastic binder (Ethylene Copolymers, 25 - 35%)
Colour pigments (approx 2%)
Acrylate polymers (<1%)
PU foam backing (10 -20%)

This product contains substances listed in the candidate list (15.01.2019) exceeding 0.1 percentage by mass: no

Reference service life

This EPD does not indicate RSL. Only module B2 (maintenance) is declared and the use stage scenario is independent on the life time of the product. The declared modules in the table of results (chapter 5) refer to one life cycle of the floor covering with B2 (cleaning) being declared for a time period of one year. For the calculation of the impact of B2 for a different time period the values for B2 should be multiplied by the estimated service life in years.

LCA: Calculation rules

Declared Unit
1 m² of installed floor covering.

Declared unit

Name	Value	Unit
Declared unit	1	m²
Conversion factor to 1 kg	0.263	-

with a grammage of 3850 g/m².

System boundary
Type of EPD: cradle to gate with options

Modules A1-A3 cover processes that provide materials and energy input for the system, manufacturing and transport processes up to the factory gate, as well as waste processing.

Module A4 covers transport of the floor covering to the place of installation.

Module A5 covers the production of adhesive for the installation of the floor covering, and incineration of offcuts and packaging material.

Module B2 covers provision of cleaning agent, energy and water consumption for the cleaning of the floor covering incl. waste water treatment. The LCA results in this EPD are declared for a one year usage.

Module C1 considers electricity supply for the deconstruction of the flooring.

Module C2 covers transportation of the postconsumer waste to waste processing.

End of life scenarios are declared for:
1. 100% incineration in a waste incineration plant (WIP)
2. 100% landfilling

Module D accounts for potential benefits from all net flows given in module A5 and C3 that leave the product system boundary after having passed the end-of-waste state in
the form of recovery and/or recycling potentials.
Module D is declared separately for each scenario.

Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

. For the calculation of the LCA the database /GaBi ts/ was used.

LCA: Scenarios and additional technical information

The following technical information is a basis for the declared modules:

Transport to the construction site (A4)

Name	Value	Unit
Transport distance	2000	km
Capacity utilisation (including empty runs)	85	%

Installation in the building (A5)

Name	Value	Unit
Auxiliary	0.3	kg
Material loss (installation waste)	6	%

Maintenance (B2)

Name	Value	Unit
Water consumption	0.003	m³
Auxiliary (detergent)	0.04	kg
Electricity consumption	0.55	kWh
Maintenance cycle (vacuum cleaning & wet cleaning)	156	Number/a

End of Life (C1-C4)

Name	Value	Unit

Energy recovery	3.85	kg
Landfilling	3.85	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information
For module D the potential benefits given in module A5 and C3 are declared. For waste incineration combustion in a WIP (R1 > 0.6) with energy recuperation is considered.

LCA: Results

The results for module B2 refer to a period of one year. To calculate the impact of B2 for a specific service life the values for B2 should be multiplied by the estimated service life in years.
Scenario C3/1-C4/1-D1 = 100% Incineration
Scenario C3/2-C4/2-D2 = 100% Landfilling
The evaluation of best End of Life (EoL) scenario requires the consideration of further aspects like avoidance of combustion of fossil fuels when incinerated and demand for landfilling when recycled.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	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	X	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² Zero Sound installed (3,85 kg/m²)

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
GWP	[kg CO_2-Eq.]	17.10	0.36	1.73	0.28	0.01	0.04	5.09	0.00	0.00	0.27	-2.18	-0.14
ODP	[kg CFC11-Eq.]	1.56E-9	9.84E-15	1.01E-10	1.03E-12	5.53E-14	9.72E-16	1.56E-12	0.00E+0	0.00E+0	7.30E-14	-4.09E-12	-2.65E-13
AP	[kg SO_2-Eq.]	3.77E-2	7.87E-4	3.07E-3	7.28E-4	3.53E-5	7.77E-5	7.14E-4	0.00E+0	0.00E+0	7.39E-4	-3.33E-3	-2.15E-4
EP	[kg $(PO_4)^{3-}$-Eq.]	4.45E-3	1.99E-4	4.40E-4	9.38E-5	3.31E-6	1.96E-5	1.47E-4	0.00E+0	0.00E+0	7.55E-4	-3.72E-4	-2.39E-5
POCP	[kg ethene-Eq.]	3.78E-3	-2.57E-4	3.15E-4	5.93E-5	2.21E-6	-2.54E-5	6.46E-5	0.00E+0	0.00E+0	8.07E-5	-2.73E-4	-1.75E-5
ADPE	[kg Sb-Eq.]	-3.22E-5	2.96E-8	-1.92E-6	1.64E-7	6.61E-9	2.92E-9	2.18E-7	0.00E+0	0.00E+0	5.92E-8	-5.45E-7	-3.53E-8
ADPF	[MJ]	349.00	4.90	31.80	3.36	0.13	0.48	1.76	0.00	0.00	3.92	-30.80	-1.96

Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources

RESULTS OF THE LCA - RESOURCE USE: 1 m² Zero Sound installed (3,85 kg/m²)

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
PERE	[MJ]	36.91	0.00	5.96	0.00	0.00	0.00	0.32	0.00	0.00	0.00	-6.35	-0.41
PERM	[MJ]	1.09	0.00	-1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	[MJ]	38.00	0.27	4.87	1.59	0.09	0.03	0.32	0.00	0.00	0.30	-6.35	-0.41
PENRE	[MJ]	244.55	0.00	34.19	0.00	0.00	0.00	137.41	0.00	0.00	0.00	-37.90	-2.42
PENRM	[MJ]	135.45	0.00	-0.09	0.00	0.00	0.00	-135.36	0.00	0.00	0.00	0.00	0.00
PENRT	[MJ]	380.00	4.92	34.10	5.13	0.23	0.49	2.05	0.00	0.00	4.07	-37.90	-2.42
SM	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	[MJ]	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
NRSF	[MJ]	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
FW	[m³]	1.11E-1	5.00E-4	1.84E-1	2.47E-3	1.16E-4	4.94E-5	1.64E-2	0.00E+0	0.00E+0	-1.05E-5	-8.65E-3	-5.62E-4

Caption	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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m² Zero Sound installed (3,85 kg/m²)

Parameter	Unit	A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
HWD	[kg]	3.53E-7	2.84E-7	6.57E-8	2.43E-9	1.07E-10	2.81E-8	1.50E-8	0.00E+0	0.00E+0	1.74E-8	-1.51E-8	-9.66E-10
NHWD	[kg]	1.35E+0	4.12E-4	1.50E-1	8.38E-3	1.60E-4	4.07E-5	9.94E-1	0.00E+0	0.00E+0	3.84E+0	-1.48E-2	-9.54E-4
RWD	[kg]	1.25E-2	6.73E-6	9.07E-4	7.02E-4	3.77E-5	6.65E-7	1.11E-4	0.00E+0	0.00E+0	5.78E-5	-2.79E-3	-1.81E-4
CRU	[kg]	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
MFR	[kg]	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND
MER	[kg]	IND	IND	IND	IND	IND	IND	IND	IND	IND	IND	3.85E+0	IND
EEE	[MJ]	IND	IND	0.07	IND	IND	IND	7.46	IND	IND	IND	IND	IND
EET	[MJ]	IND	IND	0.13	IND	IND	IND	17.80	IND	IND	IND	IND	IND

Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EEE = Exported thermal energy

References

/IBU 2016/
IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.
www.ibu-epd.de

/ISO 14025/
DIN EN /ISO 14025:2011-10/, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

/EN 15804/
/EN 15804:2012-04+A1 2013/, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

/PCR Version 1.6, Part A/
Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. November 2017
www.ibu-epd.com

/PCR 2018, Part B/
Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part B: Requirements on the EPD for floor coverings, Version 1.2, www.ibu-epd.com, 02/2018

/EN ISO 10874:2009/
EN ISO 10874:2009: Resilient, textile and laminate floor coverings - Classification

/ISO 23997/
ISO 23997:2012-04: Resilient floor coverings - Determination of mass per unit area

/ISO 24346/
ISO 24346:2012-04: Resilient floor coverings - Determination of overall thickness

/EN 14565/
EN 14565:2004: Resilient floor coverings - Floor coverings based upon synthetic thermoplastic polymers - Specification

/DIN EN 14041/
DIN EN 14041:2004: Resilient, textile, laminate and modular multilayer floor coverings - Essential characteristics

/Regulation (EU) No. 305/2011 (CPR)/
Regulation (EU) No 305/2011 of the European Parliament and of the Council laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

/the candidate list (15.01.2019)/
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

/GaBi ts/
GaBi 8 ts software system and databases (SP 35), LBP, University of Stuttgart and thinkstep, Leinfelden-Echterdingen, 2018

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