



Report 73530 Test Report



Applicant

EGETAEPER 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, vertical resistance and electrical propensity.

Test Material

“Epoca Knit Ecotrust 350“

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

Issuing and Signatures

Number of pages contained: 15

Original Issue / Vienna 2014-04-14 / da/KK/SW 120

Authorised for Institute
Ing. Hannes Vittek



Contents

1	Order.....	2
1.1	Chronology.....	2
1.2	Samples.....	2
2	Findings / Tests performed.....	3
2.1	Determination of mass per unit area.....	3
2.2	Determination of thickness.....	3
2.3	Determination of number of tufts or loops.....	3
2.4	Determination of hairiness (pilling).....	4
2.5	Determination of dimensional changes and distortion out of plane.....	5
2.6	Determination of the basic requirement of carpets without pile.....	6
2.7	Determination of changes in appearance – Drum Test.....	7
2.8	Determination of the mass loss of textile floor coverings using the Lisson Tretrad machine.....	7
2.9	Determination of general structural integrity.....	8
2.10	Classification of carpets without pile.....	8
2.11	Determination of total mass of individual tile.....	9
2.12	Determination of the side length, squareness and straightness of tiles.....	10
2.13	Determination of the resistance to fraying.....	10
2.14	Classification of carpets without pile, additional requirements tiles.....	11
2.15	Determination of the castor chair suitability of textile floor coverings.....	12
2.16	Classification of the suitability for use on stairs.....	12
2.17	Determination of electrical resistances.....	13
2.18	Assessment of static electrical propensity – walking test.....	13
3	Summary of results.....	14
4	Remarks.....	15

1 Order

1.1 Chronology

<i>Date</i>	<i>Received</i>	<i>Order</i>
2013-11-25	2013-11-25	Determination according to the classification criteria of EN 15114 as well as castor chair suitability, suitability for using on stairs, resistance to fraying, vertical resistance and electrical propensity.

1.2 Samples

<i>No.</i>	<i>Received</i>	<i>Sample Identification</i>
1	2013-11-21 (1)	"Epoca Knit Ecotrust 350" (tested with 73157 dated 2014-01-14)
1	2013-04-01 (1)	"Epoca Knit Ecotrust 350"

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



2 Findings / Tests performed

2.1 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	2649 g/m ²
Coefficient of variation	3.6 %
Confidence interval (P = 95 %) absolute width	± 153 g/m ²

2.2 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	5.3 mm
Coefficient of variation	0.9 %
Coefficient interval (P=95 %) absolute width	± 0.1 mm

2.3 Determination of number of tufts or loops

Test conditions

According to ISO 1763 accr.

Test results

Tested sample: 1

Number of tufts or loops / 10 cm	in length direction:	27.7
	in cross direction:	40.6
Number of tufts or loops per dm ² :		1125
Number of tufts or loops per m ² :		112500



2.4 Determination of hairiness (pilling)

Test conditions

Testing according EN 1963, test D accr.)

Duration: 200 double passages

Test results

Tested sample: 1

Samples	Assessment of appearance after 200 double passages according photo standard	
	longitudinal direction	cross direction
Total Median	4	4
Worst Result	4	

Evaluation:

The specimen fulfills the requirements of EN 1470.



2.5 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	- 0.1	- 0.1
	2. Measurement	- 0.1	- 0.1
	3. Measurement	- 0.1	- 0.1
	Mean value	- 0.1	- 0.1
2. Treatment 2 hours storage in water at 20 °C	1. Measurement	+ 0.1	± 0.0
	2. Measurement	+ 0.1	± 0.0
	3. Measurement	+ 0.1	± 0.0
	Mean value	+ 0.1	± 0.0
3. Treatment 24 hours storage (drying) at 60 °C	1. Measurement	- 0.1	- 0.3
	2. Measurement	± 0.0	- 0.1
	3. Measurement	- 0.2	- 0.2
	Mean value	- 0.1	- 0.2
4. Treatment 48 hours storage at standard atmosphere	1. Measurement	- 0.2	- 0.2
	2. Measurement	± 0.0	- 0.1
	3. Measurement	- 0.2	- 0.2
	Mean value	- 0.1	- 0.2

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

Note:

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



2.6 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)}	≥ 2-3	4
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% Expansion (both directions): ≤ 0.5%	Length: + 0.1% Cross: - 0.2 %

a) Conformity to be declared by the manufacturer for each colour

b) Pastel shade: colour corresponding to a standard depth ≤ 1/12 (in accordance with EN ISO 105-A01)

c) On multi fibre: 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.



2.7 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)	4.0	3.5
Index of colour change (median)	3-4	3
Main reasons for change	colour	colour
Index after colour correction (median)	4.0	3.5
Index after colour correction (mean)	3.9	3.4
Damages by the treatment	none	

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

2.8 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: 2200
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.



2.9 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	none
25 000 cycles	none

2.10 Classification of carpets without pile

Test conditions

According to EN 15114_{accr.}:2008

Test results

Tested sample: 1

Material of the use surface (by the applicant)	Polyamide
Specification of the change in appearance	
Drum test ♦ Short term [5.000 turns]	4.0
(Vettermann) ♦ Long term [22.000 turns]	3.5
Specification of wear behaviour	
Lisson-Tretrad ♦ Mass loss m_v (g/m ²)	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

2.11 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	0.640 kg
Coefficient of variation	0.0 %
Confidence interval (P = 95 %) absolute width	± 0.000 kg



2.12 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; Width: 480

Test results

Tested sample: 1

Determination of dimensions		Length direction	Cross direction
mean length	[mm]	480.4	480.2
min. average length	[mm]	480.4	480.2
max. average length	[mm]	480.5	480.3
difference between the smallest and the largest average length	[mm]	0.1	0.1
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

2.13 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

	Non adhered tile	Requirements Adhered tile		Test results
	<i>Loose laid</i>	<i>Removable</i>	<i>Permanent</i>	
Total mass of individual tile, ISO 8543	≥ 0.875 kg	≥ 0.625 kg	---	0.640 kg
Total mass per unit area, ISO 8543	≥ 3.5 kg/m ²	≥ 2.5 kg/m ²	---	2.6 kg/m ²
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 - 0.2 %
	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 2 mm
Damage at cut edge (fraying), EN 1814	no damage			no damage

Judgement

The submitted sample fulfils the additional requirements for removable adhered and 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 appearance change *)
5 000 revolutions	colour	3	3.0
25 000 revolutions	colour	2-3	2.5
Castor chair index (r)	2.9		

*) 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 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	3.0 x 10 ¹¹ Ω
	2	5.0 x 10 ¹¹ Ω
2	1	3.5 x 10 ¹¹ Ω
	2	3.0 x 10 ¹¹ Ω
3	1	4.0 x 10 ¹¹ Ω
	2	3.0 x 10 ¹¹ Ω
Geometric mean value		3.5 x 10 ¹¹ Ω

2.18 Assessment of static electrical propensity – walking test

Test conditions

According to ISO 6356 accr.)

Testing atmosphere: 23 °C / 25 % 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
- 1.6 kV	- 2.1 kV	- 2.4 kV	- 2.0 kV

Judgement

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



3 Summary of results

Article	"Epoca Knit Ecotrust 350"	
Constructive characteristics material of use surface (by the applicant) Total mass per unit area Total thickness	100 % Polyamide 2649 g/m ² 5.3 mm	
Basic requirements Hairiness "pilling" (EN 1963 method D) Dimensions stability (ISO 2551)	fulfilled 4 - length direction - cross direction - 0.2 + 0.1	
Tests for determination of use classification level Change in appearance – "Vettermann" drum test (ISO 10361) Grade after colour correction – 5000 cycles Grade after colour correction – 22000 cycles Wear behaviour (EN 1963 method A) Mass loss per unit area [mv] General structural integrity (EN 985 method C) Damages by treatment	Median 4.0 3.5	Mean value 3.9 3.4 no mass loss none none
Classification according EN 15114 Basic requirements Classification of change in appearance Classification for wear Classification for general structural integrity Level of use classification Luxury rating classification	fulfilled Class 33 Class 33 Class 33 Class 33 LC1	
Additional requirements for tiles Total mass of individual tile (ISO 8543) Total mass per unit area (ISO 8543) Dimensions (EN 994)	fulfilled ¹⁾ 0.640 kg 2.6 kg/m ² - max. deviation to nominal - max. deviation in the same batch 0.1 % < 0.1 %	
Squareness / straightness of edges (EN 994) Dimension stability (ISO 986) Curling/oming (ISO 986) ⁵⁾ Resistance to fraying (EN 1814)	- deviation to nominal - skrinkage - extension < 0.04 % ± 0.1 % -0.2 % 2 mm resistant	
Additional characteristics Castor chair suitability (EN 985) Suitability for use on stairs (EN 1963 method D) Electrical resistances (ISO 10965) Electrical propensity – walking test	suitable for intensive use suitable for permanent use 3.5 x 10 ¹¹ Ω - 2.0 kV	

¹⁾Fulfills the requirements for "removable adhered tiles" and "permanent adhered tiles".



4 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.

Possible national or international restrictions concerning the terms of usability of test and classification reports have to be considered; this is not the responsibility of the test laboratory.

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

The valid first issue is done in paper and has single-handed signatures. For reference purposes and filing an unsigned electronic duplicate can be delivered in pdf format. Duplicates and translations will be marked accordingly on the cover sheet.

Quality management, Accreditation and Notification

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.bmwfi.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.

.Copyright und Usage Notes

It is pointed out, that any alterations, amendments or falsifications of reports not authorized by the issuer of the report will be prosecuted as civil and criminal offences; this especially to the appropriate requirements of ABGB, UrhG, UWG and criminal law and their respective international equivalents.

Reports are protected under international copyright laws. Written consent of the ÖTI is required for publications (also in excerpt) and reference to tests for public relation purposes. Reports may only be reproduced in full length.