

Annexe

For a product with a total weight of 1500 g/m²

to the

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Windmüller GmbH
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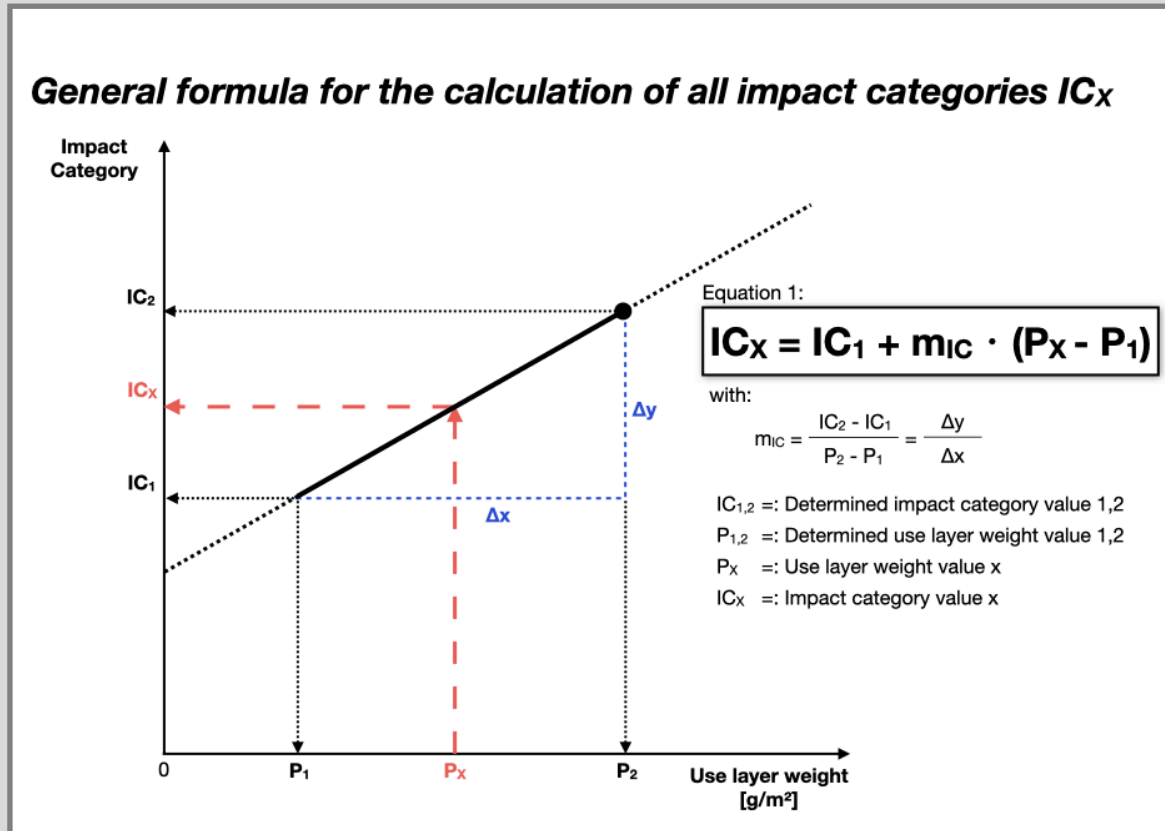
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General Information on the annexe

The EPD document is valid for all products with a total product weight lower or equal to the declared maximum product weight of 4000 g/m².

LCA results show a linear correlation with the total polyurethane weight for all impact categories (IC) and all modules (A-D). It is possible to calculate specific LCA results (IC_x) for every underlay mat (x) within the declared group of products in relation to its total weight of the polyurethane layer (P_x).



Graph 1: General formula for the calculation of all impact categories IC_x.

1. Information on the product with a total product weight of 1500 g/m²

Complementary technical data

Base materials / Ancillary materials

Name	Value for category	Unit
Polyurethane with renewable plant oil	17,1	%
Inorganic Filler	70,9	%
Organic material	11,6	%
Additives	0,4	%
		%
		%
		%
		%
		%
		%

LCA: Declared Unit

Name	Value for category	Unit
Declared unit	1,0	m ²
Conversion factor to 1 kg	1,50	kg/m ²

LCA: Scenarios and additional technical information

All indicated values refer to the declared functional unit

Transport to the construction site (A4)

Name	Value for category	Unit
Litres of fuel (truck, EURO 0-6 mix)	0,0035	l/100km
Transport distance	270	km
Capacity utilisation (including empty runs)	55	%

Installation in the building (A5)

Name	Value for category	Unit
Material lost	0,14	kg

End of Life (C1-C4)

Name	Value for category	Unit
Collected as mixed construction waste (scenario 1 and 2)	1,50	kg/m ²
Collected separately (scenario 3)	1,50	kg/m ²
Landfilling (scenario 1)	1,50	kg/m ²
Energy recovery (scenario 2)	1,50	kg/m ²
Energy recovery (scenario 3)	0,44	kg/m ²
Recycling (scenario 3)	1,06	kg/m ²

LCA: Results for the product with a total product weight of 1500 g/m²

Information on non-relevant modules:

Modules B1 - B5 are not relevant during the service life of the product.

Modules B6, B7, C1, C3/1, C4/2 and C4/3 cause no additional impact and are therefore not relevant.

Module C2 represents the transport for scenarios 1, 2 and 3.

Description of the system boundary

(X = Included in LCA; MNR = Module not relevant)

State of production			State of construction phase		State of use							End of life state				Credits and loads after life
raw material supply	transport	manufacturing	delivery	installation	use	maintenance	repair	replacement	renewal	energy use	water use	stop of use / demolition	transport	waste management	disposal	reuse, recovery and recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MNR	MNR	MNR	MNR	MNR	MNR	MNR	MNR	X	X	X	X

Results of the LCA - Environmental impact: 1 m² floor covering

Parameter	Unit	A1-A3	A4	A5	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
GWP	[kg CO ₂ -eq]	5,43E-01	3,43E-02	2,31E-01	4,98E-03	1,72E+00	1,73E+00	6,72E-01	-3,79E-02	0,00E+00	-3,19E-01	-1,07E-01
ODP	[kg CFC11-eq]	5,54E-09	5,99E-18	4,98E-10	8,69E-19	6,78E-16	9,44E-16	3,45E-16	-5,68E-16	0,00E+00	-4,73E-15	-4,73E-16
AP	[kg SO ₂ -eq]	6,99E-03	1,42E-04	6,85E-04	2,06E-05	4,40E-04	5,08E-04	2,64E-04	-4,34E-05	0,00E+00	-3,62E-04	-2,42E-04
EP	[kg PO ₄) ₃ -eq]	5,73E-03	3,61E-05	5,29E-04	5,25E-06	1,02E-04	1,17E-04	2,87E-04	-5,98E-06	0,00E+00	-5,02E-05	-4,19E-05
POCP	[kg ethen-eq]	1,72E-04	-6,08E-05	1,20E-05	-8,82E-06	3,02E-05	9,32E-06	2,38E-05	-4,00E-06	0,00E+00	-3,36E-05	-3,25E-05
ADPE	[kg Sb-eq]	1,70E-06	3,04E-09	1,60E-07	4,42E-10	6,75E-08	7,13E-08	1,95E-08	-7,01E-09	0,00E+00	-5,87E-08	-1,23E-08
ADPF	[MJ]	2,38E+01	4,67E-01	2,27E+00	6,78E-02	8,38E-01	1,10E+00	1,52E+00	-5,46E-01	0,00E+00	-4,61E+00	-1,20E+01

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 floor covering

Parameter	Unit	A1-A3	A4	A5	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
PERE	[MJ]	1,06E+01	2,61E-02	1,06E+00	3,79E-03	1,64E-01	2,42E-01	1,14E-01	-1,46E-01	0,00E+00	-1,22E+00	-1,10E-01
PERM	[MJ]	7,40E-02	0,00E+00	-7,40E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	1,07E+01	2,61E-02	9,80E-01	3,79E-03	1,64E-01	2,42E-01	1,14E-01	-1,46E-01	0,00E+00	-1,22E+00	-1,10E-01
PENRE	[MJ]	1,13E+01	4,68E-01	2,60E+00	6,79E-02	1,39E+01	1,42E+01	1,57E+00	-6,63E-01	0,00E+00	-5,59E+00	-1,21E+01
PENRM	[MJ]	1,32E+01	0,00E+00	-2,58E-01	0,00E+00	-1,30E+01	-1,30E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	2,45E+01	4,68E-01	2,34E+00	6,79E-02	9,32E-01	1,25E+00	1,57E+00	-6,63E-01	0,00E+00	-5,59E+00	-1,21E+01
SM	[kg]	2,15E-02	0,00E+00	1,94E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,28E-01
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m ³]	7,63E-01	2,99E-05	6,92E-02	4,34E-06	5,19E-03	5,28E-03	1,44E-05	-1,43E-04	0,00E+00	-1,19E-03	-9,57E-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 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 floor covering

Parameter	Unit	A1-A3	A4	A5	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
HWD	[kg]	2,77E-05	2,36E-11	2,50E-06	3,42E-12	1,55E-10	2,03E-10	2,82E-10	-1,48E-10	0,00E+00	-1,25E-09	-2,01E-10
NHWD	[kg]	3,69E-02	6,96E-05	4,81E-02	1,01E-05	4,98E-01	4,98E-01	1,49E+00	-3,07E-04	0,00E+00	-2,58E-03	-4,45E-04
RWD	[kg]	2,58E-04	5,67E-07	2,68E-05	8,22E-08	3,77E-05	5,98E-05	1,82E-05	-4,71E-05	0,00E+00	-3,93E-04	-2,19E-05
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	0,00E+00	0,00E+00	2,47E-02	0,00E+00	0,00E+00	9,28E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	1,60E-01	0,00E+00	1,34E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	3,05E-01	0,00E+00	2,60E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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; **EET** = Exported thermal energy