Report 73241
Test Report

Akkreditierung Austria A 0012 ISO/IEC 17025

Applicant

EGETAEPPER A/S
Industrivej Nord 25
7400 Herning
DÄNEMARK

Reference

Mrs. Lenette Ormstrup

Application

Determination according to the classification criteria of EN 15114 as well as castor chair suitability, suitability for using on stairs, resistance to fraying and electrical resistances.

Test Material

"Una Micro Ecotrust 350"

Material used in testing was anonymized for laboratory purposes. A detailed sample list is contained in the report.

Issuing and Signatures

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Authorised for Institute
Ing. Hannes Vittek

i.V. Zambach

Contents

1 Order

1.1 Chronology

Date	*Received*	*Order*
2014-03-03	2014-03-03	Determination according to the classification criteria of EN 15114 as well as castor chair suitability, suitability for using on stairs, resistance to fraying and electrical resistances.

1.2 Samples

No.	*Received*	*Sample Identification*
1	2014-03-03 (1)	"Una Micro Ecotrust 350"

(1) Samples provided by the customer. (2) Sample drawn by ÖTI.

2 Findings / Tests performed

2.1 Description of specimen

Description of specimen according to ISO 2424

Test results

Tested sample: 1

Dimensions:	tiles
Manufacturing procedure:	woven (without pile)
Structure of face side:	flat
Coloration of face side:	multicoloured unpatterned
Type of backing:	nonwoven backing
Type of fibres at face side *):	100% Polyamide (according to the specification by the applicant)

*) According to the current version of the relevant European Directives, fibre materials with a mass percentage of < 2 % are not specified

The submitted specimen is a textile floor covering without pile according to EN 15114.

2.2 Determination of mass per unit area

Test conditions

According ISO 8543 accr.)
Test atmosphere: 20° C / 65 % rel. humidity
Number of specimens: 4

Test results

Tested sample: 1

	Mass per unit area
Mean value	**2429 g/m²**
Coefficient of variation	0.3 %
Confidence interval (P = 95 %) absolute width	± 12 g/m²

2.3 Determination of thickness

Test conditions

Testing according ISO 1765 accr.)
Test atmosphere: 20° C / 65 % rel. humidity
Number of specimens: 4

Test results

Tested sample: 1

	total thickness
Mean value	**4.9 mm**
Coeffizient of variation	0.0 %
Coeffizient interval (P=95 %) absolute width	± 0 mm

2.4 Determination of hairiness (pilling)

Test conditions

Testing according EN 1963, test D accr.)
Duration: 200 double passages

Test results

Tested sample: 1

	Assessment of appearance after 200 double passages according Photo standard	
Samples	longitudinal direction	cross direction
Total Median	4.5	4.5
Worst Result	4.5	

Evaluation

The specimen fulfills the requirements of EN 1470.

2.5 Determination of the basic requirement of carpets without pile

Test conditions

According to EN 15114[accr.)]

Test results

Tested sample: 1

	Basic requirements	Test results
Colour fastness to [a)]		
◆ Light	≥ 5 (pastel shade [b)] ≥ 4)	Conformity to be declared by the manufacturer for each colour
◆ Rubbing		
- dry	≥ 3-4	
- wet	≥ 3	
◆ Water – change in colour		
- plain carpets	≥ 3-4	
- other carpets	≥ 4	
◆ Water – staining [c)]		
- - all carpets	≥ 2-3	
Hairiness/ Pilling[e)]	≥ 2.5	4.5
Colour change [d)]		
◆ Due to spilled water	≥ 4	Conformity to be declared by the manufacturer for each production run
◆ Due to soiling subsequent to spilled water	≥ 3	
Dimensional change[f)]	Shrinkage (both directions): ≤ 1,2% Expension (both directions): ≤ 0,5%	Length: - 0.1% Cross: + 0.1%

a) Conformity to be declared by the manufacturer for each colour
b) Pastel shade: colour corresponding to a standard depht ≤ 1/12 (in accordance with EN ISO 105-A01)
c) On multi firbe: worst result
d) Conformity to be declared by the manufacturer
e) Worst result (of longitudinal or cross direction)
f) Not valid for tiles (see Annex A), not valid for permanently glued floor coverings.

Judgement

The tested material fulfills the basic requirements of carpets without pile according to EN 15114:2008, point 4.

2.6 Determination of changes in appearance – Drum Test

Test conditions

According to EN 1307 and ISO/TR 10 361 accr.)
Assessment according EN 1471
Number of drum revolutions: 5 000 and 22 000
Number of specimens: 1

Test results

Tested sample: 1

	5 000 revolutions	22 000 revolutions
Index of appearance change (median)	4.5	4.5
Index of colour change (median)	structure	structure
Main reasons for change	5	4-5
Index after colour correction (median)	**4.5**	**4.5**
Index after colour correction (mean)	**4.7**	**4.4**
Damages by the treatment	no damages	

Assessment indices: Index 1 – high change, Index 5 – no change

2.7 Determination of the mass loss of textile floor coverings using the Lisson Tretrad machine

Test conditions

According to EN 1963, test A accr.)
Soles: Vulcanised SBR-rubbers with a wave profile
Number of treads: 1650
Adjustment of wheel height: - 5 mm
Number of specimens: 4

Test results

Tested sample: 1

	Mass loss per unit area [m_V]	Relative mass loss [m_{rV}]
Mean value	**no mass loss**	
Coefficient of variation		
Confidence interval (P = 95 %) absolute width		
Tretradindex:	--	

Note:
The primary function of the test with the "Lisson-Tretrad-Machine" is to obtain from textile floor coverings a criteria for the wear performance in practical use. The used "Lisson-Tretrad" with four feet – which are covered with changeable rubber soles – runs on a straight line forwards and backwards, with a slip of 20 % and a surface pressure of 150 N, on the surface of the test specimen (which is lying on a test table). After a defined count of reciprocating motion the mass loss will be ascertained.

2.8 Determination of general structural integrity

Test conditions

Testing according: EN 985, test C accr.)
Test apparatus: castor chair test equipment from Feingerätebau Baumberg
Typ of castors: single wheel swivel castor, type H

Test results

Tested sample: 1

Duration	Damages by the treatment
10 000 cycles	no damage
25 000 cycles	no damage

2.9 Classification of carpets without pile

Test conditions

According to EN 15114 accr.)

Test results

Tested sample: 1

Material of the use surface (by the applicant)			100% Polyamide
Specification of the change in appearance			
Drum test (Vettermann)	◆ Short term	[5.000 turns]	4.5
	◆ Long term	[22.000 turns]	4.5
Specification of wear behaviour			
Lisson-Tretrad	◆ Mass loss m_V (g/m²)		no mass loss
Specification of general structural integrity			
Damages by the treatment	◆ Short term	[10.000 turns]	no damages by the treatment
	◆ Long term	[25.000 turns]	no damages by the treatment

Classification

Classification of change in appearance	class 33
Classification of wear behaviour	class 33
Classification of general structural integrity	class 33

Overall use class	**class 33**
Luxury rating class	**LC1** *)

*): Carpets without pile are classified in luxury rating class LC1 according to EN 15114 point 6.

Explanations:
Textile floor coverings are classified to their suitability in different use classes. There are three essential characteristics for the classification: change in appearance, wear behaviour and general structural integrity. These three characteristics serve the description of the use behaviour in dependence to the intensity of use. **The use class assigned to the carpet is the lowest one that was reached after the testing.** The different use classes are described as followed:

Domestic		Commercial	
Class	**Use intensity**	**Class**	**Use intensity**
21	moderate / light	- - -	- - -
22	general / medium	- - -	- - -
22+	general	31	light
23	heavy	32	general
- - -	- - -	33	heavy

The use- and comfort-classes are corresponding to the following till now common judgements for the wear- and comfort behaviour.

Level of use classification		"use class"
EN 15114	**EN 1307:1997**	
21	1	low
22	2	normal
22+ / 31		
23 / 32	3	heavy
33	4	extreme

Luxury rating class	"luxury value"
LC 1	plain
LC 2	good
LC 3	high
LC 4	luxurious
LC 5	prestige

2.10 Determination of total mass of individual tile

Test conditions

According ISO 8543 accr.)
Test atmosphere: 20° C / 65 % rel. humidity
Number of samples: 4

Test results

Tested sample: 1

	total mass of individual tile
Mean value	**0.560 kg**
Coefficient of variation	0.0 %
Confidence interval (P = 95 %) absolute width	± 0 kg

2.11 Determination of the side length, squareness and straightness of tiles

Test condition

According to EN 994 accr.)
Number of tested specimens: 5
Nominal dimension: Length: 480 mm; Width: 480 mm

Test results

Tested sample: 1

Determination of dimensions		Length direction	Cross direction
mean length	[mm]	480.3	480.2
min. average length	[mm]	480.2	480.1
max. average length	[mm]	480.3	480.3
difference between the smallest and the largest average length	[mm]	0.1	0.2
max. deviation from mean length	[%]	< 0.1	< 0.1
max. deviation from nominal dimension	[%]	0.1	0.1

Squareness and straightness		
max. deviation	[mm]	< 0.20
max. deviation	[%]	< 0.04

2.12 Determination of dimensional changes and distortion out of plane

Test conditions

According to EN 986 accr.)

Test results

Tested sample: 1

		Dimensional change [%]	
		length	cross
1. Treatment 2 hours storage (drying) at 60 °C	1. Measurement	± 0.0	± 0.0
	2. Measurement	- 0.1	± 0.0
	3. Measurement	- 0.1	± 0.0
	Mean value	**- 0.1**	**± 0.0**
2. Treatment 2 hours storage in water at 20 °C	1. Measurement	± 0.0	+ 0.1
	2. Measurement	± 0.0	+ 0.1
	3. Measurement	± 0.0	+ 0.1
	Mean value	**± 0.0**	**+ 0.1**
3. Treatment 24 hours storage (drying) at 60 °C	1. Measurement	- 0.2	- 0.0
	2. Measurement	- 0.1	- 0.0
	3. Measurement	- 0.1	± 0.0
	Mean value	**- 0.1**	**± 0.0**
4. Treatment 48 hours storage at standard atmosphere	1. Measurement	- 0.1	± 0.0
	2. Measurement	- 0.1	± 0.0
	3. Measurement	- 0.1	± 0.0
	Mean value	**- 0.1**	**± 0.0**

maximum distortion out of plane [mm] after the treatment (step 4):			
specimen 1	specimen 2	specimen 3	**Mean value**
± 0.0	± 0.0	± 0.0	**± 0.0**

Note:
A plus (+) is used to indicate an increase and a minus (-) is used to indicate shrinkage in dimensions.

2.13 Determination of the resistance to fraying

Test conditions

Testing according to EN 1814:2005 accr.)
Number of test samples: 4
Kind of test sample: tiles

Test results

Tested sample: 1

Damages on cut edge after treatment: none

Judgement

The tested specimen can be classified as **resistant to fraying.**

2.14 Classification of carpets without pile, additional requirements tiles

Test conditions

According to EN 15114:2008 accr.), annex A

Test results

Tested sample: 1

	Requirements			Test results
	Non adhered tile	Adhered tile		
	Loose laid	*Removable*	*Permanent*	
Total mass of individual tile, ISO 8543	≥ 0.875 kg	≥ 0.625 kg	- - -	**0.560 kg**
Total mass per unit area, ISO 8543	≥ 3.5 kg/m²	≥ 2.5 kg/m²	- - -	**2.4 kg/m²**
Dimensions, EN 994	± 0.30 % on nominal dimensions			**max. deviation on nominal dimensions longitudinal 0.1 % cross 0.1 %**
	± 0.20 % in the same batch			**max. deviation to the mean length longitudinal < 0.1 % cross < 0.1 %**
Squareness and straightness of edges, EN 994	± 0.15 % in both directions			**max. deviation < 0.04 %**
Dimension stability, EN 986	shrinkage in both directions ≤ 0.2 %		≤ 0.4 %	**max. dimensional change longitudinal – 0.1 % cross + 0.1 %**
	extension in both directions ≤ 0.2 %		≤ 0.2 %	
Curling / doming, EN 986	max. deviation of any part of the sample from its plane ≤ 2 mm		- - -	**max. curling / max. doming 0 mm**
Damage at cut edge (fraying), EN 1814	no damage			**no damage**

Judgement

The submitted sample fulfils the additional requirements for permanent adhered carpet tiles according EN 15114:2008, Annex A (normative).

2.15 Determination of the castor chair suitability of textile floor coverings

Test conditions

According to EN 985, Method A accr.)
Test apparatus: castor chair test equipment, Typ: Feingerätebau Baumberg
Castors: according EN 985

Test results

Tested sample: 1

Test duration	change of attribute	Index of colour change *)	Index of appear-ance change *)
5 000 revolutions	colour	4	4.0
25 000 revolutions	colour	3	3.0
Castor chair index (r)	**3.8**		

*) Note: Index 1 - high change / Index 5 - no change

Damages by the treatment: none

Classification

According the specifications of **EN 15114** the specimen can be classified as:

"suitable for intensive use"

2.16 Classification of the suitability for use on stairs

Test conditions

According to EN 1963; Test method B: nosing test accr.)

Test results

Tested sample: 1

Appearance change*) in the edge area	**low appearance change**

*)complete mean

Classification

According to EN 15114 the specimen can be classified as suitable

"for permanent use"

Note: A workmanlike construction of the stair nose with a rounding radius of at least 10 mm is presupposed to the judgement.

2.17 Assessment of static electrical propensity – walking test

Test conditions

According to ISO 6356 accr.)
Testing atmosphere: 23 ± 1 °C / 25 ± 3 % rel. humidity
Base plate: Isolating rubber mat on metal plate
Sole-material: XS-664P Neolite
Pretreatment: none

Test results

Tested sample: 1

Supplied condition			
Measurement 1	Measurement 2	Measurement 3	**Mean value**
- 0.6 kV	- 0.7 kV	- 0.7 kV	**- 0.7 kV**

Judgement

The tested sample in supplied condition can be classified as **antistatic** according EN 14041:2004.

2.18 Determination of electrical resistances

Test conditions

According to ISO 10965 accr.)
Test atmosphere: 23°C ± 1°C / 25% ± 3% rel. humidity
Circuit voltage: 500 V

Test results

Tested sample: 1

Sample	Measurement	Vertical resistance
1	1	1.0×10^{11} Ω
	2	1.5×10^{11} Ω
2	1	1.5×10^{11} Ω
	2	1.5×10^{11} Ω
3	1	1.0×10^{11} Ω
	2	8.0×10^{10} Ω
Geometric mean value		**1.2×10^{11} Ω**

2.19 Summary of results

Article	"Una Micro Ecotrust 350"	
Constructive characteristics		
material of use surface(by the applicant)	100 % Polyamide	
Total mass per unit area	2429 g/m²	
Total thickness	4.9 mm	
Basic requirements	**fulfilled**	
Hairiness "pilling" (EN 1963 method D)	4.5	
Dimensions stability (ISO 2551) - length direction	- 0.1 %	
- cross direction	+ 0.1 %	
Tests for determination of use classification level		
Change in appearance – "Vettermann" drum test (ISO 10361)	**Median**	Mean value
Grade after colour correction – 5000 cycles	**4.5**	4.7
Grade after colour correction – 22000 cycles	**4.5**	4.4
Wear behaviour (EN 1963 method A)		
Mass loss per unit area [m_V]	no mass loss	
General structural integrity (EN 985 method C)		
Damages by treatment - 10000 cycles	no damage	
- 25000 cycles	no damage	
Classification according EN 15114		
Basic requirements	fulfilled	
Classification of change in appearance	Class 33	
Classification for wear	Class 33	
Classification for general structural integrity	Class 33	
Level of use classification	**Class 33**	
Use intensity	commercial use 33 "heavy"	
Luxury rating classification	**LC1**	
Luxury value	LC1 "plain"	
Additional Requirements for carpet tiles	**fulfilled for permanent adhered tiles**	
Total mass of individual tile (ISO 8543)	0.560 kg	
Total mass per unit area (ISO 8543)	2.4 kg/m²	
Dimensions (EN 994) - max. deviation to nominal	0.1 %	
- max. deviation in the same batch	< 0.1 %	
Squareness / straightness of edges (EN 994) - max. deviation to nominal	< 0.04 %	
Dimension stability (ISO 986) - length direction	- 0.1 %	
- cross direction	+ 0.1 %	
Curling/doming (ISO 986) [6]	0 mm	
Damage at cut edge (EN 1814)	no damage (resistant to fraying)	

Additional caracteristics	
Castor chair suitability (EN 985)	suitable for intensive use
Antistatic (ISO 6356)	
Walking test (supplied condition)	- 0.7 kV
Electrical propensity (ISO 10965)	
Vertical resistance	1.2×10^{11} Ω
Suitability for use on stairs (EN 1963 method D)	"suitable for permanent use"

3 Remarks

Validity

There are no regulations concerning duration of validity in the individual test standards. As the results of the examinations refer only to the submitted and examined samples, the report is valid for these for an unlimited period. A period of validity specified as part of an expert evaluation is in the discretion of the consultant or the ÖTI.

The applicability of results and expert evaluations for materials not tested is in the responsibility of the applicant. Whereby an apportionment of results as well as any specified period of validity can only be done for identically constructed products and only as long as the product produced unchanged.

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Sample Material

Results of performed tests only refer to the sample material provided.

Without explicit written other agreement testing is destructive and the sample material is transferred to the property of ÖTI, which is entitled to freely decide on storage and disposal.

Issuance

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All tests and services are performed under a quality management system according to EN ISO/IEC 17025 respectively EN ISO/IEC 17065.

The ÖTI is accredited as Testing Laboratory and Certification Body for products. It also is a Notified Body for several directives with the registration number 0534 (see http://ec.europa.eu/enterprise/newapproach/nando/). Accreditation as Testing Laboratory was provided by Akkreditierung Austria (Federal Ministry of Economy, Family and Youth). The scope of accreditation is listed on www.bmwfj.gv.at/akkreditierung.

In this report test conditions of individual accredited test procedures are marked with *accr.)*

According to the decree on the use of the accreditation mark ("AkkZV") the accreditation mark is only to be used by the accredited Conformity Assessment Body.

Application of the registration number of the Notified Body: As to personal protective equipment (PPE) the requirements of PSA-SV § 10, BGBl. Nr. 596/1994 as amended and article 13 of the Directive 89/686/EEC have to be kept. With construction products the application is only permitted within the declaration of performance for CE-marking.

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