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BARENDRECHT  
The Netherlands

## Report

Project number : 89204607  
Report number : 89204607.02br

### **Received:**

A sample of floor covering a mat, marked as: “Niru Cushion-Ease Solid FR/ESD DISS, 91x91 cm, black. ”. Received on the 24<sup>th</sup> of October 2013.  
TÜV sample reference: MT13-38576.02.

### Identification parameters according to the applicant:

Name	:	661 Cushion Ease Solid™ ESD FR
Sample dimension	:	Mats, 91x91 cm
Type of manufacturing	:	Compression moulding
Type of use surface	:	Uni
Composition/ Used material	:	100% Nitrile Fire Retardant rubber
Total mass per unit area kg/m <sup>2</sup>	:	14.5
Total thickness, mm	:	19
Colour	:	Uni, black
Roll number	:	556S0033-4
Production number	:	661S0033BL
Use of fire-retardant	:	Yes, in rubber compound

### **Sampling procedure:**

Samples have been selected and send by the applicant.  
The test house has had no influence on the sampling procedure.

### **Request:**

Classification of burning behaviour according to EN 13501-1:2007:A1:2009.

### **Test method:**

Ignitability (direct impingement of flame) : EN ISO 11925-2.  
Reaction to fire (radiant panel) : EN ISO 9239-1.

### **Results and conclusion:**

See page two and three.

### **Appendix:**

See page four up to and including eleven.

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### **Date**

November 12<sup>th</sup>, 2013

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**Phone number client**  
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### **Article**

Niru Cush-Ease Sol ESD/ FR

### **Appendix**

I : Flooring Radiant Panel Single  
Specimen Report – 8 pages

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.

## TEST RESULTS

### Ignitability test EN ISO 11925-2:2010.

This product is classified without further testing according to EN 14041:2004/AC:2005 - Table 3 – Classes of reaction to fire for resilient floor coverings, classified without further testing as E<sub>fl</sub>.

### Radiant Panel test ISO 9239-1:2010

Date of testing : November 4, 2013  
Conditioning time, climate : 3 days, 23 ± 2 °C and 50 ± 5 %  
Description of substrate : Fibre cement board, 8±2 mm ,1800±200 kg/m<sup>3</sup>  
conforming to EN 13238.  
Sampling procedure : By contractor.  
Description of cleaning used : None  
Fixing method : None

Test specimen, orientation	Flame spread (cm)	CRF (kW/m <sup>2</sup> )	Peak light attenuation (%)	Smoke production (%.min)
1	21.0	9.2	31.4	382
2	18.0	9.6	32.1	268
3	23.0	8.8	28.3	268
4	17.0	9.8	28.4	242
<b>Mean*</b>	<b>18.7</b>	<b>9.5</b>	<b>30.6</b>	<b>297</b>

\* Mean of the three lowest obtained values as there is no distinct orientation.

Remarks: No flashing. transitory- or sustained flaming.  
All tested specimen extinguished naturally.  
Small particle, some still burning, decrepitated from the specimen during the test.

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## CONCLUSION

According to EN 13501-1:2007+ A1:2009 the tested sample of the aforementioned quality **661 Cushion Ease Solid™ ESD FR** in relation to its reaction to fire behaviour is classified: **B<sub>fl</sub>**.

The additional classification in relation to smoke production is: **s1**.

The aforementioned quality meets the requirement of reaction to fire classification:  
**B<sub>fl</sub> – s1**

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The classification is valid for the following end use applications:

- End use substrates of classes A1 and A2-s1,d0 , for example fibre cement board.
- Loose laid or by any means of fixation.

### Statements:

The test results only relate to the behaviour of the test specimens of the examined product under the particular conditions of the test in laboratory conditions; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. The method might not be suitable if the product is exposed to much larger flames or heat radiant sources.

The validity of this report will expire five years after its issue or directly after alterations or modifications of the examined product (combination)(s) and/or the criteria. This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

This document does not represent type approval or certification of the product

Author:  
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Review and approval:  
Mr. J. Brinks

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*The results are based upon the samples received and have not to be representative for the total production. Besides TÜV Rheinland Nederland B.V. had no influence on the sampling.*

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## APPENDIX I: Flooring Radiant Panel Single Specimen Report

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November 12<sup>th</sup>, 2013

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89204607.02br

### Flooring Radiant Panel Single Specimen Report

Article  
Niru Cush-Ease Sol ESD/ FR

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : SMG 89204607  
Date of test : Nov. 05 2013

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Specimen description : MT13-38576.02 Solid ESD Cushion Ease  
Test name : Prod #1  
File name : D:\FRPFILES\13110009.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX13009.CSV

Thickness (mm) :  
Density (kg/m<sup>3</sup>) :

Test duration : 25 minutes 10 seconds (1510 s)  
Substrate used? : Yes  
Substrate : none  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 02 seconds (122 s)  
Time to flameout : 25 minutes 04 seconds (1504 s)  
Extent of burning (mm) : 210  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.19  
HF-10 (kW/m<sup>2</sup>) : 9.49  
HF-20 (kW/m<sup>2</sup>) : 9.19  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 190  
Flame spread at 20 minutes (mm) : 210  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 31.39  
Time to peak light attenuation : 17 minutes 33 seconds (1053 s)  
Total integrated smoke (%.min) : 382.16  
Potential classification : A2(II)/B(II)  
Smoke production classification : s1

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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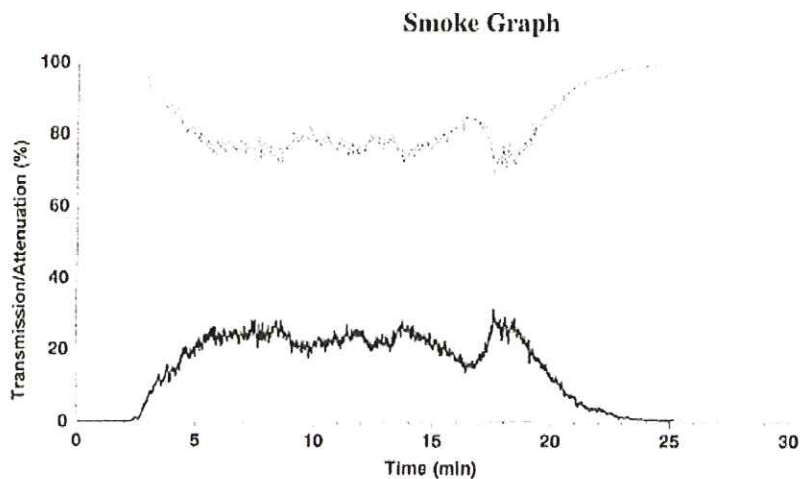
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Test name : Prod #1  
File name : D:\FRPFILES\13110009.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	248	11.3	2.620	510	-	3.6	-
110	371	10.6	3.686	560	-	3.0	-
160	505	9.9	4.639	610	-	2.5	-
210	728	9.2	5.943	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.2	-	760	-	1.5	-
360	-	6.2	-	810	-	1.4	-
410	-	5.2	-	860	-	1.2	-
460	-	4.3	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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### Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : SMG 89204607  
Date of test : Nov. 05 2013

Specimen description : MT 13-38576.02 Solid ESD Cushion Base  
Test name : Prod/ Cross #2  
File name : D:\FRPFJLES\13110010.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX13009.CSV

Thickness (mm) :  
Density (kg/m<sup>3</sup>) :

Test duration : 23 minutes 46 seconds (1426 s)  
Substrate used? : Yes  
Substrate : none  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 02 seconds (122 s)  
Time to flameout : 23 minutes 43 seconds (1423 s)  
Extent of burning (mm) : 180  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.64  
HF-10 (kW/m<sup>2</sup>) : 9.64  
HF-20 (kW/m<sup>2</sup>) : 9.64  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 180  
Flame spread at 20 minutes (mm) : 180  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 32.06  
Time to peak light attenuation : 6 minutes 19 seconds (379 s)  
Total integrated smoke (%.min) : 268.36

**Potential classification** : **A2(II)/B(II)**  
**Smoke production classification** : **s1**

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the safe criterion for assessing the potential fire hazard of the product in use.

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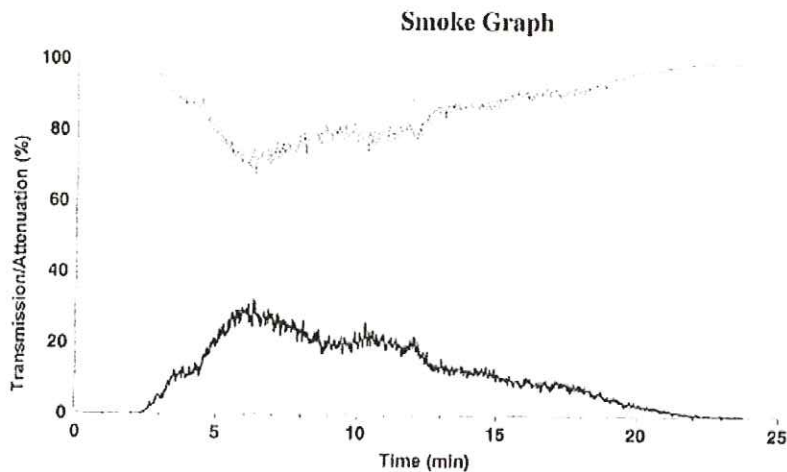
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Test name : Prod/ Cross #2  
File name : D:\FRPFILES\13110010.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	252	11.3	2.662	510	-	3.6	-
110	351	10.6	3.487	560	-	3.0	-
160	507	9.9	4.658	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.2	-	760	-	1.5	-
360	-	6.2	-	810	-	1.4	-
410	-	5.2	-	860	-	1.2	-
460	-	4.3	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

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Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : SMG 89204607  
Date of test : Nov. 05 2013

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Specimen description : MT13-38576.02 Solid ESD Cushion Ease  
Test name : Prod/Cross #3  
File name : D:\FRPFILES\13110011.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX13009.CSV

Thickness (mm) :  
Density (kg/m<sup>3</sup>) :

Test duration : 24 minutes 18 seconds (1458 s)  
Substrate used? : Yes  
Substrate : none  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 02 seconds (122 s)  
Time to flameout : 24 minutes 15 seconds (1455 s)  
Extent of burning (mm) : 230  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 8.78  
HF-10 (kW/m<sup>2</sup>) : 9.19  
HF-20 (kW/m<sup>2</sup>) : 8.78  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 210  
Flame spread at 20 minutes (mm) : 230  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 28.26  
Time to peak light attenuation : 10 minutes 05 seconds (605 s)  
Total integrated smoke (%.min) : 267.83  
Potential classification : A2(H)/B(f)  
Smoke production classification : s1

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



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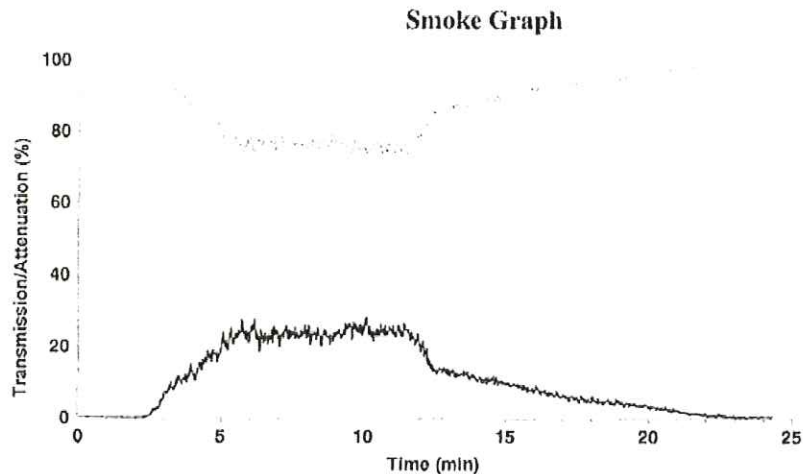
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Test name : Prod/Cross #3  
File name : D:\FRPFILES\13110011.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	248	11.3	2,620	510	-	3.6	-
110	354	10.6	3,517	560	-	3.0	-
160	475	9.9	4,364	610	-	2.5	-
210	588	9.2	4,800	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.2	-	760	-	1.5	-
360	-	6.2	-	810	-	1.4	-
410	-	5.2	-	860	-	1.2	-
460	-	4.3	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : SMG 89204607  
Date of test : Nov. 05 2013

Specimen description : MT13-38576.02 Solid ESD Cushion Ease  
Test name : Prod/Cross # 4  
File name : D:\FRPFILES\13110012.CSV  
Test number in series : 4

Flux calibration file name : CAERPSOFT\CALIBWFLX13009.CSV

Thickness (mm) :  
Density (kg/m<sup>3</sup>) :

Test duration : 23 minutes 56 seconds (1436 s)  
Substrate used? : Yes  
Substrate : none  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 01 seconds (121 s)  
Time to flameout : 23 minutes 54 seconds (1434 s)  
Extent of burning (mm) : 170  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.79  
HF-10 (kW/m<sup>2</sup>) : 10.06  
HF-20 (kW/m<sup>2</sup>) : 9.79  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 150  
Flame spread at 20 minutes (mm) : 170  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 28.36  
Time to peak light attenuation : 6 minutes 23 seconds (383 s)  
Total integrated smoke (%.min) : 241.57

Potential classification : A2(f)/B(f)  
Smoke production classification : s1

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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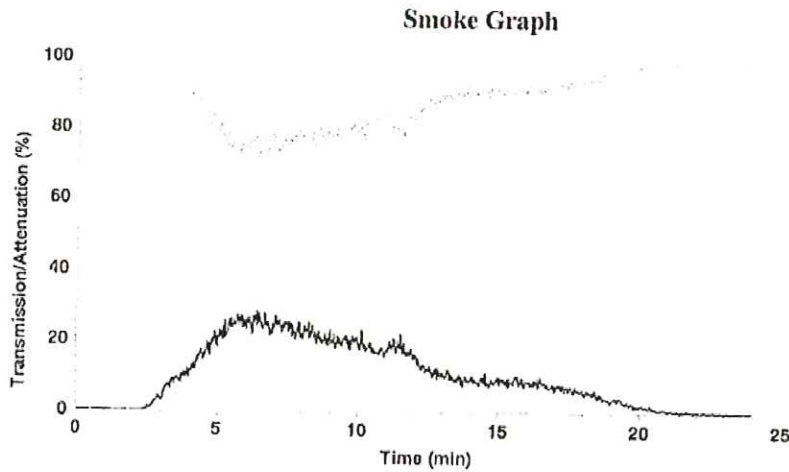
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Test name : Prod/Cross # 4  
File name : D:\FRPFILES\13110012.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	252	11.3	2.662	510	-	3.6	-
110	380	10.6	3.775	560	-	3.0	-
160	619	9.9	5.687	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.2	-	760	-	1.5	-
360	-	6.2	-	810	-	1.4	-
410	-	5.2	-	860	-	1.2	-
460	-	4.3	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.