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**Date**  
August 20, 2014

**Project number**  
89204535

**Report number**  
89204535.04en

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**Article**  
Magnetic

**Appendix**  
- none-

## Report

Project number : 89204535  
Report number : 89204535.04en

### **Received:**

A sample PVC floor covering, marked as: **Magnetic**; TÜV reference: MT13-38346.02.  
The samples have been received on the 31<sup>st</sup> of October 2013. The samples are selected by the applicant. The test house has had no influence on the sampling procedure.

### **Product information:**

Product : PVC Floorcovering  
Name : Magnetic\*  
Pattern no. : MAG 15-4 \*  
Dimensions : Planks, 9 "(228 mm) x 48" (1219 mm) x 3.0 mm\*  
Wear layer : 0.70 mm\*  
Material : PVC, heterogeneous\*  
Type : I, wear-layer binder content  $\geq 80$  %  
Finish : PU finish\*  
Surface layer : Transparent  
Surface structure : Wood structure, embossed

Product : Underlay  
Massatotaal, g/m<sup>2</sup> : 2,000\*  
Dikte totaal, mm : 0,5\*

\* manufacturer's declaration

### **Order:**

To determine intensity of use according ISO 10582:2010 and to the following additional characteristics:

- Static electric charging according to EN 1815,
- Electrical resistance, according to EN 1081,
- Thermal resistance, according to ISO 8302,
- Slip resistance, according to EN 13893,
- Determination of resistance to staining, ISO 26987, and
- Measurement of impact sound insulation, EN-ISO 10140 1-5 and EN-ISO 717-2.

### **Results:**

See page two up to and including seven.

TRN applies General Terms & Conditions which are filed at the office of the Clerk for civil affairs at the Court in Zutphen (the Netherlands) under number 35/2010, dated November 17th 2010.

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## BASIC REQUIREMENTS

### *Determination of the side length*

TÜV Method\*

\* The results of the determination of the side length isn't included in the assessment of the basic requirement.

Number of measurements	:	5
Date of testing	:	13 December, 2013
Atmosphere for conditioning and testing	:	23 ± 2 °C and 50 ± 5 % R.H.

Overall side length, average	mm	:	1218.00 x 228.43
Minimum measured side length	mm	:	1217.50 x 228.26
Maximum measured side length	mm	:	1218.50 x 228.52

### *Determination of the overall thickness*

Method ISO 24346

Number of measurements	:	20	
Overall thickness, average	mm	:	3.084
Minimum measured thickness	mm	:	3.027
Maximum measured thickness	mm	:	3.160

### *Determination of mass per unit area <sup>a</sup>*

Method ISO 23997

Number of measurements	:	5	
Total mass per unit area, average	g/m <sup>2</sup>	:	5720

<sup>a</sup>no given value, requirement average +13% or -10%.

### *Dimensional stability and curling*

Method ISO 23999

Number of test samples	:	3	
- in longitudinal direction	%	:	0.01
- in cross direction	%	:	-0.01
Curling, mean value	mm	:	0.0

### *Determination of flexibility*

Method ISO 24344:2008, method A

Number of tests	:	3 lengthwise and 3 in width directions	
Change/cracking, mandrel	20 mm	:	None

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**BASIC REQUIREMENTS – follow-up**

**Residual indentation after static loading**  
 Method ISO 24343-1

Mean value for residual indentation after static loading, mm : 0.43  
 Mean value for the depth of indentation after 150 min. mm : 0.06

**Determination of the effect of a castor chair**  
 Method ISO 4918

Type of adhesive used in the test : None, a double sided adhesive tape.  
 Type wheels : W soft thread  
 Change in 25.000 rotations : No change in appearance, no delamination.

**Colour fastness to light**  
 Method EN ISO 105-B02:1994 + A1:1998

Light fastness : 7  
 Scale: 1- severe change, 8- no change

**Assessment:** the tested PVC floor covering **meets** all the tested basic requirements of ISO 10582:2010

**CLASSIFICATION REQUIREMENTS**

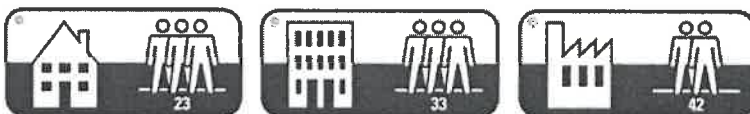
**Construction data**

Overall thickness, ISO 24346 : 3.08 mm  
 Nominal thickness of the wear layer : 0.70 mm  
 Thickness of the wear layer, ISO 24340 : 0.651 mm

Meets the requirements as stated in ISO 10582:2010 for following classification:

Domestic: Class 23, heavy  
 Commercial: Class 33, heavy  
 Light industries: Class 42, general

Symbols according to EN-ISO 10874:2012 based on the tested properties and results<sup>b</sup> :



<sup>b</sup>The seam strength according to EN 684 has not been tested because this is not applicable.

## ADDITIONAL PROPERTIES

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### *Electrical resistance*

Method EN 1081

Test conditions: 23±2 °C and 25%±5 R.H.

Applied voltage: 500V dc.

Date of testing: 31<sup>st</sup> of January 2014

	Method A, vertical resistance (in Ohm)	Method C, horizontal resistance (in Ohm)
1	≥ 1x10 <sup>16*</sup>	4.5x10 <sup>11</sup>
2	1.6x10 <sup>12</sup>	3.6x10 <sup>11</sup>
3	2.0x10 <sup>12</sup>	3.0x10 <sup>11</sup>
4	1.7x10 <sup>12</sup>	2.9x10 <sup>11</sup>
5	1.1x10 <sup>12</sup>	3.0x10 <sup>11</sup>
6	1.9x10 <sup>12</sup>	3.5x10 <sup>11</sup>
<b>Geometric Mean</b>	<b>1.7x10<sup>12</sup></b>	<b>3.4x10<sup>11</sup></b>

*Table 1: Results, sample MT13-38346.02, Magnetic, method EN 1081.*

*\*Measurement #1 is not included in the calculation of the geometric mean, the measured value deviates to much from the other measurements. The measurement #1 is threaded like an error.*

### *Static electrical charging*

Method EN 1815 – Method A, in laboratory conditions

Test conditions: 23±2 °C and 25%±5 R.H.

Date of testing: 31<sup>st</sup> of January 2014

Operator: IPK

Sole material of the test shoes

- PVC, average value kV : -2.5

- Rubber, average value kV : -1.3

Note: Test carried out including underlay

### Individual results

	PVC sole (kV)	Rubber sole (kV)
1	-2.5	-1.3
2	-2.4	-1.3
3	-2.5	-1.3
<b>Mean</b>	<b>-2.5</b>	<b>-1.3</b>

*Table 2: Results, sample MT13-38346.02, Magnetic, method EN 1815.*

*ADDITIONAL PROPERTIES – follow-up*

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***Thermal resistance***

Method ISO 8302

Reference report : TRN Report T11.32581.01en

Thermal resistance                      m<sup>2</sup>K/W    :    0.04

***Slip resistance***

Method EN 13893

Direction		longitudinal	width
<i>Measurement 1</i>	μ	0.44	0.49
<i>Measurement 2</i>	μ	0.41	0.46
Measurement 3	μ	0.41	0.46
Measurement 4	μ	0.37	0.45
Measurement 5	μ	0.41	0.46
<b>Slip resistance average value</b> <sub>3-5</sub>	μ	<b>0.40</b>	<b>0.46</b>

***Determination of resistance to staining***

Method EN-ISO 26987

**Solvent/cleaning agent**

Synthetic detergent (dish soap UNA green):	0
5% Ammonia solution	: 0
10% Soda solution	: 0
35 % Hydrogen peroxide	: 0
Bleach	: 0
10% Oxalic acid	: 0
Thinner	: 0
Turpentine	: 0
Acetone	: 0
Ethanol	: 0
White Spirit	: 1
Glassex	: 0
Cleaning agent. PU reiniger (1/1)	: 0
Cleaning agent. PU reiniger (1/300)	: 0
White Spirit, 30 min	: 0

Scale: 0 - no change, 1-slight change, 2 - minor change, 3-change 4- severe change.

*ADDITIONAL PROPERTIES – follow-up*

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**Acoustical insulation**

Method EN-ISO 10140-1 – 5:2010, calculation according EN-ISO 717-2.

Testing location: subcontracted outside TÜV Rheinland Group.

**Reference report : TRN Report T11.32581.01**

Date of testing : 29<sup>th</sup> of June, 2011

Test conditions: 20.0 ±2°C and 50.0 ±5% R.H.

Volume of the receiving room: 58.9 m<sup>3</sup>.

Classification : Category I of ISO 10140.

Installation : Loose laid on solid concrete reference floor.

Installed by : Testing laboratory.

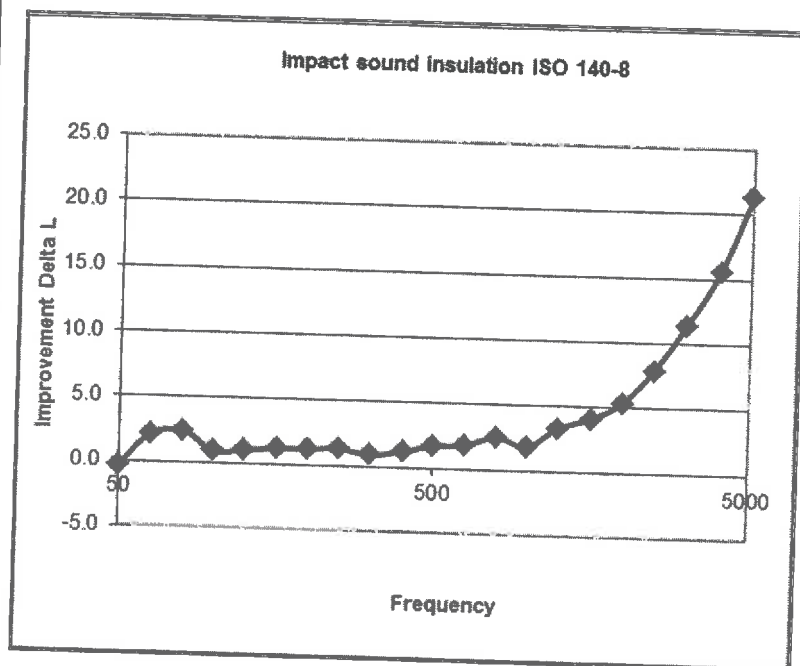
Calculation according to ISO 717-2:2013

Impact sound improvement index  $\Delta L_w$  : 6 dB

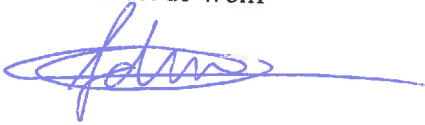
*The results are based on the tests which were performed in laboratory conditions with an artificial source of sound, standard method.*

Sound insulation according ISO 10140-3, measurements and graph:

Frequency Hz	$\Delta L$ dB
50	-0.3
63	2.1
80	2.4
100	0.9
125	1.0
160	1.2
200	1.2
250	1.3
315	0.9
400	1.2
500	1.7
630	1.8
800	2.5
1000	1.8
1250	3.3
1600	4.1
2000	5.4
2500	7.9
3150	11.4
4000	15.6
5000	21.3



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