

ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	Windmüller GmbH
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	22.01.2024

PURLINE

resilient polyurethane floor covering
as planks for clicking

Windmüller GmbH

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



General Information

Windmüller GmbH

Programme holder

IBU - Institut Bauen und Umwelt e.V.
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10178 Berlin
Germany

Declaration number

EPD-WIN-20190006-CCA1-EN

This declaration is based on the product category rules:

Floor coverings, 02/2018
(PCR checked and approved by the SVR)

Issue date

23.01.2019

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22.01.2024



Prof. Dr.-Ing. Horst J. Bossenmayer
(President of Institut Bauen und Umwelt e.V.)



Dipl. Ing. Hans Peters
(Head of Board IBU)

PURLINE

resilient polyurethane floor covering
as planks for clicking

Owner of the declaration

Windmüller GmbH
Nord-West-Ring 21
32832 Augustdorf
Germany

Declared product / declared unit

1 m² resilient floor covering 'PURLINE Click'

Scope:

The manufacturer declaration applies to the product 'PURLINE Click' with a total weight of 9 kg/m². It is manufactured at the Windmüller GmbH site in Detmold, Germany. Cutting of planks take place at the Windmüller GmbH site in Augustdorf, Germany.

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



Angela Schindler
(Independent verifier appointed by SVR)

Product

Product description / Product definition

"PURLINE Click" - resilient floor covering based on polyurethane is produced with the reactive component castor oil as renewable raw material and with natural inorganic filler.

"PURLINE Click" is available in many different decors and textures and it is offered as planks for clicking.

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 Declaration of Performance of the products taking into consideration /EN 14041/ and the CE-marking of the products can be found on the manufacturer's technical information section.

Application

According to the use class as defined in /ISO 10874/ the product can be used

- in all domestic areas, classified as use class 23,
- in all commercial areas, classified as use class 32



Technical Data

Name	Value	Unit
Product Form	planks of several dimensions	-
Grammage	9,0	kg/m ²
Product thickness	5	mm

Additional product properties in accordance with /EN 16776/ and performance data of the product in accordance with the Declaration of Performance (DoP) with respect to its Essential Characteristics according

to /EN 14041/ can be found on the manufacturer's technical information section (www.wineo.de).

Base materials / Ancillary materials

Name	Value	Unit
Polyurethane including 51% renewable material	26,6	%
Filler	71,8	%
Paper	0.8	%
Glass fibre	0.8	%

This product contains substances listed in the candidate list (27.06.2018) exceeding 0.1 percentage by mass: no

LCA: Calculation rules

Declared Unit

Name	Value	Unit
Declared unit	1	m ²
Conversion factor to 1 kg	0.11	-
Mass reference	9.0	kg/m ²

The declared unit refers to 1 m² produced floor covering. Output of module A5 'Assembly' is 1 m² installed floor covering.

System boundary

Type of EPD: Cradle-to-grave

System boundaries of modules A, B, C, D:

A1-A3 Production:

Energy supply and production of the basic material, auxiliary material, transport of the material to the manufacturing site, emissions, waste water treatment, packaging material and waste processing up to the landfill disposal of residual waste (except radioactive waste). Benefits for generated electricity and steam due to the incineration of production waste are aggregated.

A4 Transport:

Transport of the packed floor covering from factory gate to the place of installation.

A5 Installation:

Installation of the floor covering, processing of installation waste and packaging waste up to the landfill disposal of residual waste (except radioactive waste), the production of the amount of floor covering that occurs as installation waste including its transport to the place of installation. Generated electricity and steam due to the incineration of waste are listed in the result table as exported energy. Preparing of the floor is beyond the system boundaries and not taken into account.

B1 Use:

Indoor emissions during the use stage. After the first year, no product related Volatile Organic Compound (VOC) emissions are relevant due to VOC decay curves of the product.

Reference service life

A calculation of the reference service life according to /ISO 15686/ is not possible.

The service life of resilient floor coverings depends on the correct installation taking into account the declared use classification and the adherence to cleaning and maintenance instructions.

A minimum service life of 20 years can be assumed /BNB/, technical service life can be considerably longer.

B2 Maintenance:

Cleaning of the floor covering for a period of 1 year: Vacuum cleaning – electricity supply
Wet cleaning – water consumption, production of the cleaning agent, waste water treatment.
The declared values in this module have to be multiplied by the assumed service life of the floor covering in the building in question (see annex, chapter 'General information on use stage').

B3 - B7:

The modules are not relevant and therefore not declared.

C1 De-construction:

The floor covering is de-constructed manually and no additional environmental impact is caused.

C2 Transport:

Transport of the floor covering waste to a landfill or to the municipal waste incineration plant (MWI).

C3 Waste processing:

C3-1: Landfill disposal needs no waste processing.
C3-2: Impact from waste incineration (plant with R1>0.6), generated electricity and steam are listed in the result table as exported energy.

C4 Disposal

C4-1: Impact from landfill disposal,
C4-2: The floor covering waste leaves the system in module C3-2,

D Recycling potential:

D-A5: Benefits for generated energy due to incineration of packaging and installation waste (incineration plant with R1 > 0.6),
D-1: Benefits for generated energy due to landfill disposal of floor covering waste at the end-of-life,
D-2: Benefits for generated energy due to incineration of floor covering waste at the end-of-life (incineration plant with R1 > 0.6),

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.

Background data are taken from the /GaBi database 2018/, service pack 36 and from the /ecoinvent 3.3/ database

LCA: Scenarios and additional technical information

The following information refer to the declared modules and are the basis for calculations or can be used for further calculations. The indicated values refer to the declared functional unit of the product.

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel , diesel, truck EURO 0-6 mix	0.02	l/100km
Litres of fuel , heavy fuel oil, ship	0.002	l/100km
Transport distance truck	540	km
Transport distance ship	750	km
Capacity utilisation (including empty runs) truck	60	%
Capacity utilisation (including empty runs) ship	48	%

Installation in the building (A5)

Name	Value	Unit
Material loss	0.27	kg

Coated packaging paper and installation waste are considered to be incinerated in a municipal waste incineration plant. Pure cardboard packaging waste is going to be recycled.

Preparation of the floor is not taken into account.

Maintenance (B2)

Indication per m² floor covering and per year. Depending on the application based on /EN ISO 10874/, the technical service life recommended by the manufacturer and the anticipated strain on the floor by customers, the case-specific useful life can be established. The effects of Module B2 need to be calculated on the basis of this useful life in order to obtain the overall environmental impacts.

The floor covering is used in private or in commercial areas.

Name	Value	Unit
Maintenance cycle (wet wiping)	55,9	1/year
Maintenance cycle (vacuum cleaning)	98,8	1/year
Water consumption (wet wiping)	0.026	m ³
Cleaning agent (wet wiping)	0.05	kg
Electricity consumption	0.09	kWh

Further information on cleaning and maintenance see www.wineo.de.

End of Life (C1-C4)

Two different end-of-life scenarios are declared and the results are indicated separately in module C. Each scenario is calculated as a 100% scenario.

Scenario 1: 100% landfill disposal

Scenario 2: 100% municipal waste incineration (MWI) with R1>0.6

If combinations of these scenarios have to be calculated this should be done according to the following scheme:

$$\text{EOL-impact} = x\% \text{ impact (Scenario 1)} + y\% \text{ impact (Scenario 2)}$$

Name	Value	Unit
Collected as mixed construction waste (scenario 1 and 2)	9	kg
Landfilling (scenario 1)	9	kg
Energy recovery (scenario 2)	9	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Recovery potentials due to the two end-of-life scenarios (module C) are indicated separately.

LCA: Results

The declared result figures in module B2 have to be multiplied by the assumed service life (in years) of the floor covering in the building under consideration.

Information on un-declared modules:

Modules B3 - B7 are not relevant during the service life of the floor covering and are therefore not declared.

Modules C3/1 and C4/2 cause no additional impact (see "LCA: Calculation rules") and are therefore not declared.

Module C2 represents the transport for scenarios 1 and 2. Column D represents module D/A5.

The /CML/ characterisation factors version January 2016 are applied.

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	X	X	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C4/1	D	D/1	D/2
GWP	[kg CO ₂ -Eq.]	5.66E+0	4.36E-1	4.73E-1	0.00E+0	2.39E-1	0.00E+0	2.73E-2	9.02E+0	3.98E+0	-5.59E-2	0.00E+0	-1.76E+0
ODP	[kg CFC11-Eq.]	4.50E-8	1.16E-14	1.33E-9	0.00E+0	1.12E-8	0.00E+0	7.48E-16	2.84E-12	1.71E-13	-1.16E-13	0.00E+0	-3.66E-12
AP	[kg SO ₂ -Eq.]	5.92E-2	3.49E-3	1.96E-3	0.00E+0	6.93E-4	0.00E+0	1.16E-4	3.32E-3	1.73E-3	-9.12E-5	0.00E+0	-2.87E-3
EP	[kg (PO ₄) ³⁻ -Eq.]	4.08E-2	6.10E-4	1.26E-3	0.00E+0	2.91E-4	0.00E+0	2.96E-5	7.86E-4	1.77E-3	-9.94E-6	0.00E+0	-3.13E-4
POCP	[kg ethene-Eq.]	1.84E-3	-5.90E-4	1.27E-5	1.79E-6	6.99E-5	0.00E+0	-4.81E-5	2.27E-4	1.89E-4	-7.23E-6	0.00E+0	-2.28E-4
ADPE	[kg Sb-Eq.]	3.32E-5	3.27E-8	9.93E-7	0.00E+0	4.94E-7	0.00E+0	2.27E-9	3.94E-7	1.37E-7	-1.52E-8	0.00E+0	-4.79E-7
ADPF	[MJ]	1.43E+2	5.86E+0	4.72E+0	0.00E+0	2.81E+0	0.00E+0	3.72E-1	4.81E+0	9.17E+0	-7.72E-1	0.00E+0	-2.43E+1

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 floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C4/1	D	D/1	D/2
PERE	[MJ]	8.78E+1	2.85E-1	3.99E+0	0.00E+0	9.12E-1	0.00E+0	2.06E-2	4.69E+1	7.08E-1	-1.81E-1	0.00E+0	-5.67E+0
PERM	[MJ]	4.61E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-4.61E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	[MJ]	1.34E+2	2.85E-1	3.99E+0	0.00E+0	9.12E-1	0.00E+0	2.06E-2	7.70E-1	7.08E-1	-1.81E-1	0.00E+0	-5.67E+0
PENRE	[MJ]	1.30E+2	5.88E+0	4.95E+0	0.00E+0	3.71E+0	0.00E+0	3.74E-1	2.49E+1	9.52E+0	-9.72E-1	0.00E+0	-3.06E+1
PENRM	[MJ]	1.94E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.94E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	[MJ]	1.50E+2	5.88E+0	4.95E+0	0.00E+0	3.71E+0	0.00E+0	3.74E-1	5.48E+0	9.52E+0	-9.72E-1	0.00E+0	-3.06E+1
SM	[kg]	1.51E-1	0.00E+0	4.54E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	[m ³]	1.04E+1	5.25E-4	3.09E-1	0.00E+0	4.79E-3	0.00E+0	3.80E-5	3.08E-2	-2.45E-5	-2.46E-4	0.00E+0	-7.73E-3

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 floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C4/1	D	D/1	D/2
HWD	[kg]	4.09E-7	2.96E-7	3.51E-8	0.00E+0	1.42E-9	0.00E+0	2.16E-8	4.41E-8	4.06E-8	-3.94E-10	0.00E+0	-1.24E-8
NHWD	[kg]	4.07E-1	4.34E-4	9.92E-2	0.00E+0	2.18E-2	0.00E+0	3.13E-5	2.90E+0	8.98E+0	-4.06E-4	0.00E+0	-1.28E-2
RWD	[kg]	2.58E-3	7.91E-6	8.45E-5	0.00E+0	3.19E-4	0.00E+0	5.11E-7	2.63E-4	1.35E-4	-7.93E-5	0.00E+0	-2.49E-3
CRU	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	0.00E+0	0.00E+0	1.60E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	[MJ]	0.00E+0	0.00E+0	2.27E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.14E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	[MJ]	0.00E+0	0.00E+0	4.44E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.40E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0

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

The CO₂ uptake during the growth phase of renewable materials in the product is 3,34 kg/m². This amount is stored in the material as biogenic carbon. At the end of life the stored carbon is released into the air again as 3,34 kg CO₂ emissions.

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/ISO 14025/

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/EN 15804/

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

/EN 16810/

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/PCR Part A/

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/EN 16776/

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/EN 14041/

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/EN 13501-1/

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/ISO 15686/

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/ISO 15686-1: 2011-05/: Part 1: General principles and framework

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/BNB/

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/CML/

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/REACH/

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