ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Interface Europe Manufacturing BV
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-INT-20150224-CBC1-EN
Issue date	21.01.2016
Valid to	20.01.2021

Modular carpet tiles

pile material polyamide 6.6 with 25-50% recycled content,
500-600 g/m², solution dyed,
Graphlex® backing system

Interface®

Institut Bauen und Umwelt e.V.

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

General Information

Interface®

Modular carpet tiles
pile material PA 6.6 with 25-50% recycled content, 500-600 g/m², solution dyed,
Graphlex® backing system

Programme holder
IBU - Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Owner of the Declaration
Interface Europe Manufacturing BV
Industrielaan 15
3925 ZG Scherpenzeel
The Netherlands

Declaration number
EPD-INT-20150224-CBC1-EN

Declared product / Declared unit
1 m² tufted modular carpet tiles having a surface pile of polyamide 6.6 with recycled content and a Graphlex® backing system

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

Scope:
The declaration applies to a group of similar products with a total pile material weight of 500-600 g/m² and a recycled content in the pile material of 25-50%.
It is only valid in conjunction with a valid PRODIS licence.
The product is tufted in Craigavon, Ireland, or in Scherpenzeel, the Netherlands, and it is back coated in Scherpenzeel.
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
21.01.2016

Valid to
20.01.2021

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)

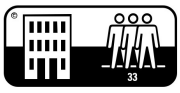
Dr. Eva Schmincke
(Independent verifier appointed by SVR)

Product

Product description
Tufted modular carpet tiles having a surface pile of solution dyed polyamide 6.6 with 25-50% recycled content, a primary backing with recycled content and a Graphlex® backing system with recycled content.
Graphlex® backing system:
Bitumen backing compound (containing recycled materials), glass-fleece reinforcement and polypropylene covering fleece.

The declaration applies to a group of products with a total pile material weight of 500-600 g/m² and with a recycled content in the pile material of 25-50%.
The calculations refer to an average pile material weight of 550 g/m² with a recycled content of 28%.
Average recycled content out of total weight: 51.6%.

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.



Technical Data

Name	Value	Unit
Product Form	Modular carpet tiles	-
Type of manufacture	Tufted	-
Yarn type	PA 6.6 with 25-50% recycled content, solution dyed	-
Secondary backing	Heavy backing bitumen based with textile bottom	-
Total pile weight	500-600	g/m²
Total carpet weight	up to 4520	g/m²

Additional product properties and performance ratings 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 manufacturer's technical information section (www.interface.com).

Base materials / Ancillary materials

Name	Value	Unit
Polyamide 6.6	12.3	%
Polyester	1.9	%
Polyamide 6	0.8	%
Polypropylene	1.1	%
Limestone	51.4	%
Aluminiumhydroxide	5.0	%
SBR-latex/SBS-copolymer	9.1	%
Bitumen	16.9	%
Glass fibre	0.8	%
Additives	0.7	%

Reference service life

The service life of textile floor coverings strongly 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 10 years can be assumed, technical service life can be considerably longer.

LCA: Calculation rules

Declared Unit

Name	Value	Unit
Declared unit	1	m²
Conversion factor to 1 kg (average product)	0.22	m²/kg
Mass reference (average product)	4.47	kg/m²

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, processing of secondary 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). Credits for electricity and steam from the incineration of production waste are aggregated.

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

A5 Installation:
Installation of the textile floor covering, production and transport of auxiliary materials, waste processing up to the landfill disposal of residual waste (except radioactive waste), the production of the amount of carpet that occurs as installation waste including its transport to the place of installation.
Credits for electricity and steam from the incineration of packaging and installation waste leave the product system.

B1 Use:
Indoor emissions during the use stage. After the first year no product related VOC emissions are relevant due to known VOC decay curves of the product.

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 life of the floor covering in the building in question.

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 carpet waste to a landfill, to the municipal waste incineration plant (MWI) or to the waste collection facility for recycling.

C3 Waste processing:
C3-1, C3-2: Landfill disposal and waste incineration need no waste processing.
C3-3: Collection of the carpet waste, waste processing (granulating).

C4 Disposal
C4-1, C4-2: Impact from landfill disposal or from waste incineration (credits leave the system boundaries),
C4-3: The pre-processed carpet waste leaves the system and needs no disposal.

D Recycling potential:
D-A5: Energy credits from waste incineration of packaging and installation waste (processing with < 60% efficiency),
D-1, D-2: Energy credits from landfill disposal and from waste incineration of carpet waste at the end-of-life (processing with < 60% efficiency),
D-3: Energetic and substance related credits from recovery of the carpet at the end-of-life in a cement plant (substitution of material and fuel input in the cement kiln), transport from the reprocessing plant to the cement kiln.

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

The following information refers to the declared modules and is the basis for calculations or can be used for further calculations. All indicated values refer to the declared functional unit.

Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel (truck, EURO 0-5 mix)	0.0079	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	85	%
Gross density of products transported	710	kg/m³

Installation in the building (A5)

Name	Value	Unit
Auxiliary (PET-connectors)	0.004	kg
Material loss	0.13	kg

Packaging waste and installation waste are considered to be incinerated in a municipal waste incineration plant.

Maintenance (B2)
Indication per m² and year

Name	Value	Unit
Maintenance cycle (wet cleaning)	1.5	1/year
Maintenance cycle (vacuum cleaning)	208	1/year
Water consumption (wet cleaning)	0.004	m³
Cleaning agent (wet cleaning)	0.09	kg
Electricity consumption	0.314	kWh

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

End of Life (C1-C4)
Three 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)
Scenario 3: 100% recycling in the cement industry

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

EOL-impact = x% impact (Scenario 1)
+ y% impact (Scenario 2)
+ z% impact (Scenario 3)

Name	Value	Unit
Collected as mixed construction waste (scenario 1 and 2)	4.47	kg
Collected separately (scenario 3)	4.47	kg
Landfilling (scenario 1)	4.47	kg
Energy recovery (scenario 2)	4.47	kg
Energy recovery (scenario 3)	1.91	kg
Recycling (scenario 3)	2.56	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information
The recovery or recycling potentials due to the three end-of-life scenarios (module C) are indicated separately.

Recycling in the cement industry (scenario 3)
/VDZ e.V./
The organic material of the carpet is used as secondary fuel in a cement kiln. It mainly substitutes for lignite (64.2%), hard coal (25.4%) and petrol coke (10.4%).
The inorganic material is substantially integrated in the cement clinker and substitutes for original material input.

LCA: Results

Information on un-declared modules:
Modules B3 - B7 are not relevant during the service life of the carpet and are therefore not declared.
Modules C1, C3/1 and C3/2 cause no additional impact (see "LCA: Calculation rules") and are therefore not declared.
Module C2 represents the transport for scenarios 1, 2 and 3.
Column D represents module D/A5.

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	MND	MND	MND	MND	MND	MND	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3/3	C4/1	C4/2	C4/3	D	D/1	D/2	D/3
GWP	[kg CO_2-Eq.]	8.22	0.19	0.76	0.00	0.35	0.01	0.03	3.92	6.31	0.00	-0.21	-0.14	-2.72	-0.57
ODP	[kg CFC11-Eq.]	4.11E-8	7.83E-13	1.51E-9	0.00E+0	9.58E-9	4.27E-14	2.18E-11	8.42E-12	7.18E-9	0.00E+0	-6.89E-11	-1.02E-10	-9.12E-10	-1.77E-8
AP	[kg SO_2-Eq.]	2.14E-2	8.53E-4	8.61E-4	0.00E+0	1.72E-3	4.65E-5	1.47E-4	9.70E-4	2.40E-3	0.00E+0	-5.41E-4	-6.87E-4	-7.14E-3	-3.11E-3
EP	[kg $(PO_4)^{3-}$-Eq.]	3.81E-3	2.16E-4	1.54E-4	0.00E+0	2.79E-4	1.18E-5	8.01E-6	4.19E-3	5.93E-4	0.00E+0	-3.72E-5	-3.73E-5	-4.87E-4	-5.40E-4
POCP	[kg ethene-Eq.]	2.85E-3	-3.15E-4	9.04E-5	1.11E-4	2.44E-4	-1.72E-5	8.60E-6	1.04E-3	1.70E-4	0.00E+0	-4.53E-5	-4.00E-5	-5.91E-4	-3.68E-4
ADPE	[kg Sb-Eq.]	-7.87E-8	7.47E-9	-1.20E-8	0.00E+0	8.09E-7	4.08E-10	5.14E-9	4.49E-8	-7.01E-7	0.00E+0	-2.06E-8	-2.39E-8	-2.71E-7	-2.44E-7
ADPF	[MJ]	177.00	2.62	5.58	0.00	7.01	0.14	0.33	2.93	2.33	0.00	-2.96	-1.52	-38.30	-71.80

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	C2	C3/3	C4/1	C4/2	C4/3	D	D/1	D/2	D/3
PERE	[MJ]	17.40	0.15	0.53	0.00	0.64	0.01	0.11	0.19	0.02	0.00	-0.35	-0.51	-4.60	-0.29
PERM	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PERT	[MJ]	17.40	0.15	0.53	0.00	0.64	0.01	0.11	0.19	0.02	0.00	-0.35	-0.51	-4.60	-0.29
PENRE	[MJ]	118.03	2.63	5.92	0.00	8.32	0.14	0.52	3.06	2.77	0.00	-3.58	-2.44	-46.50	-72.40
PENRM	[MJ]	68.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PENRT	[MJ]	187.00	2.63	5.92	0.00	8.32	0.14	0.52	3.06	2.77	0.00	-3.58	-2.44	-46.50	-72.40
SM	[kg]	2.34	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	[MJ]	2.14E-3	1.75E-5	6.63E-5	0.00E+0	5.08E-5	9.53E-7	6.90E-6	2.58E-3	1.52E-5	0.00E+0	-3.89E-5	-3.21E-5	-5.07E-4	-6.70E-5
NRSF	[MJ]	2.46E-2	1.83E-4	7.34E-4	0.00E+0	5.75E-4	9.98E-6	7.20E-5	5.37E-3	1.42E-4	0.00E+0	-4.07E-4	-3.35E-4	-5.31E-3	-6.99E-4
FW	[m³]	3.24E-2	2.58E-4	2.35E-3	0.00E+0	1.94E-3	1.41E-5	2.20E-4	4.07E-4	1.73E-2	0.00E+0	-7.02E-4	-1.03E-3	-9.29E-3	-6.72E-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	C2	C3/3	C4/1	C4/2	C4/3	D	D/1	D/2	D/3
HWD	[kg]	4.87E-6	0.00E+0	5.40E-6	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
NHWD	[kg]	2.38E-2	9.91E-3	3.07E-1	0.00E+0	6.22E-1	5.41E-4	1.21E-1	3.87E+0	1.59E+0	0.00E+0	-3.84E-1	-5.65E-1	-5.09E+0	-6.00E+1
RWD	[kg]	3.75E-3	3.60E-6	1.18E-4	0.00E+0	3.96E-4	1.96E-7	7.82E-5	5.14E-5	1.45E-4	0.00E+0	-2.47E-4	-3.64E-4	-3.27E-3	-1.30E-4
CRU	[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	0.00	0.00
MFR	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
MER	[kg]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91	0.00	0.00	0.00	0.00
EEE	[MJ]	0.00	0.00	1.37	0.00	0.00	0.00	0.00	1.04	9.06	0.00	0.00	0.00	0.00	0.00
EET	[MJ]	0.00	0.00	3.14	0.00	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00

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; EEE = Exported thermal energy

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.

References

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin(pub.):
Generation of Environmental Product Declarations (EPDs);

General principles
for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013/04
www.bau-umwelt.de

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 Part A
Institut Bauen und Umwelt e.V., Berlin (pub.):
Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU),
Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, April 2013
www.bau-umwelt.de

PCR Part B
Institut Bauen und Umwelt e.V., Berlin (pub.):
Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU),
Part B: Requirements on the EPD for floor coverings, V1.6, July 2014
www.bau-umwelt.de

EN 1307
DIN EN 1307: 2014-07:Textile floor coverings - Classification

EN 14041
DIN EN 14041:2008-05:Resilient, textile and laminate floor coverings

ISO 10874
DIN EN ISO 10874:2012-04:Resilient, textile and laminate floor coverings - Classification

EN 13501-1:
DIN EN 13501-1:2010-01: Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

VDZ e.V.:
Umweltdaten der deutschen Zementindustrie 2013

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

Programme holder
Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@bau-umwelt.com
Web **www.bau-umwelt.com**

Author of the Life Cycle Assessment
Gemeinschaft umweltfreundlicher
Teppichboden (GUT) e.V.
Schönebergstraße 2
52068 Aachen
Germany

Tel +49 (0)241 96843 410
Fax +49 (0)241 96843 400
Mail mail@gut-ev.de
Web **www.gut-ev.org**

Owner of the Declaration
Interface Europe Manufacturing BV
Industrielaan 15
3925ZG Scherpenzeel
Netherlands

Tel +31 (0)33 277 55 55
Fax +31 (0)33 277 55 54
Mail interface.nl@interface.com
Web **www.interface.com**