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Report

Project number : T11-32609

Report number : T11.32609.04en

Date
09-09-2011

Received : A sample consisting of a combination: a PU floor screed on a wooden support layer marked as:

“**Senso HighDensity**”; TÜV reference: MT11-32609.01,

And a sample PU floor screed marked as:

“**Senso HighDensity**”; TÜV reference MT11-32609.02.

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Order : To determine

- intensity of use according to the TÜV guideline W6074, based on the wear resistance according to EN 660-2, thickness of the top layer and effect of a castor chair according to EN 425,

and, determination of the additional characteristics:

- Resistance to staining according to EN 423,
- Residual indentation, EN 433,
- Flexibility, EN 435- method A,
- Static electric charging according to EN 1815,
- Acoustical insulation, according to ISO 10140,
- Colour fastness to light, ISO EN 105-B02, and
- Thermal resistance, according to ISO 8302.

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Article
Senso HighDensity

Appendix
- none-

Results : See page two, up to and including six.

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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CLASSIFICATION REQUIREMENTS

Tested on sample MT11-32609.01.

Note: MT11-32609.01 is the combination of Senso HighDensity and a wooden support.

Determination of the effect of a castor chair

Method EN 425

Change in 25.000 rotations : slight change in appearance,
no delamination.

Tested on sample MT11-32609.02.

Note: MT11-32609.02 is stand-alone PU floor screed Senso HighDensity

Construction data

Overall thickness	mm	:	3 ^a
Total mass per unit area	kg/m ²	:	4.5 ^a

^a manufacturer's declaration

Wear resistance

Method EN 660-2 + A 1

Number of revolutions		:	5000
Volume loss, F _v	mm ³	:	1.2
Wearing Group		:	T

Classification

Meets the requirements as stated in the TÜV guideline W6074: "Classification of PU-screed flooring" for the following class^b:

32 commercial: general / 41 light industries: moderate

Symbols according to EN 685



^b based on the overall thickness, effect of a castor chair and the wear resistance.

ADDITIONAL PROPERTIES

Tested on sample MT11-32609.01.

Note: MT11-32609.01 is the combination of Senso HighDensity and a wooden support.

Determination of the overall thickness

Method EN 428

Number of measurements	:	20
Overall thickness, average	mm :	13.76
Minimum measured thickness	mm :	12.97
Maximum measured thickness	mm :	14.20

NOTE: This is the thickness of the combination: Senso HighDensity including the wooden support.

Determination of mass per unit area

Method EN 430

Total mass per unit area, average kg/m² : 11.0

NOTE: This is the mass per unit area of the combination: Senso HighDensity including the wooden support.

Residual indentation after static loading

Method EN 433

Mean value for residual indentation after static loading, mm : 0.03

Mean value for the depth of indentation after 150 min. mm : 0.49

Determination of resistance to staining

Method EN 423

Chemical	index
Synthetic Detergent*	: 0
Soda, 10%	: 0
Bleach	: 0
Oxalic Acid, 10%	: 1
White spirit	: 0
Cleaning spirit	: 0
Aceton	: 0
Ethanol	: 0

Index: 0-not affected, 1-very slightly, 2-slightly, 3-affected and, 4-severely affected

* PU cleaner: PU reiniger Dr. Schutz.

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ADDITIONAL PROPERTIES – follow-up

Tested on sample MT11-32609.01.

Note: MT11-32609.01 is the combination of Senso HighDensity and a wooden support.

Electrical resistance

Method EN 1081

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

Applied voltage: 500V dc.

	Method A, vertical resistance (in Ohm)	Method C, horizontal resistance (in Ohm)
1	1.6 x10 ¹²	4.0 x10 ¹¹
2	1.5 x10 ¹²	3.5 x10 ¹¹
3	2.4 x10 ¹²	2.5 x10 ¹¹
4	1.7 x10 ¹²	2.7 x10 ¹¹
5	4.0 x10 ¹²	3.2 x10 ¹¹
6	1.5 x10 ¹²	3.7 x10 ¹¹
Geometric Mean	2.0 x10¹²	3.2x10¹¹

Table 1: individual results, sample MT11.32609.01, method ISO 108.1

Static electrical charging

Method EN 1815 – Method A, in laboratory conditions

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

Sole material of the test shoes

- PVC, average value kV : +0.6
 - Rubber, average value kV : -2.0

Individual results

	PVC sole (kV)	Rubber sole (kV)
1	+1.0	-1.7
2	-0.3	-2.7
3	+0.7	-1.5
4	+0.7	-2.0
5	+1.0	-2.0
Mean	+0.6	-2.0

Table 2: individual results, sample MT11.32609.01, method EN 1815.

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ADDITIONAL PROPERTIES – follow-up

Tested on sample MT11-32609.01.

Note: MT11-32609.01 is the combination of Senso HighDensity and a wooden support.

Acoustical insulation

Method ISO 10140, calculation according ISO 717-2

Test conditions: 20.0 ±2°C and 56.0 ±5% R.H.

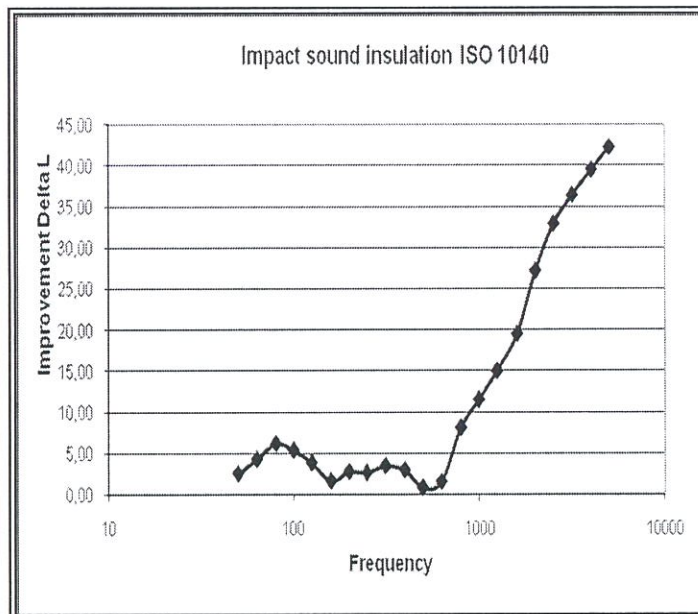
Calculation according to ISO 717-2

Impact sound improvement index* ΔL_w : 15 dB

* This improvement is achieved when using the combination: Senso HighDensity on the wooden support.

Sound insulation according ISO 10140, measurements and graph.

Frequency Hz	ΔL dB
50	2.60
63	4.30
80	6.20
100	5.40
125	3.90
160	1.70
200	2.80
250	2.70
315	3.50
400	3.00
500	0.90
630	1.60
800	8.10
1000	11.5
1250	15.0
1600	19.5
2000	27.2
2500	32.9
3150	36.4
4000	39.5
5000	42.2



ADDITIONAL PROPERTIES – follow-up

Tested on sample MT11-32609.02.

Note: MT11-32609.02 is stand-alone PU floor screed Senso HighDensity

Flexibility

Method EN 435- A

Using a 20 mm mandrel : no cracking

Determination of density

Method EN 436- A

Density kg/m³ : 1426

Colour fastness to light

Method EN ISO 105-B02

Light fastness : 7-8

Scale: 1- severe change, 8- no change

Tested on both the samples, MT11.32609.01 and MT11-32609.02.

Thermal resistance

Method ISO 8302

Thermal resistance

MT11.32609.01, combination* m²K/W : 0.16

MT11.32609.02, Senso HighDensity m²K/W : 0.01

* the combination of Senso HighDensity and a wooden support.

b.a.

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