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Report

Project number: 89209643
Report number: 89209643.01br

Date
15/04/2016

Project number
89209643

Report number
89209643.01br

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Received:

A resilient floor covering, marked as: “Sphera”;
TÜV-reference: MT16-100667.01

Article
Sphera

Sampling procedure:

The samples are selected by the applicant. The test house has had no influence on the sampling procedure.

The samples have been received on 01/04/2016.

Order:

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

Test methods: Ignitability of products subjected to direct impingement of flame (ISO 11925-2:2010/C1:2011) and determination of the burning behaviour using a radiant heat source (ISO 9239-1:2010)

Appendix
I : Flooring Radiant Panel Single Specimen Report – 6 pages

Results:

See page three and four.

Appendix:

See page five 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.

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PRODUCT IDENTIFICATION

Applicant & Manufacturer : Forbo Novilon B.V.
Productname : **Spera***
Product type : Resilient, homogeneous pvc floorcovering
Total thickness (mm) : 2.0*
Total mass (gr/m²) : 2900*
Note by applicant : No specimen orientation applicable *

Total thickness (mm) : 2.2**
Total mass (gr/m²) : 2919**
Density (kg/m³) : 1333**

* Applicant's declaration

** Determination by the test house after conditioning to constant mass is achieved.

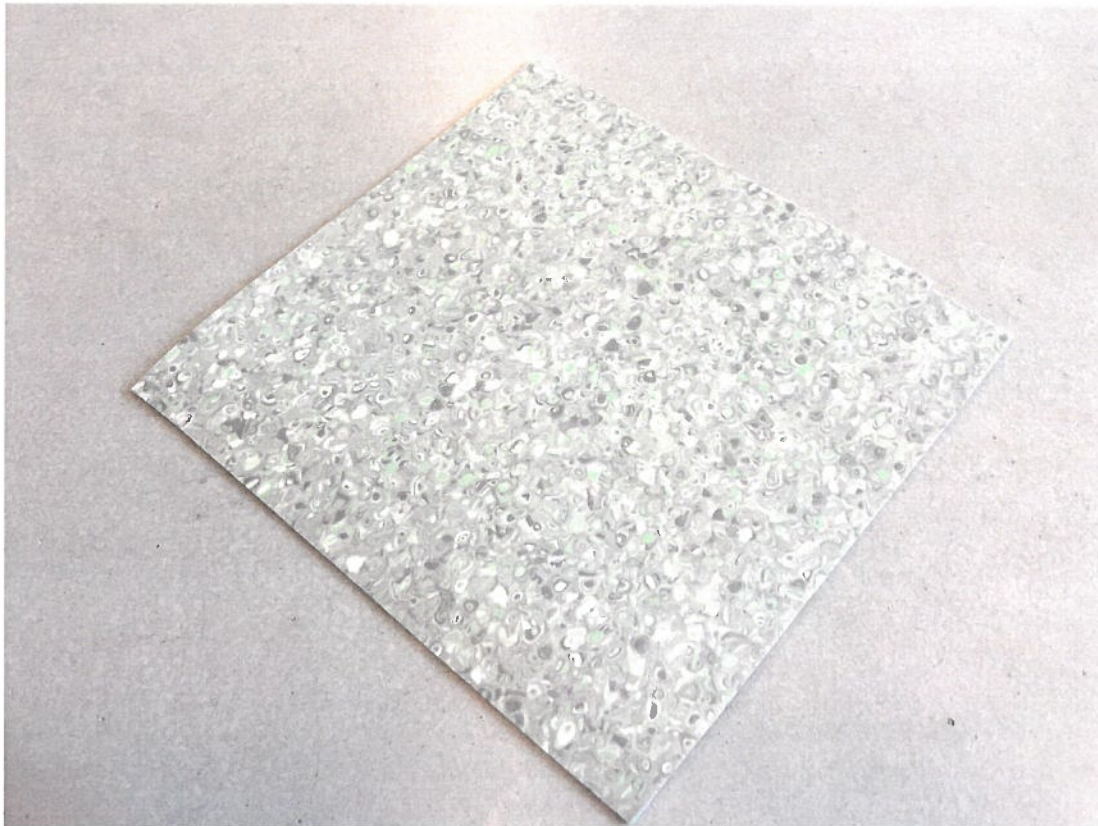


Figure 1, Picture of the received sample

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TEST RESULTS

Ignitability of products subjected to direct impingement of flame

Method EN ISO 11925-2 :2010/C1:2011

Date of testing : 13/04/2016

Conditioning time, climate : ≥ 7 days, 23 ± 2 °C and 50 ± 5 %

Description of substrate : Fibre cement board, 8 ± 2 mm, 1800 ± 200 kg/m³ conforming to EN 13238.

Flame application : Surface.

Flame application time : 15 seconds.

Orientation:	Longitudinal ⁴		
Total burning time ¹	15	15	15
Flame tip reaches 150 mm (s)	No	No	No
Extent of damaged area, length (mm)	51	52	55
Extent of damaged area, width (mm)	10	10	10
Material melts (yes/no)	Yes	Yes	Yes
Shrinks away ² (yes/no)	No	No	No
Glowing ³ (sec)	No	No	No
Flaming debris (yes/no)	No	No	No
Ignition of filter paper (yes/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

4 No production direction is applicable, the sample is tested in the longitudinal direction of the delivered material.

Determination of the burning behaviour using a radiant heat source

Method EN ISO 9239-1:2010

Date of testing : 13/04/2016

Conditioning time, climate : ≥ 7 days, 23 ± 2 °C and 50 ± 5 %

Description of substrate : Fibre cement board, 8 ± 2 mm, 1800 ± 200 kg/m³ conforming to EN 13238.

Sampling procedure : By contractor.

Description of cleaning used : None.

Fixing method : None, sample is tested loose laid on the substrate.

Test specimen, orientation	Flame spread (cm)	CRF (kW/m ²)	Peak light attenuation (%)	Smoke production (%.min)
1	9.0	≥ 10.9	24.6	79
2	5.0	≥ 10.9	19.6	79
3	6.0	≥ 10.9	25.9	67
Mean	6.7	≥ 10.9	23.4	75

No specimen orientation is applicable, there for three samples are sufficient.

Specimen 1, 2 and 3: No flashing, transitory- or sustained flaming are observed.

Specimen 1, 2 and 3: Extinguished naturally before the end of the test duration

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CONCLUSION

According to EN 13501-1:2007+ A1:2009 the tested sample of the aforementioned quality “**Sphera**”, in relation to its reaction to fire behaviour is classified: **B_n**.
The additional classification in relation to smoke production is: **s1**.

The aforementioned quality meets the requirement of reaction to fire classification: B_n – 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.
- Any way of fixation, glued down or loose laid.

Statements:

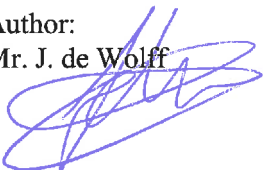
The test results only relate to the behaviour of the test specimens of the examined product under the particular conditions of the test in laboratory conditions; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. The method might not be suitable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

The validity of this report will expire 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:

Mr. J. de Wolff



Review:

Mr. R. Boerboom



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APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSOFT software

page 1

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon BV 89209643
Date of test : Apr. 13 2016

Specimen description : Sphera MT16-100667.01
Test name : # 1 No direction
File name : D:\FRPFILES\16040021.CSV
Test number in series : 3

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16005.CSV

Thickness (mm) : 2.2
Density (kg/m³) : 1333

Test duration : 12 minutes 18 seconds (738 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 04 seconds (124 s)
Time to flameout : 12 minutes 16 seconds (736 s)
Extent of burning (mm) : 90
Critical flux at extinguishment (kW/m²) : >= 10,9
HF-10 (kW/m²) : 10.80
HF-20 (kW/m²) : Not calculated (test duration < 20 minutes)
HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm) : 90
Flame spread at 20 minutes (mm) : Not measured
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 24.63
Time to peak light attenuation : 4 minutes 06 seconds (246 s)
Total integrated smoke (%.min) : 79.36
Potential classification : A2(0)/B(0)
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

Report produced with the Fire Testing Technology FRPSoft software

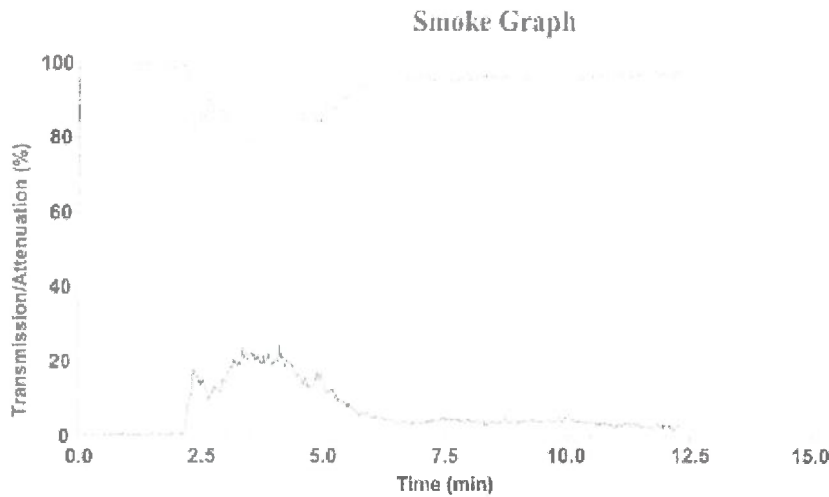
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Test name : # 1 No direction
File name : D:\FRPFILES\16040021.CSV

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	272	11.3	3.069	510	-	3.5	-
110	-	10.5	-	560	-	2.9	-
160	-	9.8	-	610	-	2.4	-
210	-	9.0	-	660	-	2.0	-
260	-	8.0	-	710	-	1.6	-
310	-	7.0	-	760	-	1.5	-
360	-	5.9	-	810	-	1.4	-
410	-	4.9	-	860	-	1.3	-
460	-	4.1	-	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.

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Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Novilon BV 89209643
Date of test : Apr. 13 2016

Specimen description : Sphera MT16-100667.01
Test name : # 2 No direction
File name : D:\FRPFILES\16040022.CSV
Test number in series : 3

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16005.CSV

Thickness (mm) : 2.2
Density (kg/m³) : 1333

Test duration : 12 minutes 20 seconds (740 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : None (loose laid)
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

Test Results

Time to ignition : 2 minutes 04 seconds (124 s)
Time to flameout : 12 minutes 18 seconds (738 s)
Extent of burning (mm) : 50
Critical flux at extinguishment (kW/m²) : >= 10.9
HF-10 (kW/m²) : >= 10.9
HF-20 (kW/m²) : Not calculated (test duration < 20 minutes)
HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm) : 50
Flame spread at 20 minutes (mm) : Not measured
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 19.58
Time to peak light attenuation : 3 minutes 30 seconds (210 s)
Total integrated smoke (%.min) : 78.83
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.

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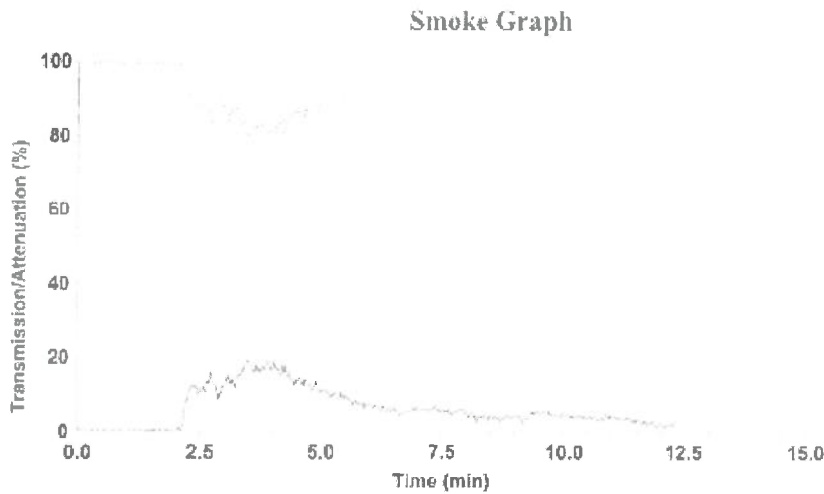
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Test name : # 2 No direction
File name : D:\FRPFILES\16040022.CSV

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	-	11.3	-	510	-	3.5	-
110	-	10.5	-	560	-	2.9	-
160	-	9.8	-	610	-	2.4	-
210	-	9.0	-	660	-	2.0	-
260	-	8.0	-	710	-	1.6	-
310	-	7.0	-	760	-	1.5	-
360	-	5.9	-	810	-	1.4	-
410	-	4.9	-	860	-	1.3	-
460	-	4.1	-	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.

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Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010
 Laboratory : TÜV Rheinland Nederland B.V.
 Sponsor : Forbo Novilon BV 89209643
 Date of test : Apr. 13 2016

Specimen description : Sphera MT16-100667.01
 Test name : # 3 No direction
 File name : D:\FRPFILES\16040023.CSV
 Test number in series : 3

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16005.CSV

Thickness (mm) : 2.2
 Density (kg/m³) : 1333

Test duration : 12 minutes 08 seconds (728 s)
 Substrate used? : Yes
 Substrate : Calcium silicate
 Fixing method : None (loose laid)
 Conditioned? : Yes
 Conditioning temp. (°C) : 23
 Conditioning RH (%) : 50

Test Results

Time to ignition : 2 minutes 03 seconds (123 s)
 Time to flameout : 12 minutes 06 seconds (726 s)
 Extent of burning (mm) : 60
 Critical flux at extinguishment (kW/m²) : >= 10.9
 HF-10 (kW/m²) : >= 10.9
 HF-20 (kW/m²) : Not calculated (test duration < 20 minutes)
 HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
 Flame spread at 10 minutes (mm) : 60
 Flame spread at 20 minutes (mm) : Not measured
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 25.86
 Time to peak light attenuation : 3 minutes 19 seconds (199 s)
 Total integrated smoke (%.min) : 67.24

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.

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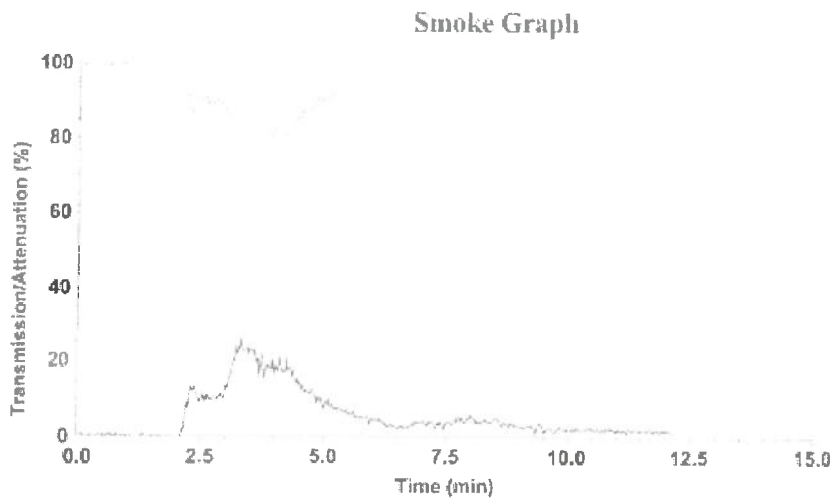
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Test name : # 3 No direction
File name : D:\FRPFILES\16040023.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	486	11.3	5.484	510	-	3.5	-
110	-	10.5	-	560	-	2.9	-
160	-	9.8	-	610	-	2.4	-
210	-	9.0	-	660	-	2.0	-
260	-	8.0	-	710	-	1.6	-
310	-	7.0	-	760	-	1.5	-
360	-	5.9	-	810	-	1.4	-
410	-	4.9	-	860	-	1.3	-
460	-	4.1	-	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.