

# Annexe

For a product with a total pile weight of 400 g/m<sup>2</sup>

to the

## ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Fletco Carpets A/S
Declaration number	EPD-FLE-20230272-CBC1-EN
Issue date	25.07.23
Valid to	24.07.28

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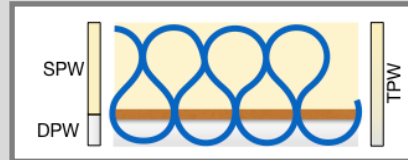
## General Information on the annexe

The EPD document is valid for all products with a total pile weight lower or equal to the declared maximum pile weight of 700 g/m<sup>2</sup>.

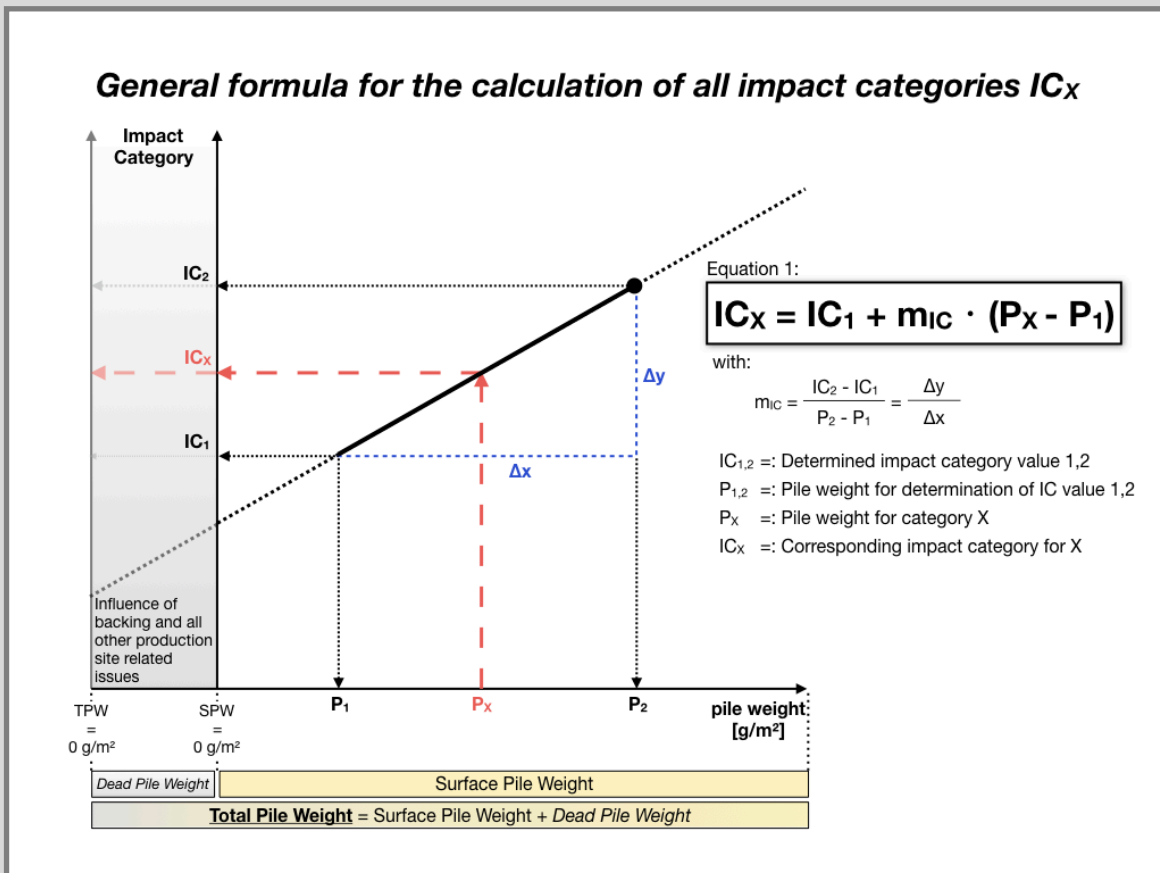
LCA results show a linear correlation with the total pile weight for all impact categories (IC) and all modules (A-D). It is possible to calculate specific LCA results (IC<sub>x</sub>) for every carpet (x) within the declared group of products in relation to its total pile weight (P<sub>x</sub>).

The total pile weight (TPW) is the sum of surface pile weight (SPW) and dead pile weight (DPW):

$$TPW = SPW + DPW$$



The surface pile weight is the technical relevant value according to EN 1307 and has to be mentioned in technical specification. As shown in the figure below alternatively to the total pile weight the surface pile weight can be used to calculate LCA results (IC<sub>x</sub>).



**Graph 1:** General formula for the calculation of all impact categories IC<sub>x</sub>.

## 1. Information on the product with a total pile weight of 400 g/m<sup>2</sup>

### Complementary technical data

#### Base materials / Ancillary materials

Name	Value for category	Unit
Polyester	38,4	%
Polyethylene	19,2	%
Polymer dispersion (solid content)	8,8	%
Mineral filler	25,4	%
Aluminum hydroxide	7,0	%
Glass fibre	1,1	%
Additives	0,1	

### LCA: Declared Unit

Name	Value for category	Unit
Declared unit	1,0	m <sup>2</sup>
Grammage	3,14	kg/m <sup>2</sup>
Layer thickness	see technical data	m
Gross density	see technical data	kg/m <sup>3</sup>

### 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)	0,0074	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	55	%

#### Installation in the building (A5)

Name	Value for category	Unit
Material lost	0,09	kg

#### Maintenance (B2)

Indication per m<sup>2</sup> and year

Name	Value for category	Unit
Maintenance cycle (wet cleaning)	1,5	1/year
Maintenance cycle (vacuum cleaning)	208	1/year
Water consumption (wet cleaning)	0,004	m <sup>3</sup>
Cleaning agent (wet cleaning)	0,09	kg
Electricity consumption	0,314	kWh

#### End of Life (C1-C4)

Name	Value for category	Unit
Collected as mixed construction waste (scenario 1 and 2)	3,140	kg/m <sup>2</sup>
Collected separately (scenario 3)	3,140	kg/m <sup>2</sup>
Landfilling (scenario 1)	3,140	kg/m <sup>2</sup>
Energy recovery (scenario 2)	3,140	kg/m <sup>2</sup>
Energy recovery (scenario 3)	2,087	kg/m <sup>2</sup>
Recycling (scenario 3)	1,053	kg/m <sup>2</sup>



## LCA: Results for the product with a total pile weight of 400 g/m<sup>2</sup>

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

**Information on non-relevant modules:**

Modules B3 - B7 are not relevant during the service life of the carpet.  
 Modules C3/1, C4/2 and C4/3 cause no additional impact.  
 Module C2 represents the transport for scenarios 1, 2 and 3.

### Description of the system boundary (X = Included in LCA; MNR = Module not relevant; MND = Module not declared)

PRODUCT STAGE	CONSTRUCTION PROCESS STAGE	USE STAGE	END OF LIFE STAGE	BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">raw material supply</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">transport</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">manufacturing</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>A1</span> <span>A2</span> <span>A3</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">transport from the gate to the site</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">assembly</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>A4</span> <span>A5</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">use</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">maintenance</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">repair</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">replacement</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">refurbishment</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">operational energy use</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">operational water use</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>B1</span> <span>B2</span> <span>B3</span> <span>B4</span> <span>B5</span> <span>B6</span> <span>B7</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">de-construction demolition</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">transport</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">waste processing</div> <div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">disposal</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>C1</span> <span>C2</span> <span>C3</span> <span>C4</span> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> </div>	<div style="border: 1px solid black; padding: 2px; writing-mode: vertical-rl; transform: rotate(180deg);">reuse, recovery and recycling potential</div> <div style="margin-top: 5px;"> <span>D</span> </div> <div style="margin-top: 5px;"> <input checked="" type="checkbox"/> </div>



**Results of the LCA - Environmental impact: 1 m<sup>2</sup> floor covering**

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
<b>GWP-total</b>	[kg CO2-eq]	8,09E+00	1,92E-01	5,63E-01	0,00E+00	5,49E-01	0,00E+00	1,07E-02	5,41E+00	5,45E+00	2,20E-01	-4,32E-02	0,00E+00	-1,44E+00	-3,42E-01
<b>GWP-fossil</b>	[kg CO2-eq]	8,17E+00	1,89E-01	4,13E-01	0,00E+00	3,48E-01	0,00E+00	1,05E-02	5,41E+00	5,45E+00	2,20E-01	-4,29E-02	0,00E+00	-1,43E+00	-3,42E-01
<b>GWP-biogenic</b>	[kg CO2-eq]	-8,97E-02	2,44E-03	1,49E-01	0,00E+00	4,16E-03	0,00E+00	1,35E-04	3,57E-04	8,40E-04	-3,62E-08	-2,19E-04	0,00E+00	-7,29E-03	-3,93E-04
<b>GWP-lucluc</b>	[kg CO2-eq]	3,16E-03	1,07E-03	1,33E-04	0,00E+00	1,96E-01	0,00E+00	5,93E-05	1,11E-04	2,63E-04	1,08E-04	-4,69E-06	0,00E+00	-1,56E-04	-1,64E-04
<b>ODP</b>	[kg CFC11-eq]	2,51E-11	1,12E-14	7,61E-13	0,00E+00	3,42E-08	0,00E+00	6,80E-16	3,00E-13	5,50E-13	2,99E-13	-2,88E-13	0,00E+00	-9,61E-12	-5,30E-13
<b>AP</b>	[kg SO2-eq]	1,32E-02	1,14E-03	4,59E-04	0,00E+00	8,32E-04	0,00E+00	6,33E-05	8,45E-04	1,04E-03	6,60E-04	-5,63E-05	0,00E+00	-1,88E-03	-1,20E-03
<b>EP-fw</b>	[kg PO4)3-eq]	1,67E-05	5,72E-07	5,31E-07	0,00E+00	5,19E-06	0,00E+00	3,17E-08	4,01E-07	5,27E-07	4,15E-05	-5,87E-08	0,00E+00	-1,96E-06	-3,84E-07
<b>EP-mar.</b>	[kg N-eq]	4,14E-03	5,60E-04	1,51E-04	0,00E+00	1,97E-04	0,00E+00	3,11E-05	2,71E-04	3,56E-04	1,46E-04	-1,53E-05	0,00E+00	-5,10E-04	-3,76E-04
<b>EP-ter.</b>	[Mol N-eq]	4,48E-02	6,20E-03	1,66E-03	0,00E+00	2,83E-03	0,00E+00	3,44E-04	3,88E-03	4,33E-03	1,60E-03	-1,64E-04	0,00E+00	-5,46E-03	-4,12E-03
<b>POCP</b>	[kg ethen-eq]	1,40E-02	1,06E-03	4,77E-04	4,18E-04	9,83E-04	0,00E+00	5,87E-05	7,40E-04	9,08E-04	4,69E-04	-4,28E-05	0,00E+00	-1,43E-03	-1,13E-03
<b>ADPE</b>	[kg Sb-eq]	1,10E-06	1,60E-08	3,40E-08	0,00E+00	2,30E-07	0,00E+00	8,88E-10	1,37E-08	2,03E-08	1,54E-08	-6,45E-09	0,00E+00	-2,15E-07	-3,28E-08
<b>ADPF</b>	[MJ]	1,89E+02	2,56E+00	5,79E+00	0,00E+00	5,90E+00	0,00E+00	1,42E-01	1,50E+00	2,15E+00	3,16E+00	-7,30E-01	0,00E+00	-2,43E+01	-4,46E+01
<b>WDP</b>	[m <sup>3</sup> ]	1,40E+00	1,71E-03	5,98E-02	0,00E+00	9,99E-02	0,00E+00	9,51E-05	5,87E-01	5,91E-01	-2,36E-03	-4,49E-03	0,00E+00	-1,50E-01	-5,10E-02

**Caption:** **GWP** = Global warming potential; **ODP** = Depletion potential of the stratospheric ozone layer; **AP** = Acidification potential of land and water; **EP** = Eutrophication potential (fw = freshwater, mar = marine, ter. = terrestrial); **POCP** = Formation potential of tropospheric ozone photochemical oxidants; **ADPE** = Abiotic depletion potential for non-fossil resources; **ADPF** = Abiotic depletion potential for fossil resources; **WDP** = Water depletion potential

**Results of the LCA - Resource use: 1 m<sup>2</sup> floor covering**

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
PERE	[MJ]	2,87E+01	1,46E-01	1,07E+00	0,00E+00	3,69E+00	0,00E+00	8,07E-03	3,13E-01	4,96E-01	2,60E-01	-1,99E-01	0,00E+00	-6,64E+00	-4,64E-01
PERM	[MJ]	1,85E-01	0,00E+00	-1,85E-01	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
PERT	[MJ]	2,89E+01	1,46E-01	8,82E-01	0,00E+00	3,69E+00	0,00E+00	8,07E-03	3,13E-01	4,96E-01	2,60E-01	-1,99E-01	0,00E+00	-6,64E+00	-4,64E-01
PENRE	[MJ]	1,33E+02	2,57E+00	5,80E+00	0,00E+00	5,90E+00	0,00E+00	1,42E-01	5,77E+01	5,83E+01	3,16E+00	-7,30E-01	0,00E+00	-2,43E+01	-4,46E+01
PENRM	[MJ]	5,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,62E+01	-5,62E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	1,89E+02	2,57E+00	5,80E+00	0,00E+00	5,90E+00	0,00E+00	1,42E-01	1,50E+00	2,15E+00	3,16E+00	-7,30E-01	0,00E+00	-2,43E+01	-4,46E+01
SM	[kg]	6,03E-01	0,00E+00	1,81E-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	0,00E+00	0,00E+00	6,30E-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	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	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	4,55E-02	1,65E-04	1,79E-03	0,00E+00	3,34E-03	0,00E+00	9,13E-06	5,08E-01	1,40E-02	3,70E-05	-1,90E-04	0,00E+00	-6,35E-03	-4,05E-03

**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 m<sup>2</sup> floor covering**

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
HWD	[kg]	4,35E-08	1,23E-11	1,31E-09	0,00E+00	4,19E-05	0,00E+00	6,82E-13	1,82E-10	2,09E-10	4,87E-10	-9,90E-11	0,00E+00	-3,30E-09	-2,17E-10
NHWD	[kg]	2,15E-01	3,68E-04	2,28E-02	0,00E+00	7,30E-03	0,00E+00	2,04E-05	5,43E-01	5,43E-01	3,13E+00	-3,68E-04	0,00E+00	-1,23E-02	-1,05E-01
RWD	[kg]	4,73E-03	3,16E-06	1,44E-04	0,00E+00	3,76E-04	0,00E+00	1,75E-07	7,44E-05	1,21E-04	3,88E-05	-5,71E-05	0,00E+00	-1,90E-03	-9,69E-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	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	0,00E+00	0,00E+00	9,50E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,30E-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	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	2,41E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,03E+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	4,37E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,46E+01	6,08E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

**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; EET = Exported thermal energy



Results of the LCA - Additional Impact categories: 1 m<sup>2</sup> floor covering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C1	C2	C3/2	C3/3	C4/1	D/A5	D/1	D/2	D/3
PM	[D]	1,03E-07	6,59E-09	3,56E-09	0,00E+00	6,84E-08	0,00E+00	3,66E-10	8,37E-09	9,58E-09	6,34E-09	-4,66E-10	0,00E+00	0,00E+00	-2,25E-08
IR	[kBq U235 eq.]	7,78E-01	4,63E-04	2,37E-02	0,00E+00	6,78E-02	0,00E+00	2,57E-05	1,17E-02	1,97E-02	5,73E-03	-9,67E-03	0,00E+00	0,00E+00	-1,06E-02
ETP-fw	[CTUe]	7,53E+01	1,78E+00	2,34E+00	3,60E-03	2,69E+00	0,00E+00	9,86E-02	8,56E-01	1,23E+00	3,09E+00	-1,59E-01	0,00E+00	0,00E+00	-7,84E+00
HTP-c	[CTUh]	2,57E-09	3,59E-11	7,98E-11	0,00E+00	6,21E-10	0,00E+00	1,99E-12	4,99E-11	5,85E-11	1,39E-10	-7,35E-12	0,00E+00	0,00E+00	-8,90E-11
HTP-nc	[CTUh]	8,55E-08	2,13E-09	2,72E-09	2,60E-11	9,46E-09	0,00E+00	1,18E-10	2,79E-09	3,22E-09	1,16E-08	-2,82E-10	0,00E+00	0,00E+00	-5,23E-09
SQP	[Pt]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Caption **PM** = Incidence of diseases due to PM emissions; **IR** = Human exposure efficiency relative to U235; **ETP-fw** = Comparative toxic unit for ecosystems; **HTP-c** = Comparative toxic unit for humans (carcinogenic); **HTP-nc** = Comparative toxic unit for humans (non-carcinogenic); **SQP** = Soil quality index