

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)
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Valid to	16/09/2024




Enomer 2 mm product range by Kahrs
Zero Sheet, Zero Tile, Xpression, Kahrs LT Enomer
Upofloor Oy, Finland

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



General Information

<p>Upofloor</p> <hr/> <p>Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany</p> <hr/> <p>Declaration number EPD-UOY-200190081-CBC1-EN</p> <hr/> <p>This declaration is based on the product category rules: Floor coverings, 02/2018 (PCR checked and approved by the SVR)</p> <hr/> <p>Issue date 17/09/2019</p> <hr/> <p>Valid to 16/09/2024</p>	<p>2,0 mm Enomer product range</p> <hr/> <p>Owner of the declaration Upofloor Oy Souranderintie 2 FI- 37100 Nokia Finland</p> <hr/> <p>Declared product / declared unit Resilient Enomer floor covering, installed / 1 m²</p> <hr/> <p>Scope: In this EPD resilient Enomer floor coverings are declared. The application of this EPD is restricted to the Enomer products of Upofloor Oy. It is delivered in the designs:</p> <ul style="list-style-type: none"> • Zero Sheet • Zero Tile • Xpression • Kahrs LT Enomer <p>These products are 2,00 mm thick products. Product standard is EN14565; Resilient floor covering based upon synthetic thermoplastic polymers.</p> <p>Data is based on production during 2017 in the manufacturing site in Ikaalinen, Finland.</p> <p>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.</p> <hr/> <p>Verification</p> <p>The standard /EN 15804/ serves as the core PCR</p> <p>Independent verification of the declaration and data according to /ISO 14025:2010/</p> <p><input type="checkbox"/> internally <input checked="" type="checkbox"/> externally</p>
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<p></p> <hr/> <p>Dipl. Ing. Hans Peters (President of Institut Bauen und Umwelt e.V.)</p>	<p></p> <hr/> <p>Prof. Dr. Birgit Grahl (Independent verifier appointed by SVR)</p>
<p></p> <hr/> <p>Dr. Alexander Röder (Managing Director IBU)</p>	

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 2,0 mm thick Enomer product range manufactured by Upofloor Oy.

Enomer products are based upon synthetic thermoplastic polymers according to /EN14565/ and are supplied in either tile, plank or roll form.

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 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	2	mm
Product Form	Sheet, Tiles, Planks	-
Grammage min	3100	g/m ²
Grammage max	3600	g/m ²
Average Grammage (produced amount/year)	3180	g/m ²
Width Sheet	145	cm
Length 500 mm wide tiles	500	mm
Length 4 Inch wide planks	36	Inch
Length 7 Inch wide planks	48	Inch

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 group has the following composition:

Mineral filler from natural source (60 - 75%)
Thermoplastic binder (Ethylene Copolymers, 20 - 40%)
Colour pigments (approx 2%)
Acrylate polymers (<1%)

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

1m² of installed floor covering with an average grammage of 3180 g/m².

Declared unit

Name	Value	Unit
Declared unit	1	m ²
Conversion factor to 1 kg	0.314	-

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, incineration of offcuts and packaging material.

Module B2 covers provision of cleaning agent, energy and water consumption for the cleaning of the floor

covering including 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 the basis for the declared modules:

Transport to the construction site (A4)

Name	Value	Unit
Transport distance	2000	km

Capacity utilisation (including empty runs)	85	%
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Installation in the building (A5)

Name	Value	Unit
Auxiliary (adhesive)	0.3	kg

Material loss (installation waste)	6	%
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Maintenance (B2)

Name	Value	Unit
Water consumption	0.003	m ³
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	3.18	kg
Landfilling	3.18	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 installed Enomer product (3,18 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.]	6.11	0.30	0.98	0.28	0.01	0.03	4.21	0.00	0.00	0.22	-1.48	-0.12
ODP	[kg CFC11-Eq.]	1.35E-11	8.16E-15	1.79E-12	1.03E-12	5.53E-14	8.03E-16	1.29E-12	0.00E+0	0.00E+0	6.03E-14	-2.79E-12	-2.36E-13
AP	[kg SO ₂ -Eq.]	1.15E-2	6.52E-4	1.39E-3	7.28E-4	3.54E-5	6.42E-5	5.90E-4	0.00E+0	0.00E+0	6.10E-4	-2.27E-3	-1.90E-4
EP	[kg (PO ₄) ³ -Eq.]	1.49E-3	1.65E-4	2.47E-4	9.38E-5	3.31E-6	1.62E-5	1.21E-4	0.00E+0	0.00E+0	6.24E-4	-2.53E-4	-2.11E-5
POCP	[kg ethene-Eq.]	1.24E-3	-2.13E-4	1.55E-4	5.93E-5	2.21E-6	-2.10E-5	5.34E-5	0.00E+0	0.00E+0	6.67E-5	-1.86E-4	-1.55E-5
ADPE	[kg Sb-Eq.]	4.24E-6	2.45E-8	4.03E-7	1.64E-7	6.61E-9	2.41E-9	1.80E-7	0.00E+0	0.00E+0	4.89E-8	-3.72E-7	-3.13E-8
ADPF	[MJ]	120.90	4.06	17.19	3.36	0.13	0.40	1.46	0.00	0.00	3.24	-21.02	-1.72

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 installed Enomer product (3,18 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]	18.58	0.00	4.79	0.00	0.00	0.00	0.26	0.00	0.00	0.00	-4.33	0.00
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]	19.67	0.22	3.70	1.59	0.09	0.02	0.26	0.00	0.00	0.25	-4.33	-0.37
PENRE	[MJ]	77.68	0.00	18.78	0.00	0.00	0.00	64.02	0.00	0.00	0.00	0.00	0.00
PENRM	[MJ]	62.42	0.00	-0.09	0.00	0.00	0.00	-62.33	0.00	0.00	0.00	0.00	0.00
PENRT	[MJ]	140.10	4.08	18.69	5.13	0.23	0.40	1.69	0.00	0.00	3.36	-25.81	-2.13
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	[m ³]	4.70E-2	4.14E-4	5.54E-3	2.47E-3	1.16E-4	4.08E-5	1.35E-2	0.00E+0	0.00E+0	-8.64E-6	-5.91E-3	-4.99E-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 installed Enomer product (3,18 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]	1.05E-7	2.36E-7	4.67E-8	2.43E-9	1.07E-10	2.32E-8	1.24E-8	0.00E+0	0.00E+0	1.44E-8	-1.03E-8	-8.52E-10
NHWD	[kg]	6.06E-1	3.42E-4	9.28E-2	8.38E-3	1.60E-4	3.36E-5	8.21E-1	0.00E+0	0.00E+0	3.17E+0	-1.01E-2	-8.45E-4
RWD	[kg]	7.80E-3	5.58E-6	6.06E-4	7.02E-4	3.77E-5	5.49E-7	9.20E-5	0.00E+0	0.00E+0	4.77E-5	-1.90E-3	-1.61E-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	3.60E+0	IND
EEE	[MJ]	IND	IND	0.07	IND	IND	IND	5.64	IND	IND	IND	IND	IND
EET	[MJ]	IND	IND	0.13	IND	IND	IND	13.40	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/**

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/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/

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/ISO 10874/ (previously EN 685)

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

/EN 14041/

EN 14041 – 2004: Resilient, textile, laminate and modular multilayer floor coverings – Essential characteristics

/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

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

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