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Report

Project number: T10-30350
Report number: T10.30350.01br

Received:

A PVC floor covering, marked as: Surestep/Safestep;
TÜV reference: MT10.30350.01.
Adhesive: Eurocol 540.

Request:

Classification of burning behaviour according to EN 13501:2007.

Test method:

Ignitability (direct impingement of flame) : EN ISO 11925-2:2010
Reaction to fire (radiant panel) : EN ISO 9239-1:2010

Results:

See page two up to, and including three.

Date

December 23, 2010

Project number

T10-30350

Report number

T10.30350.01br

Phone number client

+31-52 459 6868

Fax number client

+31-52 459 6888

Your reference

Article

Surestep/Safestep

Appendix

1

Test results :

 ➤ *Sample description*

Type of manufacture : heterogeneous PVC floor covering*
 Type of secondary backing : grey coloured compact layer*
 Total mass per unit area kg/m² : 2.8
 Total thickness, mm : 2

* = manufacturer's declaration

Date
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Project number
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Report number
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Article
 Surestep/Safestep

Page
 2 of 3

 ➤ *Ignitability EN-ISO 11925-2*

Conditioning time, climate : min. 3 days, 23 ± 2 °C and 50 ± 5 %
 Description of substrate : 6 mm. Fibre cement board, 1800 kg/m³.
 Flame application : Surface.
 Application time : 15 seconds.

Direction:	In production			across production		
Total burning time ¹ (15 s)	15	15	15	15	15	15
Flame tip reaches 150 mm (s)	no	no	no	no	no	no
Extent of damaged area, length (mm)	75	67	67	72	72	78
Extent of damaged area, width (mm)	11	11	11	11	11	11
Material melts (yes/no)	yes	yes	yes	yes	yes	yes
Shrinks away ² (yes/no)	no	no	no	no	no	no
Glowing ³ (sec)	no	no	no	no	no	no
Flaming debris (yes/no)	no	no	no	no	no	no
Ignition of filter paper (yes/no)	no	no	no	no	no	no

1 Inclusive a flame application time of 15 or 30 seconds with surface or edge impingement

2 Shrinks away from flame without being ignited

3 The time at which it occurs and its duration

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon - Surestep
Date of test : Dec. 20 2010

Specimen description : MT10-30350.01
Test name : 1 (I)
File name : D:\FRPFILES\10120022.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX10004.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 12 minutes 02 seconds (722 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : adhesive
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

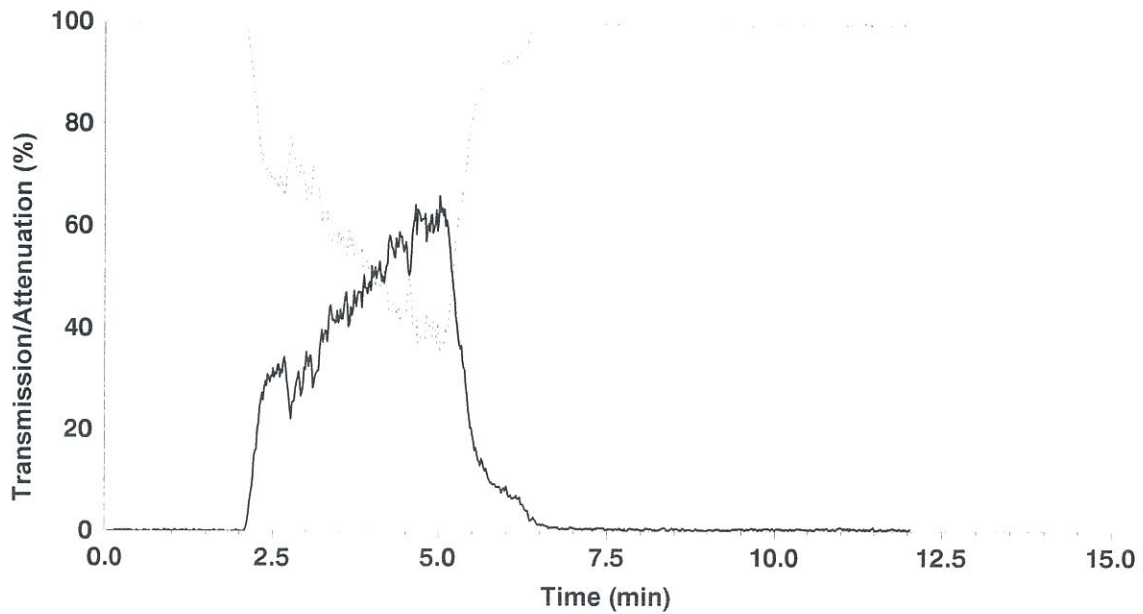
Test Results

Time to ignition : 2 minutes 02 seconds (122 s)
Time to flameout : 12 minutes (720 s)
Extent of burning (mm) : 210
Critical flux at extinguishment (kW/m²) : 9.01
HF-10 (kW/m²) : 9.01
HF-20 (kW/m²) : >= 10,9
HF-30 (kW/m²) : >= 10,9
Flame spread at 10 minutes (mm) : 210
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 65.79
Time to peak light attenuation : 5 minutes 01 seconds (301 s)
Total integrated smoke (%.min) : 153.24

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.

Smoke Graph



Test name : 1 (I)
 File name : D:\FRPFILES\10120022.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)	Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)
60	196	10.7	1.978	510	-	3.7	-
110	233	10.1	2.240	560	-	3.1	-
160	280	9.6	2.524	610	-	2.6	-
210	366	9.0	2.953	660	-	2.2	-
260	-	8.1	-	710	-	1.9	-
310	-	7.2	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.4	-	910	-	1.2	-

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.

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon - Surestep
Date of test : Dec. 20 2010

Specimen description : MT10-30350.01
Test name : 2(J)
File name : D:\FRPFILES\10120023.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX10004.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 8 minutes 15 seconds (495 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : adhesive
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

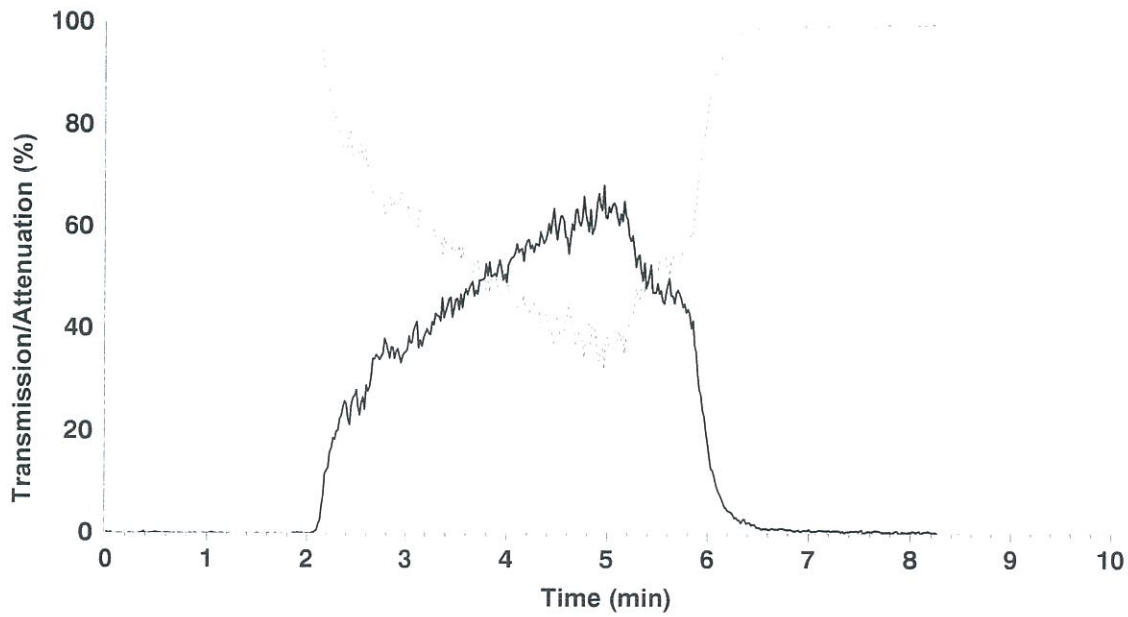
Test Results

Time to ignition : 2 minutes 03 seconds (123 s)
Time to flameout : 8 minutes 13 seconds (493 s)
Extent of burning (mm) : 210
Critical flux at extinguishment (kW/m²) : 9.01
HF-10 (kW/m²) : >= 10.9
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : -1
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 68.13
Time to peak light attenuation : 4 minutes 58 seconds (298 s)
Total integrated smoke (%.min) : 179.03

Potential classification : **A2(fl)/B(fl)**
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.

Smoke Graph



Test name : 2(J)

File name : D:\FRPFILES\10120023.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)	Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)
60	195	10.7	1.968	510	-	3.7	-
110	255	10.1	2.451	560	-	3.1	-
160	275	9.6	2.479	610	-	2.6	-
210	343	9.0	2.768	660	-	2.2	-
260	-	8.1	-	710	-	1.9	-
310	-	7.2	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.4	-	910	-	1.2	-

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.

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon - Surestep
Date of test : Dec. 20 2010

Specimen description : MT10-30350.01
Test name : 3(I)
File name : D:\FRPFILES\10120024.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX10004.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 7 minutes 17 seconds (437 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : adhesive
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

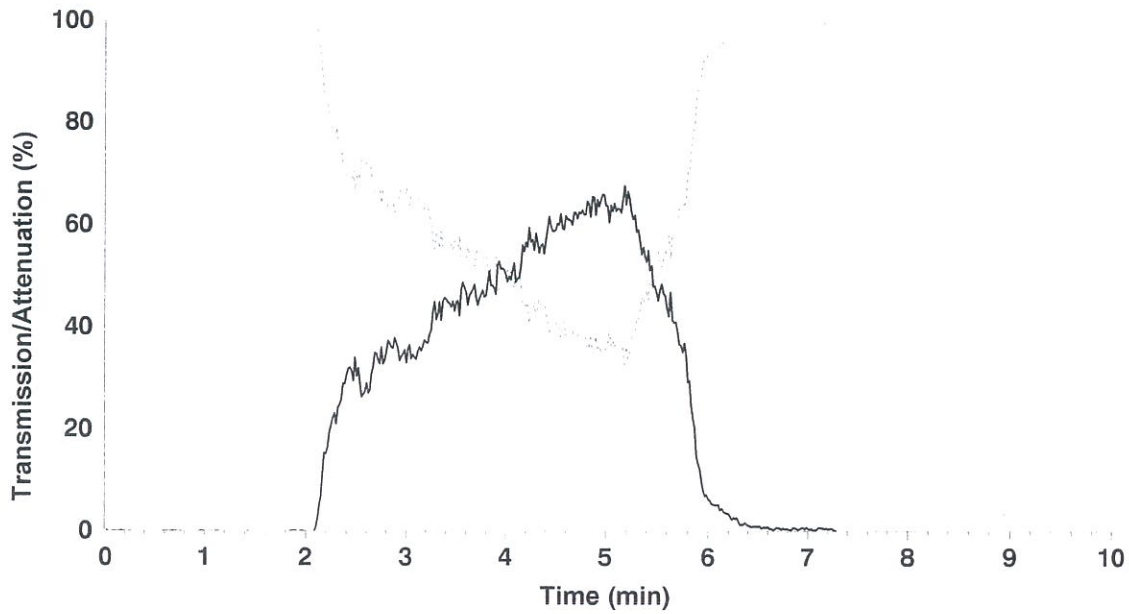
Test Results

Time to ignition : 2 minutes 01 seconds (121 s)
Time to flameout : 7 minutes 16 seconds (436 s)
Extent of burning (mm) : 220
Critical flux at extinguishment (kW/m²) : 8.82
HF-10 (kW/m²) : >= 10.9
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : -1
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 67.61
Time to peak light attenuation : 5 minutes 11 seconds (311 s)
Total integrated smoke (%.min) : 174.29

Potential classification : **A2(fl)/B(fl)**
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.

Smoke Graph



Test name : 3(I)
 File name : D:\FRPFILES\10120024.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)	Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)
60	176	10.7	1.776	510	-	3.7	-
110	243	10.1	2.336	560	-	3.1	-
160	274	9.6	2.470	610	-	2.6	-
210	341	9.0	2.752	660	-	2.2	-
260	-	8.1	-	710	-	1.9	-
310	-	7.2	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.4	-	910	-	1.2	-

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.

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon - Surestep
Date of test : Dec. 20 2010

Specimen description : MT10-30350.01
Test name : 4(J)
File name : D:\FRPFILES\10120025.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX10004.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 9 minutes 37 seconds (577 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : adhesive
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

Test Results

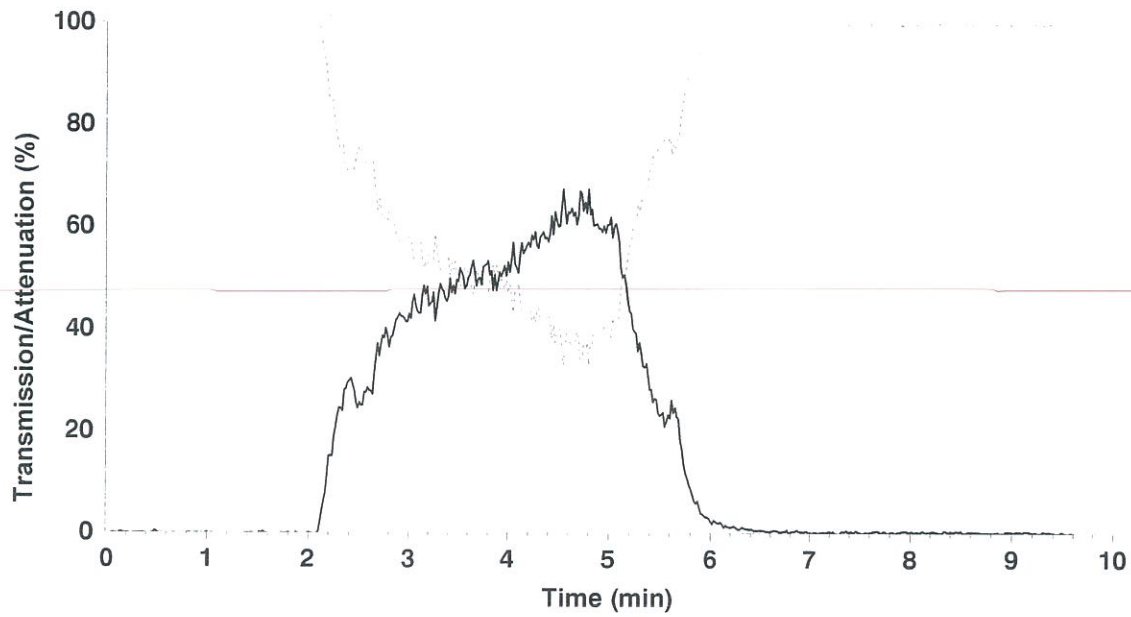
Time to ignition : 2 minutes 03 seconds (123 s)
Time to flameout : 9 minutes 36 seconds (576 s)
Extent of burning (mm) : 210
Critical flux at extinguishment (kW/m²) : 9.01
HF-10 (kW/m²) : >= 10.9
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : -1
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 67.29
Time to peak light attenuation : 4 minutes 33 seconds (273 s)
Total integrated smoke (%.min) : 162.3

Potential classification : **A2(fl)/B(fl)**

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.

Smoke Graph



Test name : 4(J)
 File name : D:\FRPFILES\10120025.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)	Position (mm)	Time (s)	Flux (kW/m ²)	Qsb (MJ/m ²)
60	188	10.7	1.897	510	-	3.7	-
110	219	10.1	2.105	560	-	3.1	-
160	280	9.6	2.524	610	-	2.6	-
210	340	9.0	2.743	660	-	2.2	-
260	-	8.1	-	710	-	1.9	-
310	-	7.2	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.4	-	910	-	1.2	-

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.