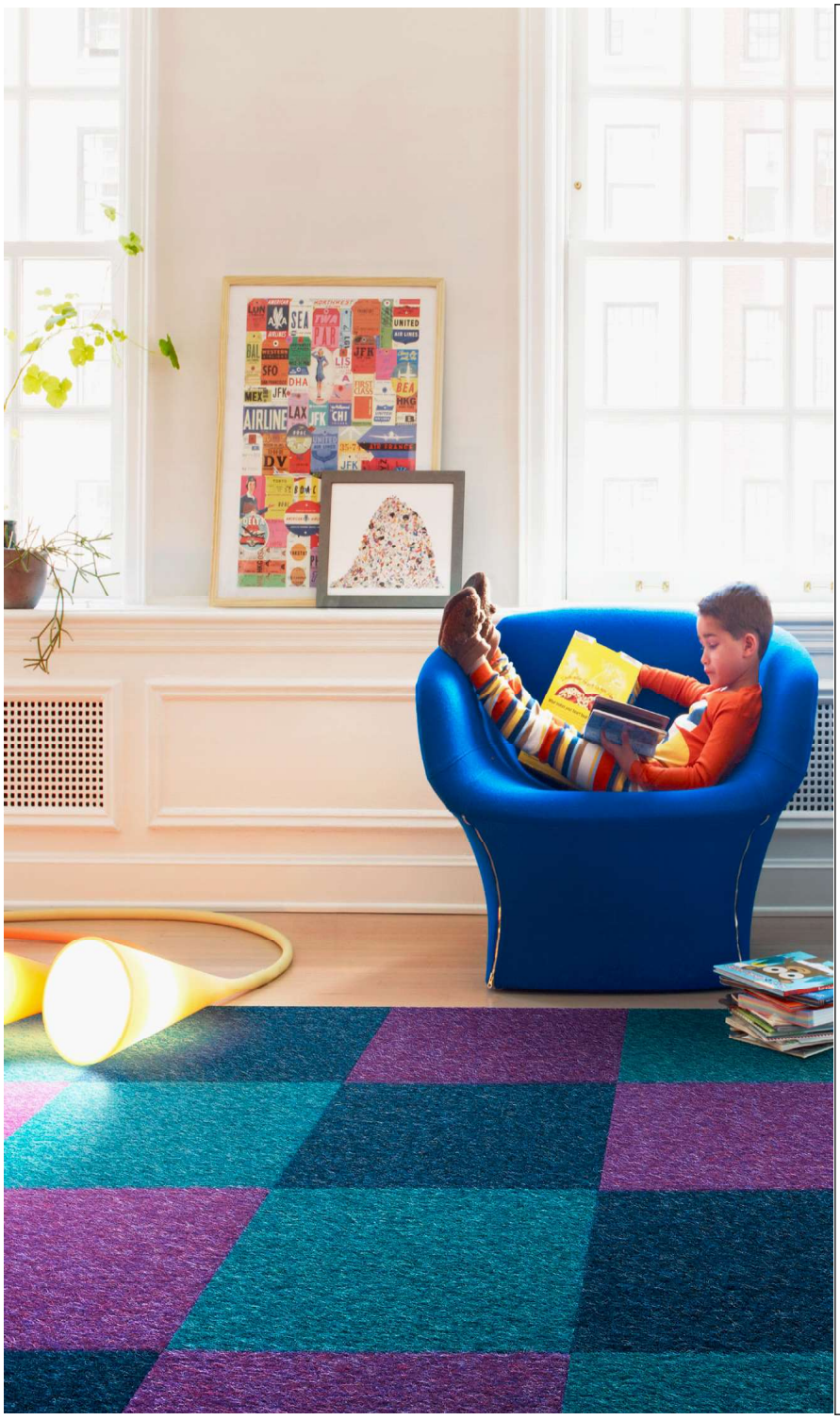
ENVIRONMENTAL PRODUCT DECLARATION

MODULAR CARPET

INTERFACE AMERICAS
GRAPHLAR®, NEEDLEFELT STYLES



Interface®

Interface products are produced by Interface, the world's largest manufacturer of commercial carpet tile.

For over 40 years Interface has consistently led the industry through design and innovation and is a world leader in environmental sustainability. We are well along the path to achieving Mission Zero®, our promise to eliminate any negative impact we have on the environment by 2020. We are committed to making our progress transparent.

At Interface, we believe Life Cycle Assessment is critical for evaluating the environmental impacts of our products and that the LCA based Environmental Product Declaration is the best way to provide full disclosure of those impacts to our customers.

Interface was one of the first companies to develop EPDs for all of our products manufactured globally, and we continue to remain committed to providing this level of transparency to our customers, partners and the industry at large.

For more information visit www.interface.com

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION ULE.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

Interface®

Interface Americas Modular Carpet on Graphlar® Needlefelt Styles

According to ISO 14025 and EN 15804

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Interface, Inc.
DECLARATION NUMBER	4787521006.132.1
DECLARED PRODUCT	Interface Americas modular carpet on Graphlar, Needlefelt styles
REFERENCE PCR	IBU and UL Environment. PCR for Building-Related Products and Services - Part A: Calculation rules for the LCA and Requirements Project Report, (IBU/ULE,Version 1.306.19.2014) IBU. Part B: Requirements on the EPD for Floor coverings (IBU, V1.6, 07.30.2014)
DATE OF ISSUE	January 10, 2018
PERIOD OF VALIDITY	5 Years
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications

The PCR review was conducted by:	UL Environment Review Panel
	IBU Independent Expert Committee (SRV)
	epd@ulenvironment.com
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	Grant R. Martin
	Grant R. Martin, UL Environment
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas Gloria
	Thomas Gloria, Industrial Ecology Consultants

This EPD conforms with EN 15804

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Interface®

Interface Americas
Modular Carpet on Graphlar®
Needlefelt Styles

According to ISO 14025

Product

Product description

This Environmental Product Declaration covers all styles and patterns of modular carpet on Graphlar® recycled Nylon, polyester, and polypropylene yarns. The products are manufactured in Scherpenzeel, Netherlands. A medium yarn weight of 1460 grams per square meter is reported.

Application

Modular installation of textile floor covering in residential buildings

Technical Data

Name	Value	Unit
Product Form	Tiles	-
Type of Manufacture	Needlefelt	-
Yarn Type	Nylon, Polyester, Polypropylene	-
Secondary Backing	Polymer modified bitumen	-
Total Weight	4670	grams/m^2
Total Yarn Weight	1460	grams/m^2

Delivery Status

Available in a range of tile and plank sizes, mostly commonly 0.5 x 0.5 meter squares and 1.0 x 0.25 meter planks.

Base Materials

Component	Material	Mass %
Yarn	Polyester	10
	Nylon	17
	Polypropylene	5
Carrier	Polyester	1
Secondary backing	Bitumen	66
	SBS	
	Recycled limestone	
	Polypropylene	

Manufacture

Yarns are needlefelted into fabric. A secondary backing is applied. The product is then cut into tiles and packaged.

Environment and health during manufacturing

Manufacture of the product complies with applicable EU regulations and any stricter national law provisions at the place of manufacture.

Packaging

Carpet tiles are packaged in boxes made with 100% post-consumer recycled cardboard. Packaging waste should be reused or sent to local cardboard recycling facilities.

Conditions of use

During the reference service life of the carpet, it should be cleaned in accordance with the product warranty instructions including vacuuming and extraction cleaning. The frequency is dependent upon the expected foot traffic and local conditions.

Environment and health during use

Product has low VOC emissions as indicated by compliance with the Carpet and Rug Instuitute's Green Label Plus requirements. The current certificate can be found at http://www.carpet-rug.org/glp-carpet-products.html

Reference service life

The reference service life of this product is 1 year based on product warranty.

Extraordinary effects

Fire

Name	Value
Radiant panel (ASTM E-648)	Class 1
Smoke density (ASTM E-662)	< 450

Water: The product's backing is impervious to water, protecting the subfloor from leaks and spills. Exposure to flooding for long periods may result in damage to the product.

Mechanical destruction: The product is intended for residential applications. Performance requires proper installation according to Interface® installation guidelines.

Re-use phase

The modular aspect of the product along with TacTile® installation allows for easy re-use of the product. The product is intended to be recycled through Interface's ReEntry 2.0 process.

Disposal

At end of life the product should be returned to Interface through Interface's ReEntry 2.0 process by contacting Interface at 888-733-6873. Disposal in municipal landfill or commercial incineration facilities is permissible in accordance with local regulations.

LCA: Calculation rules

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Conversion factor to 1 kg	0.214	-

Mass	4.670	kg/m^2

System boundary

This study includes all relevant cradle-to-grave environmental information for the life cycle of one square meter of carpet. The analysis period for each module is one fiscal year. The system boundaries include:

A1-A3 Product stage

A1 raw material extraction and processing, and processing of recycled materials
A2 transport to the Interface factory and inter-company transport between buildings
A3 manufacturing at Interface including materials, packaging, energy, and waste disposal or recycling

A4-A5 Construction stage

A4 transport to installation site
A5 installation including ancillary materials required for installation and trim-waste disposal

B2 Maintenance: Includes the energy for vacuuming and wet extraction cleaning and also the production and transport of cleaning agents. The treatment of the waste water from extraction cleaning is included.

C2 Transport of waste to local disposal

C4 Disposal

Estimates and assumptions

The datasets for materials upstream from Interface manufacturing are a combination of information from the GaBi database and supplier provided datasets. Inventories for all materials are not available and when unavailable, conservative proxy datasets were chosen based on similarity of material.

Cut-off criteria

As dictated by the Part A: Calculation rules for the life cycle assessment and requirements, the cut-off criteria is less than 1% for energy use and less than 1% of total mass per unit process, the sum of which shall not exceed 5% of either energy or mass. If a flow met the cut-off criteria for exclusion, yet was thought to have significant environmental impact, then it was included.

Background data

The datasets for materials upstream from Interface manufacturing are a combination of information from the GaBi database version 6.116 in 2016 and supplier provided datasets. The supplier provided data adds significant confidence to the LCA result because it is geographically and technologically specific to the Interface materials. This supplier specific data covers a majority of the environmental impact of the product and includes the Nylon yarn, tufting primary, fiberglass, plasticizer, filler, and product packaging.

Data quality

The data quality ranges from good to very good. The temporal quality of the data is very good with the Interface data being from 2015, the supplier specific data ranging from 2012 to 2016 and the GaBi background data being from 2016.

Period under review

The data collection and the product described are an average product manufactured in 2015.

Allocation

Where relevant, the background data incorporates some allocation such as in the power mix. There are no co-products produced in the process, so the LCA model does not include allocation. No credits were taken for recycling of production waste.

Comparability

A comparison or an evaluation of EPD data is only possible if all of the data sets were created according to EN15804 and the building contexts are taken into account.

LCA: Scenarios and additional technical information

Declared unit

Name	Value	Unit
Transport to the construction site (A4)		
Liters of fuel	0.00891	l/100 km
Transport distance	7930	km
Capacity utilization	85	%
Installation in the building (A5)		
Auxiliary materials	0.004	kg
Maintenance (B2)		
Vacuum cleaning	7	1/week
Vacuum cleaning per year	105	1/year
Extraction cleaning	2	1/year
Extraction cleaning per RSL	30	1/RSL
Water consumption	1.93	kg/year
Electricity consumption	1.615	MJ/year
Cleaning agent	0.007	kg/year
Reference service life (RSL)		
RSL	1	year
End of Life		
Transport to disposal	32.2	km
Landfilling	4670	kg

LCA results

Description of the system boundary (X = included in LCA; MND = module not declared)

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PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS (BEYOND THE SYSTEM BOUNDARY)
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	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	MND	X	MND	MND	MND	MND	MND	MND	X	MND	X	MND

Results of the LCA - Environmental impact potentials

CML 2001 - Jan. 2016

	A1-A3	A4	A5	B2	C2	C4
GWP [kg CO2-Equiv.]	1.14E01	6.08E-01	3.63E-01	4.52E-01	4.42E-03	3.28E-01
ODP [kg R11-Equiv.]	1.27E-08	2.49E-12	6.75E-10	2.04E-09	2.90E-14	1.21E-11
AP [kg SO2-Equiv.]	3.94E-02	1.56E-02	1.02E-03	1.29E-03	3.35E-05	8.96E-04
EP [kg Phosphate-Equiv.]	6.89E-03	1.73E-03	9.42E-04	1.94E-04	8.80E-06	8.86E-04
POCP [kg Ethene-Equiv.]	3.59E-03	4.98E-04	1.33E-04	8.45E-05	-1.43E-05	1.16E-04
ADPe [kg Sb-Equiv.]	1.83E-03	3.06E-08	6.73E-08	6.38E-04	6.72E-10	6.29E-08
ADPf [MJ]	2.13E02	7.66E00	5.17E00	4.20E00	6.30E-02	4.63E00

TRACI 2.1

	A1-A3	A4	A5	B2	C2	C4
GWP [kg CO2-Equiv.]	1.14E01	6.07E-01	3.58E-01	4.50E-01	4.41E-03	3.24E-01
ODP [kg CFC 11-Equiv.]	1.39E-08	2.65E-12	8.80E-10	2.23E-09	3.08E-14	1.29E-11
AP [kg SO2-Equiv.]	4.19E-02	1.67E-02	1.06E-03	1.29E-03	4.57E-05	9.41E-04
EP [kg N-Equiv.]	5.73E-03	6.05E-04	4.53E-04	2.75E-04	3.58E-06	4.26E-04
SFP [kg O3-Equiv.]	4.38E-01	3.12E-01	1.72E-02	1.57E-02	1.04E-03	1.57E-02

* C4: This product is recycled at end of life through Interface's extensive ReEntry program. Because it is a closed loop recycling process controlled by Interface, the impacts from it are included in A1-A3.

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; SFP = Smog air

Results of the LCA - Resource use: declared unit and product

	A1-A3	A4	A5	B2	C2	C4
PERE [MJ]	14.8	0.0417	-	0	0.00102	0.33
PERM [MJ]	13.7	-	0.351	0.449	-	-
PERT [MJ]	28.5	0.0417	0.351	0.449	0.00102	0.33
PENRE [MJ]	0.0839	7.69	-	4.31	0.0633	4.81
PENRM [MJ]	225	-	5.39	0.881	-	-

PENRT [MJ]	225	7.69	5.39	5.19	0.0633	4.81
SM [kg]	2.3	-	-	-	-	-
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [m³]	0.0853	0.00037	2.35E-005	0.00181	1.28E-005	2.12E-005

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: declared unit and product

	A1-A3	A4	A5	B2	C2	C4
HWD [kg]	9.65E-006	4.39E-009	2.89E-008	2.45E-009	8.08E-011	2.73E-008
NHWD [kg]	0.0716	8.8E-005	4.77	0.00172	2.13E-006	4.51
RWD [kg]	0.00169	1.02E-005	7.86E-005	0.000372	1.06E-007	7.35E-005
CRU [kg]	-	-	-	-	-	-
MFR [kg]	0.0382	-	-	-	-	0
MER [kg]	0.12	-	0	-	-	0
EEE [MJ]	-	-	-	-	-	-
EET [MJ]	-	-	-	-	-	-

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

References

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