ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Desso BV
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DES-20160104-CAB1-DE
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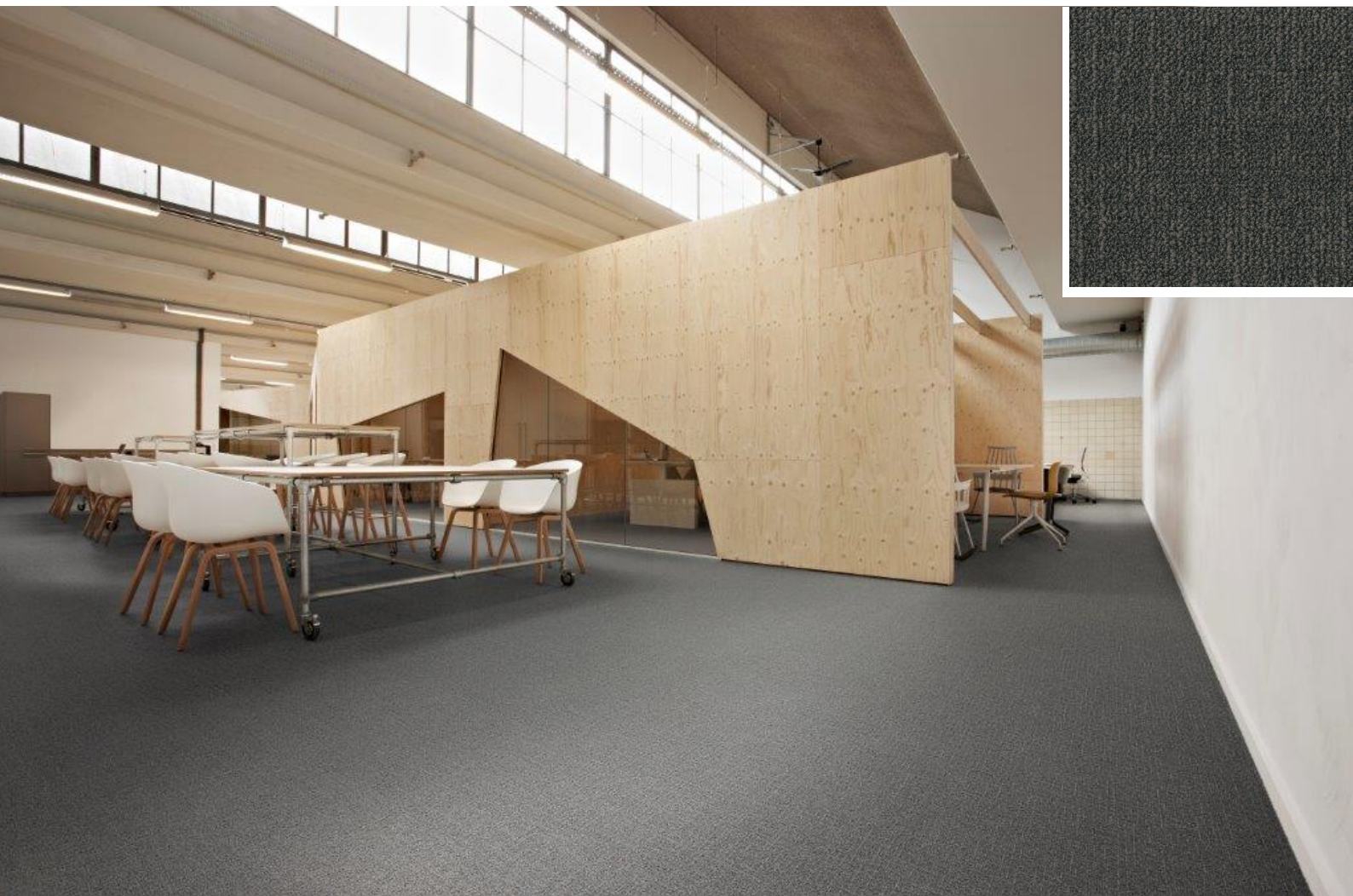
Valid to	07/08/2021

Tufted carpet tiles Pile material 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

Institut Bauen und Umwelt e.V.

www.bau-umwelt.com / https://epd-online.com



General Information

Desso BV, a Tarkett company
www.desso.com

Tufted carpet tiles Pile material 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

Programme holder
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Owner of the Declaration
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The Netherlands

Declaration number
EPD-DES-20160104-CAB1-DE

Declared product / Declared unit
1m2 of tufted carpet tiles with pile material of 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

This Declaration is based on the Product Category Rules:
Floor coverings, 07.2014
(PCR tested and approved by the SVR)

Scope:
The declaration applies for a group of tufted modular carpet tiles. It is only valid in conjunction with a valid PRODIS licence. The products are produced in the manufacturing site Dendermonde, Belgium (tufting) and in Waalwijk, the Netherlands (precoating and heavy coating).

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.

Issue date
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Valid to
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Verification

The CEN Norm /EN 15804/ serves as the core PCR

Independent verification of the declaration according to /ISO 14025/

☐ internally ☒ externally

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

Dr. Burkhart Lehmann
(Managing Director IBU)

Dr. Eva Schmincke
(Independent verifier appointed by SVR)

Product

Product description
Tufted carpet tiles with a surface pile Polyamide 6.6 yarn and ProBase® backing. The declaration applies for a group of products with a total pile-material of 450-550 g/m2. The calculations refer to the average pile-material input of 500 g.

Desso ProBase® backing
Desso ProBase® backing is a bitumen based backing with a reinforced textile bottom. In the end-of-life phase the ProBase® backing is used for energy recovery cement industry.

Application
According to the use class as defined in /EN 1307/ the products can be used in all professional area which require **class 33** or less.

Type of manufacture	Tufted	-
Yarn type	100% PA6.6	-
Total pile weight	450-550	g/m²
Total carpet weight	4200 - 4300	g/m²
Secondary backing	Desso ProBase Polyver® - Polyscan®	-

Additional product properties according to /EN 1307/ can be found on the "Product Information System" (PRODIS) using the PRODIS registration number of the product. www.pro-dis.info or on the Desso website: www.desso.com

Technical Data

Name	Value	Unit
Product Form	Tiles	-

Base materials / Ancillary materials

Name	Value	Unit

Polyamide 6.6	11,8	%
Polyester	2,8	%
Polypropylene	1,0	%
Calcium Carbonate (Chalk)	41,7	%
Bitumen	14,8	%
Latex	27,6	%
Glass fibre	0,6	%

Reference service life
The service life of textile floorcoverings strongly depends on the correct installation taking into account the declared use classification and the adherence of cleaning and maintenance instructions. A minimum service life of 10 years could be assumed; technical service life can be considerably longer.

LCA: Calculation rules

Declared Unit

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Conversion factor to 1 kg	0.24	-
Mass reference (average product	4.25	kg/m^2

System boundary
Type of the EPD: Cradle-to-grave.

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

A1-A3 Production:
Energy provision, production of raw material that is not secondary material (e.g. additives, dyes), yarn (production), yarn processing (e.g. solution dying): Auxiliary material, transport of any material to the manufacturing site, waste water treatment, production of packaging material and waste processing of residual waste up to the landfill. Credits for electricity and steam from the incineration of production waste are not taken into account nor are any credits as a result of carbon offsetting.

A4 Transport:
Transport of the packed textile floor covering from manufacturing gate to the place of installation.

A5 Installation:
Installation of the textile floor covering, production and transport of auxiliary material, waste processing up to the landfill of residual waste, the production of the amount of carpet that occurs as installation waste incl. its transport to the place of installation.
Credits for electricity and steam from the incineration of installation waste leave the product system and are not declared in Module D.

B1 Use:
Product related VOC-emissions are not relevant.

B2 Maintenance:
Cleaning of the textile floor covering for a period of 1 year:
- Vacuum cleaning – electricity supply
- Wet cleaning – electricity, water consumption, production of the cleaning agent, waste water treatment.

The declared values in this module have to be multiplied with the assumed service time of the floor covering in the building in question.

B3 - B7:
The modules are not relevant and therefore not declared.

C1 De-construction:
De-construction of the floor covering is made by handcraft and causes no additional impacts.

C2 Transport:
Carpet waste is transported to a processor (100km) and after processing to the cement industry (200km).

C3 Waste processing:
The carpet tile is processed and used in the cement industry for energy recovery. Desso specific data is used as input for this module.

C4 Disposal
Non-recycled waste is discarded by Desso for use in the cement industry. Potential benefits are allocated to module D.

D Recycling Potential:
Desso ProBase® carpet tiles are used in the cement industry for energy recovery.

The focus is specifically on one waste scenario, which is 100% use of a carpet tile in the cement industry.

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.

LCA: Scenarios and additional technical information

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel	29.4	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	85	%
Gross density of products transported	700	kg/m^3

Installation in the building (A5)

Name	Value	Unit
Auxiliary	0.2	kg
Material loss	0.13	kg

Cardboard waste (packaging material) leaves the system for recycling. Installation waste is considered to be incinerated in a municipal waste incineration plant.

Maintenance (B2)

Name	Value	Unit
Maintenance cycle (wet cleaning)	1.5	1/year
Maintenance cycle (vacuum cleaning)	208	1/year
Water consumption (wet cleaning)	0.003	m^3
Cleaning Agent (wet cleaning)	0.06	g/year
Electricity consumption	0.314	kWh

Further information on cleaning and maintenance see www.desso.com

End of Life (C1-C4)

DESSO ProBase® products are processed to pellets at a processing plant and transported to the cement kiln. Removal of used carpet tiles is done by hand and the reverse logistic process is organized by Desso.

Name	Value	Unit
Collected separately	4.25	kg
Energy recovery	4.25	kg

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

Yarn, polyester, bitumen and latex-compounds are used as fuels in the cement production.

Name	Value	Unit
Yarn, PA6.6, polyester and latex Energy recovery of total tile	95.9	%

Energy recovery in the cement industry: the organic material of the carpet is used as secondary fuel in a cement kiln. It substitutes mainly lignite (57,5%), hard coal (26,3%) and petrol coke (12,1%). The inorganic material is substantially integrated in the cement clinker and substitutes virgin input.

LCA: Results

The modules B3 - B7 are not relevant during the service time of the carpet and are therefore not declared. Module C1 causes no additional impact (see "LCA: Calculation rules", "C1 De-construction") and is therefore not declared. The declared values in module B2 have to be multiplied with the assumed service time (in years) of the floor covering in the building considered.

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	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: Tufted carpet tiles Pile material 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3	C4	D
GWP	[kg CO_2-Eq.]	7.45E+0	5.50E-1	3.33E-1	0.00E+0	2.47E-1	2.36E-1	3.40E-2	0.00E+0	-4.43E-1
ODP	[kg CFC11-Eq.]	3.60E-7	1.01E-7	2.90E-8	0.00E+0	5.61E-8	4.31E-8	1.20E-10	0.00E+0	-1.51E-7
AP	[kg SO_2-Eq.]	3.44E-2	2.22E-3	1.05E-3	0.00E+0	1.82E-3	9.53E-4	9.26E-6	0.00E+0	-3.74E-3
EP	[kg $(PO_4)^{3-}$-Eq.]	8.82E-3	4.78E-4	7.68E-4	0.00E+0	8.59E-5	2.05E-4	2.15E-6	0.00E+0	-3.68E-4
POCP	[kg ethene-Eq.]	1.67E-3	9.39E-5	3.26E-4	0.00E+0	8.26E-5	4.02E-5	7.45E-7	0.00E+0	-2.15E-4
ADPE	[kg Sb-Eq.]	5.76E-2	4.01E-3	1.43E-3	0.00E+0	3.15E-4	1.72E-3	2.11E-8	0.00E+0	-3.83E-2
ADPF	[MJ]	1.21E+2	8.77E+0	9.01E-1	0.00E+0	5.37E+0	3.20E-2	3.76E+0	0.00E+0	-5.20E+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: Tufted carpet tiles Pile material 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3	C4	D
PERE	[MJ]	6.81E+0	1.04E-1	1.19E+0	0.00E+0	3.42E-1	4.47E-2	6.45E+0	0.00E+0	-9.95E-2
PERM	[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
PERT	[MJ]	6.81E+0	1.04E-1	1.19E+0	0.00E+0	3.42E-1	4.47E-2	6.45E+0	0.00E+0	-9.95E-2
PENRE	[MJ]	7.39E+1	8.92E+0	3.81E+0	0.00E+0	4.91E+0	3.82E+0	3.20E-2	0.00E+0	-6.81E+1
PENRM	[MJ]	6.01E+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
PENRT	[MJ]	1.34E+2	8.92E+0	3.81E+0	0.00E+0	4.91E+0	3.82E+0	3.20E-2	0.00E+0	-6.81E+1
SM	[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
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
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	5.98E+1
FW	[m^3]	8.88E-3	4.91E-4	2.31E-2	0.00E+0	9.85E-3	2.10E-4	3.27E-5	0.00E+0	-2.01E-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: Tufted carpet tiles Pile material 450 to 550 g/m2 Polyamide 6.6. with 0% recycled content and ProBase® backing

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3	C4	D
HWD	[kg]	6.13E-5	4.98E-6	3.52E-3	0.00E+0	1.75E-1	2.13E-6	0.00E+0	0.00E+0	-6.04E-6
NHWD	[kg]	8.36E-1	3.90E-1	3.83E-2	0.00E+0	9.43E-1	1.67E-1	1.35E-2	0.00E+0	-4.67E+1
RWD	[kg]	2.09E-4	5.70E-5	3.51E-3	0.00E+0	1.75E-1	2.44E-5	2.22E-9	0.00E+0	-4.55E-6
CRU	[kg]	0.00E+0	0.00E+0	2.37E-5	0.00E+0	1.18E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[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
MER	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.25E+0	0.00E+0	0.00E+0
EEE	[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
EET	[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	5.98E+1

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

Interpretation

In order to understand the full environmental impact of the products declared in this EPD, one should consider Module D when comparing on building level.

This product is specifically designed for design and recycling, which is demonstrated in Module D.

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