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### Report

Project number : 89201754  
Report number : 89201754.01br

**Date**  
14<sup>th</sup> of May, 2012

### **Received:**

A sample, entrance flooring system, marked as: **“Nuway Connect – Textile inserts”**  
TÜV sample reference: MT12-35542.01.

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### **Request:**

Classification of burning behaviour according to EN 13501-1:2007.  
Without performing the follow test: ignitability (direct impingement of flame)  
according to EN ISO 11925-2, minimum class is Efl.

**Phone number client**  
+31 75 627 3273

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+31 75 627 3274

### **Test method:**

Reaction to fire (radiant panel) : EN ISO 9239-1:2010.

**Article**  
Nuway Connect – Textile insert

### **Results:**

See page two.

**Appendix**  
I : Flooring Radiant Panel Single  
Specimen Report – 8 pages

### **Appendix:**

See page four up to and including ten.

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.



## APPENDIX I: Flooring Radiant Panel Single Specimen Report

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### Flooring Radiant Panel Single Specimen Report

**Article**  
Nuway Connect – Textile insert

**Standard** : EN ISO 9239-1:2002  
**Laboratory** : TÜV Rheinland Nederland B.V.  
**Sponsor** : Forbo CORAL - 89201754 - Nuway Connect with textile insert - ipk  
**Date of test** : May 07 2012

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**Specimen description** : MT12-35542.01  
**Test name** : Across #1  
**File name** : D:\FRPFILES\12050015.CSV  
**Test number in series** : 4

**Flux calibration file name** : C:\FRPSOFT\CALIB\FLX12006.CSV

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

**Test duration** : 14 minutes 52 seconds (892 s)  
**Substrate used?** : Yes  
**Substrate** : Calcium silicate  
**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** : 14 minutes 49 seconds (889 s)  
**Extent of burning (mm)** : 60  
**Critical flux at extinguishment (kW/m<sup>2</sup>)** : >= 10.9  
**HF-10 (kW/m<sup>2</sup>)** : >= 10.9  
**HF-20 (kW/m<sup>2</sup>)** : >= 10.9  
**HF-30 (kW/m<sup>2</sup>)** : >= 10.9  
**Flame spread at 10 minutes (mm)** : 30  
**Flame spread at 20 minutes (mm)** : -1  
**Flame spread at 30 minutes (mm)** : -1  
**Peak light attenuation (%)** : 41.51  
**Time to peak light attenuation** : 6 minutes 56 seconds (416 s)  
**Total integrated smoke (%.min)** : 160.65  
**Potential classification** : **A2(f1)/B(f1)**  
**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.

**APPENDIX I: Flooring Radiant Panel Single Specimen Report**

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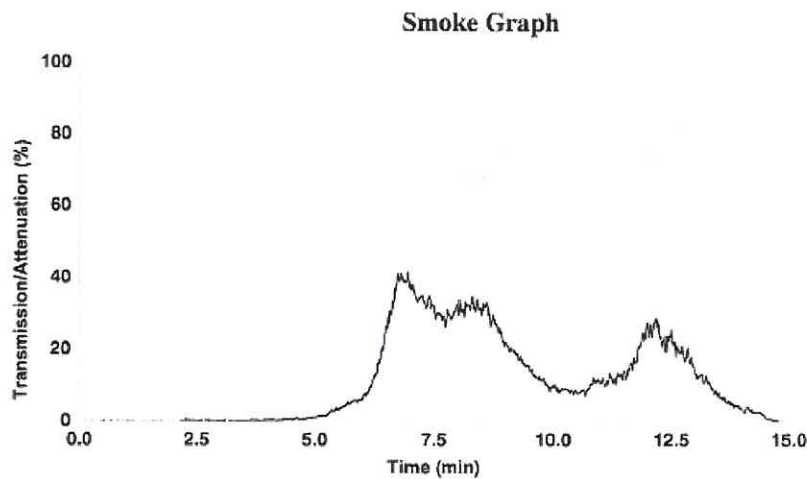
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Test name : Across #1  
File name : D:\FRPFILES\12050015.CSV

**Rake Results**

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsh (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsh (MJ/m <sup>2</sup> )
60	659	11.5	7.086	510	-	3.7	-
110	-	10.8	-	560	-	3.0	-
160	-	10.1	-	610	-	2.5	-
210	-	9.4	-	660	-	2.2	-
260	-	8.3	-	710	-	1.8	-
310	-	7.2	-	760	-	1.6	-
360	-	6.2	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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 : Forbo CORAL - 89201754 - Nuway Connect with textile insert - ipk  
Date of test : May 07 2012

Specimen description : MT12-35542.01  
Test name : Prod #1  
File name : D:\FRPFILES\12050016.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX12006.CSV

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

Test duration : 21 minutes 10 seconds (1270 s)  
Substrate used? : Yes  
Substrate : Calcium silicate  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 03 seconds (123 s)  
Time to flameout : 21 minutes 08 seconds (1268 s)  
Extent of burning (mm) : 210  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.37  
HF-10 (kW/m<sup>2</sup>) : 10.75  
HF-20 (kW/m<sup>2</sup>) : 9.37  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 110  
Flame spread at 20 minutes (mm) : 210  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 45.22  
Time to peak light attenuation : 12 minutes 01 seconds (721 s)  
Total integrated smoke (%.min) : 289.68

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

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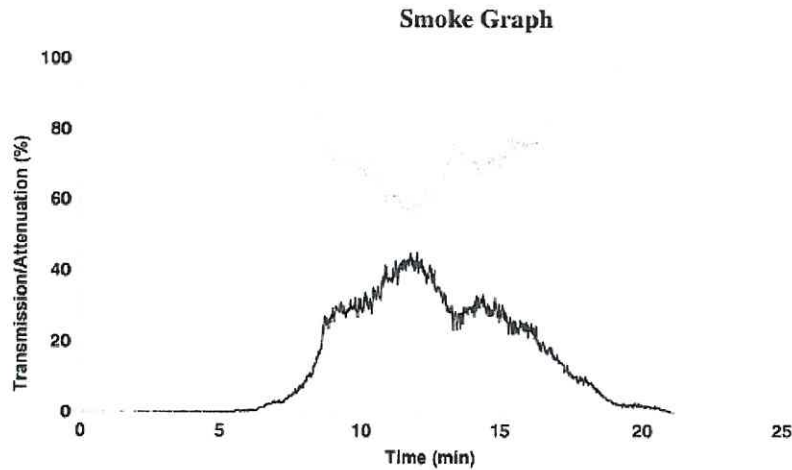
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Test name : Prod #1  
File name : D:\FRPFILES\12050016.CSV

### 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	409	11.5	4.398	510	-	3.7	-
110	607	10.8	6.143	560	-	3.0	-
160	781	10.1	7.318	610	-	2.5	-
210	964	9.4	7.981	660	-	2.2	-
260	-	8.3	-	710	-	1.8	-
310	-	7.2	-	760	-	1.6	-
360	-	6.2	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

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### Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : Forbo CORAL - 89201754 - Nuway Connect with textile insert - ipk  
Date of test : May 07 2012

Specimen description : MT12-35542.01  
Test name : Prod #2  
File name : D:\FRPFILES\12050017.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX12006.CSV

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

Test duration : 24 minutes 12 seconds (1452 s)  
Substrate used? : Yes  
Substrate : Calcium silicate  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 15 seconds (135 s)  
Time to flameout : 24 minutes 04 seconds (1444 s)  
Extent of burning (mm) : 220  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.15  
HF-10 (kW/m<sup>2</sup>) : 10.75  
HF-20 (kW/m<sup>2</sup>) : 9.15  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 110  
Flame spread at 20 minutes (mm) : 220  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 38.12  
Time to peak light attenuation : 10 minutes 38 seconds (638 s)  
Total integrated smoke (%.min) : 267.34  
**Potential classification** : A2(fl)/B(fl)  
**Smoke production classification** : s1

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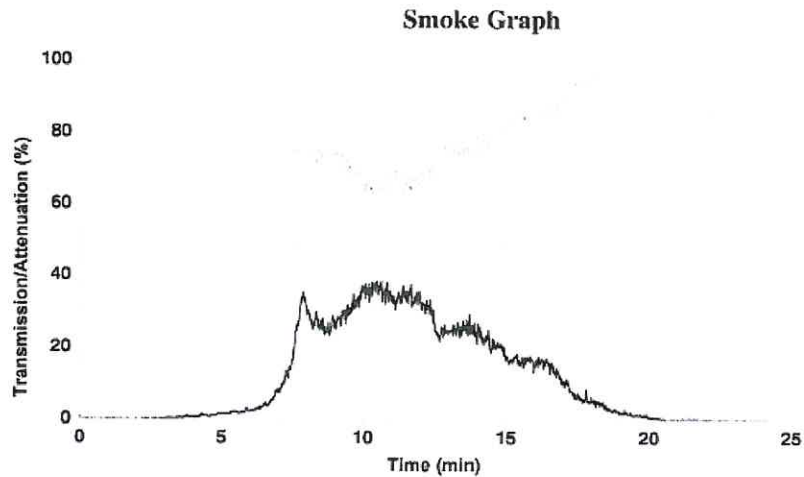
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Test name : Prod #2  
File name : D:\FRPFILES\12050017.CSV

### 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	445	11.5	4.785	510	-	3.7	-
110	604	10.8	6.113	560	-	3.0	-
160	804	10.1	7.533	610	-	2.5	-
210	1046	9.4	8.660	660	-	2.2	-
260	-	8.3	-	710	-	1.8	-
310	-	7.2	-	760	-	1.6	-
360	-	6.2	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

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### Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : Forbo CORAI - Nuway + Textile insert - 89201754 - ipk  
Date of test : May 08 2012

Specimen description : MT12-35542.01  
Test name : Prod #3  
File name : D:\FRPFILES\12050018.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\F\FLX12006.CSV

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

Test duration : 21 minutes 41 seconds (1301 s)  
Substrate used? : Yes  
Substrate : Calcium silicate  
Fixing method : none  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 17 seconds (137 s)  
Time to flameout : 21 minutes 39 seconds (1299 s)  
Extent of burning (mm) : 230  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 8.93  
HF-10 (kW/m<sup>2</sup>) : >= 10.9  
HF-20 (kW/m<sup>2</sup>) : 8.93  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 100  
Flame spread at 20 minutes (mm) : 230  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 39.57  
Time to peak light attenuation : 10 minutes 47 seconds (647 s)  
Total integrated smoke (%.min) : 292.18

**Potential classification** : A2(f1)/B(f1)  
**Smoke production classification** : s1

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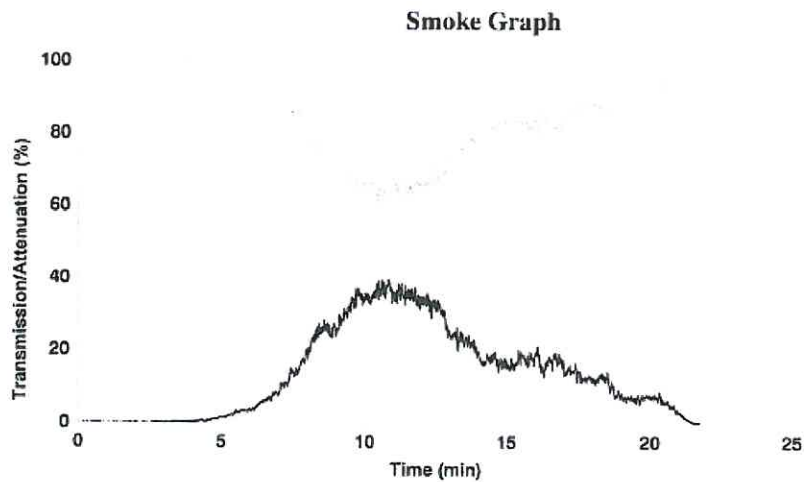
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Test name : Prod #3  
File name : D:\FRPFILES\12050018.CSV

### 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	429	11.5	4.613	510	-	3.7	-
110	636	10.8	6.437	560	-	3.0	-
160	817	10.1	7.655	610	-	2.5	-
210	1003	9.4	8.304	660	-	2.2	-
260	-	8.3	-	710	-	1.8	-
310	-	7.2	-	760	-	1.6	-
360	-	6.2	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

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