

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	modulyss®
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-MOD-20170095-CBC1-EN
Issue date	9-6-2017
Valid to	8-6-2022

## Tufted carpet tiles

with a maximum total pile weight of 1300 g/m<sup>2</sup>,  
pile material of polyamide 6,  
colored by aqueous dyeing methods,  
Back2Back backing

**modulyss®**

[www.ibu-epd.com](http://www.ibu-epd.com) / <https://epd-online.com>



## General Information

modulyss®

### Programme holder

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

### Declaration number

EPD-MOD-20170095-CBC1-EN

### This Declaration is based on the Product Category Rules:

Floor coverings, 07.2016  
(PCR tested and approved by the SVR)

### Issue date

9-6-2017

### Valid to

8-6-2022



Prof. Dr.-Ing. Horst J. Bossenmayer  
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Dr. Burkhard Lehmann  
(Managing Director IBU)

### Tufted carpet tiles

max. total pile weight 1300 g/m<sup>2</sup> PA 6,  
aqueous dyeing methods,  
Back2Back backing

### Owner of the Declaration

modulyss  
Zevensterestraat 21  
9240 Zele  
Belgium

### Declared product / Declared unit

1 m<sup>2</sup> tufted carpet tiles with a surface pile of PA 6 and  
a Back2Back backing

### Scope:

The manufacturer declaration applies to a group of  
similar products with a maximum total pile weight of  
1300 g/m<sup>2</sup>.

The products are manufactured in the modulyss  
production site Zele, Belgium.

Specific LCA results of products having a lower total  
pile weight can be taken from the corresponding tables  
of the annex or can be calculated by using equation  
1 given in the annex (see annex chapter: 'General  
Information on the annex'). The result tables of the  
annex refer to categories of total pile weights in steps  
of 100 g/m<sup>2</sup>. The declaration is only valid in conjunction  
with a valid GUT-/PRODIS/ license of the product.

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.

### Verification

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

Independent verification of the declaration  
according to /ISO 14025/

internally  externally



Angela Schindler  
(Independent verifier appointed by SVR)

## Product

### Product description / Product definition

Tufted carpet tiles having a surface pile of polyamide 6  
and a Back2Back backing.

Back2Back backing: Bitumen based heavy backing  
with recycled content. Recycled content includes  
recycled limestone and recycled production waste  
'B2B' (see more information on the website  
[www.modulyss.com](http://www.modulyss.com)).

The carpet is colored by aqueous dyeing methods.  
The percentage of the recycled content out of total  
weight depends on the total pile weight of the  
product. For a total pile weight of 1300 g/m<sup>2</sup> the  
recycled content amounts to 43%. For a total pile  
weight up to 600 g/m<sup>2</sup> the recycled content amounts to  
at least 50%.

The declaration applies to a group of products with a

maximum total pile weight of 1300 g/m<sup>2</sup>.

LCA results are calculated for products with the  
maximum total pile weight.

More specific LCA results of products having a lower  
total pile weight can be taken from the corresponding  
tables of the annex. These result tables refer to  
categories of total pile weights in steps of 100 g/m<sup>2</sup>.  
The LCA results always refer to the highest total pile  
weight of the corresponding pile weight category.  
Results for similar products with any other total pile  
weight can be calculated by using equation 1 given in  
the annex (see annex chapter: 'General Information on  
the annex').

For the placing on the market of the product in the EU/EFTA (with the exception of Switzerland) Regulation (EU) No. 305/2011 /CPR/ applies. The Declaration of Performance of the products taking into consideration /EN 14041/ and the CE-marking of the products can be found on the manufacturer's technical information section ([www.modulyss.com](http://www.modulyss.com)).

### Application

The products can be used in commercial areas. The use class as defined in /EN 1307/ can be found on the Product Information System /PRODIS/ using the /PRODIS/ registration number of the product ([www.pro-dis.info](http://www.pro-dis.info)) or on the manufacturer's technical information section.

### Technical Data

Name	Value	Unit
Type of manufacture	Tufted tiles, aqueous dyeing methods	-
Product Form	Tiles 50 cm x 50 cm	-
Secondary backing	Back2Back backing	-
Yarn type	Polyamide 6	-
Total pile weight	max. 1300	g/m <sup>2</sup>
Total carpet weight	max. 5300	g/m <sup>2</sup>

Additional product properties in accordance with /EN 1307/ and performance data of the product in accordance with the Declaration of Performance with respect to its Essential Characteristics according to /EN 14041/ can be found on the Product Information System /PRODIS/ using the /PRODIS/ registration number of the product ([www.pro-dis.info](http://www.pro-dis.info)) or on the manufacturer's technical information section ([www.modulyss.com](http://www.modulyss.com)).

### Base materials / Ancillary materials

Name	Value	Unit
Polyamide 6	24.5	%
Polyester	3.3	%
Polypropylene	0.5	%
Limestone	48.2	%
Aluminiumhydroxide	5.6	%
SBR-latex/SBS-copolymer	4.9	%
Bitumen	12.5	%
Glass fibre	0.2	%
Additives	0.2	%

The products are registered in the GUT-/PRODIS/ Information System. The /PRODIS/ system ensures the compliance with limitations of various chemicals and VOC-emissions and a ban on use of all substances that are listed as 'Substances of Very High Concern' (SVHC) under /REACH/.

### Reference service life

A calculation of the reference service life according to /ISO 15686/ is not possible.

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	m <sup>2</sup>
Conversion factor to 1 kg	0.19	m <sup>2</sup> /kg
Mass reference	5.30	kg/m <sup>2</sup>

The declared unit refers to 1 m<sup>2</sup> produced textile floor covering. Output of module A5 'Assembly' is 1 m<sup>2</sup> installed textile floor covering.

### 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). Benefits for generated electricity and steam due to 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, processing of installation waste and packaging waste 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.

Generated electricity and steam due to the incineration of waste are listed in the result table as exported energy.

Preparing of the floor and auxiliary materials (adhesives, fixing agents, PET connectors) are beyond the system boundaries and not taken into account.

#### 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 by the assumed service life of the floor covering in the building in question (see annex, chapter 'General information on use stage').

#### 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: Landfill disposal need no waste processing.

C3-2: Impact from waste incineration (plant with  $R1 > 0.1$ ), generated electricity and steam are listed in the result table as exported energy.

C3-3: Collection of the carpet waste, waste processing (granulating).

#### C4 Disposal

C4-1: Impact from landfill disposal,

C4-2: The carpet waste leaves the system in module C3-2,

C4-3: The pre-processed carpet waste leaves the system in module C3-3

#### D Recycling potential:

D-A5: Benefits for generated energy due to incineration of packaging and installation waste (incineration plant with  $R1 > 0.6$ ),

D-1: Benefits for generated energy due to landfill disposal of carpet waste at the end-of-life,

D-2: Benefits for generated energy due to incineration of carpet waste at the end-of-life (incineration plant with  $R1 > 0.6$ ),

D-3: Benefits for saved fossil energy and saved inorganic material due to recovery of the carpet in a cement plant at the end-of-life, 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. Background data are taken from the /GaBi database 2017/, service pack 33 and from the /ecoinvent 3.3/ database.

## LCA: Scenarios and additional technical information

The following information refer to the declared modules and are the basis for calculations or can be used for further calculations. The indicated values refer to the declared functional unit of all products with a total pile weight up to 1300 g/m<sup>2</sup>. Specific information on products having a lower total pile weight can be taken from the annex.

#### Transport to the construction site (A4)

Name	Value	Unit
Litres of fuel (truck, EURO 0-5 mix)	0.0106	l/100km
Transport distance	700	km
Capacity utilisation (including empty runs)	85	%

#### Installation in the building (A5)

Name	Value	Unit
Material loss	0.16	kg

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

Preparation of the floor and auxiliaries (adhesives, fixing agents, PET connectors, etc.) are not taken into account.

#### Maintenance (B2)

Indication per m<sup>2</sup> floor covering and per year (see annex, chapter 'General Information on use stage')

Name	Value	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

Further information on cleaning and maintenance see [www.modulyss.com](http://www.modulyss.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) with  $R1 > 0.6$

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:

$$\begin{aligned} \text{EOL-impact} &= x\% \text{ impact (Scenario 1)} \\ &+ y\% \text{ impact (Scenario 2)} \\ &+ z\% \text{ impact (Scenario 3)} \end{aligned}$$

Name	Value	Unit
Collected as mixed construction waste (scenario 1 and 2)	5.3	kg
Collected separately (scenario 3)	5.3	kg
Landfilling (scenario 1)	5.3	kg
Energy recovery (scenario 2)	5.3	kg
Energy recovery (scenario 3)	2.44	kg
Recycling (scenario 3)	2.86	kg

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

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 (61.9%), hard coal (26.8%) and petrol coke (11.3%).

The inorganic material is substantially integrated in the cement clinker and substitutes for original material input.

## LCA: Results

The results are valid for all declared products with a maximum total pile weight of 1300 g/m<sup>2</sup>.

LCA results for product groups having a lower total pile weight can be taken from the corresponding tables of the annex. The LCA results always refer to the highest total pile weight of the corresponding pile weight category. Results for similar products with any other total pile weight can be calculated by using equation 1 given in the annex (see annex chapter: 'General Information on the annex').

The declared result figures in module B2 have to be multiplied by the assumed service life (in years) of the floor covering in the building under consideration (see annex, chapter 'General Information on use stage').

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 C4/2 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.

The CML characterisation factors version April 2015 are applied.

### 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: 1 m<sup>2</sup> floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3/2	C3/3	C4/1	D	D/1	D/2	D/3
GWP	[kg CO <sub>2</sub> -Eq.]	1.69E+1	2.21E-1	9.19E-1	0.00E+0	3.32E-1	1.23E-2	6.61E+0	3.26E-2	3.80E-1	-1.70E-1	0.00E+0	-3.11E+0	-6.19E-1
ODP	[kg CFC11-Eq.]	2.72E-8	7.41E-14	7.95E-10	0.00E+0	1.26E-8	4.13E-15	2.19E-12	1.45E-12	9.32E-13	-3.19E-12	0.00E+0	-5.80E-11	-1.53E-11
AP	[kg SO <sub>2</sub> -Eq.]	2.86E-2	9.29E-4	1.04E-3	0.00E+0	1.34E-3	5.18E-5	4.31E-3	9.34E-5	1.05E-3	-2.63E-4	0.00E+0	-4.80E-3	-2.40E-3
EP	[kg (PO <sub>4</sub> ) <sup>3-</sup> -Eq.]	4.39E-3	2.32E-4	1.76E-4	0.00E+0	3.21E-4	1.29E-5	1.08E-3	8.45E-6	1.04E-3	-2.78E-5	0.00E+0	-5.07E-4	-2.51E-4
POCP	[kg ethene-Eq.]	4.36E-3	-3.79E-4	1.26E-4	6.29E-5	1.62E-4	-2.11E-5	2.75E-4	5.96E-6	1.20E-4	-2.51E-5	0.00E+0	-4.58E-4	-3.08E-4
ADPE	[kg Sb-Eq.]	1.09E-5	1.78E-8	3.31E-7	0.00E+0	1.14E-6	9.90E-10	2.27E-7	1.31E-8	7.85E-8	-3.26E-8	0.00E+0	-5.93E-7	-2.24E-7
ADPF	[MJ]	3.35E+2	3.05E+0	1.00E+1	0.00E+0	6.89E+0	1.70E-1	3.27E+0	3.49E-1	5.44E+0	-2.38E+0	0.00E+0	-4.35E+1	-8.84E+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: 1 m<sup>2</sup> floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3/2	C3/3	C4/1	D	D/1	D/2	D/3
PERE	[MJ]	3.28E+1	1.54E-1	9.87E-1	0.00E+0	9.87E-1	8.56E-3	4.43E-1	1.95E-1	4.15E-1	-4.30E-1	0.00E+0	-7.81E+0	-6.07E-1
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	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	[MJ]	3.28E+1	1.54E-1	9.87E-1	0.00E+0	9.87E-1	8.56E-3	4.43E-1	1.95E-1	4.15E-1	-4.30E-1	0.00E+0	-7.81E+0	-6.07E-1
PENRE	[MJ]	2.65E+2	3.06E+0	1.05E+1	0.00E+0	8.05E+0	1.71E-1	8.91E+1	8.61E+1	5.66E+0	-2.87E+0	0.00E+0	-5.24E+1	-8.89E+1
PENRM	[MJ]	8.55E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-8.55E+1	-8.55E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	[MJ]	3.51E+2	3.06E+0	1.05E+1	0.00E+0	8.05E+0	1.71E-1	3.66E+0	5.73E-1	5.66E+0	-2.87E+0	0.00E+0	-5.24E+1	-8.89E+1
SM	[kg]	2.49E+0	0.00E+0	7.29E-2	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	2.86E+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	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	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.55E+1
FW	[m <sup>3</sup> ]	5.29E-2	2.84E-4	2.79E-3	0.00E+0	4.25E-3	1.59E-5	2.25E-2	2.79E-4	1.36E-5	-6.14E-4	0.00E+0	-1.12E-2	-7.98E-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 m<sup>2</sup> floorcovering

Parameter	Unit	A1-A3	A4	A5	B1	B2	C2	C3/2	C3/3	C4/1	D	D/1	D/2	D/3
HWD	[kg]	2.48E-5	1.61E-7	7.30E-7	0.00E+0	1.13E-9	8.96E-9	1.97E-8	2.32E-10	2.19E-8	-6.95E-10	0.00E+0	-1.27E-8	-4.08E-9
NHWD	[kg]	3.52E-1	2.34E-4	5.31E-2	0.00E+0	8.17E-3	1.30E-5	1.27E+0	3.77E-4	5.29E+0	-1.02E-3	0.00E+0	-1.85E-2	-1.41E-1
RWD	[kg]	6.32E-3	4.18E-6	1.93E-4	0.00E+0	3.81E-4	2.33E-7	1.55E-4	8.91E-5	8.57E-5	-1.96E-4	0.00E+0	-3.57E-3	-2.00E-4
CRU	[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	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	1.62E-2	0.00E+0	4.74E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.86E+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	0.00E+0	2.44E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	[MJ]	0.00E+0	0.00E+0	5.62E-1	0.00E+0	0.00E+0	0.00E+0	1.02E+1	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	1.33E+0	0.00E+0	0.00E+0	0.00E+0	2.44E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

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

### Institut Bauen und Umwelt

Institut Bauen und Umwelt e.V., Berlin(pub.):  
Generation of Environmental Product Declarations  
(EPDs);  
[www.ibu-epd.de](http://www.ibu-epd.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, V1.5 August 2016  
[www.bau-umwelt.de](http://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,  
V1.4, September 2016  
[www.bau-umwelt.de](http://www.bau-umwelt.de)

### EN 1307

DIN EN 1307: 2014+A1:2016: Textile floor coverings -  
Classification

### EN 14041

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

### 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

### ISO 15686

ISO 15686: Buildings and constructed assets -  
Service life planning  
ISO 15686-1: 2011-05: Part 1: General principles and  
framework  
ISO 15686-2: 2012-05: Part 2: Service life prediction  
procedures  
ISO 15686-7: 2006-03: Part 7: Performance evaluation  
for feedback of service life data from practice  
ISO 15686-8: 2008-06: Part 8: Reference service life  
and service-life estimation

### VDZ e.V.

Umweltdaten der deutschen Zementindustrie 2015

### CPR

Construction Products Regulation, Regulation (EU) No  
305/2011 of the European Parliament and of the  
Council of 9 March 2011

### PRODIS

Product Information System (PRODIS) of the  
European Carpet Industry, Gemeinschaft  
umweltfreundlicher Teppichboden e.V (GUT) and  
European Carpet and Rug Association  
(ECRA), <http://www.pro-dis.info>

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