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Report

Project number: 89208700
Report number: 89208700.01br

Date
21/10/2015

Project number
89208700

Report number
89208700.01br

Phone number client
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Received:
A textile floor covering, marked as: “Coral Logo”;
TÜV-reference: MT15-79434.01

Article
Coral Logo

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 28/09/2015.

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 behavior using a radiant heat source (ISO 9239-1:2010)

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

Results:
See page three and four.

Appendix:
See page five up to and including twelve.

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.

PRODUCT IDENTIFICATION

Applicant : Forbo Flooring Coral N.V.*
Name : Coral Logo*
Type of colouring/patterning : Plain*
Type of manufacture : Tufted
Type of surface : Cut pile
Pile fibre composition : 100% Polyamide*
Tuft medium : PES non woven*
Secondary backing : Everfort Vinyl*
Total thickness (mm) : 7.6**
Total pile thickness (mm) : 4.9**
Total weight (gr/m²) : 3334**

* Applicant's declaration

* Determined by the test house

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Figure 1, Picture of the received sample

TEST RESULTS

Ignitability of products subjected to direct impingement of flame

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

According EN 14041:2004 table 2 these floor coverings are classified as E_{fl}
 (classified without further testing).

Determination of the burning behavior using a radiant heat source

Method EN ISO 9239-1:2010

Date of testing : 13/10/2015
 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 : Sample is glued with Eurocol 640 on 1/10/2015.

Test specimen, orientation	Flame spread (cm)	CRF (kW/m ²)	Peak light attenuation (%)	Smoke production (%.min)
1, Length	17.0	9.6	45.4	238
2, Width	19.0	9.2	45.4	242
3, Width	26.0	7.8	57.4	313
4, Width	17.0	9.6	46.7	229
Mean, Width	20.7	8.9	49.8	261

Specimen 1, 2, 3 and 4: No flashing, transitory- or sustained flaming are observed.

Specimen 1, 2, 3 and 4: 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 “Coral Logo”, 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

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.
- Glued down with Eurocol 640

Statements:

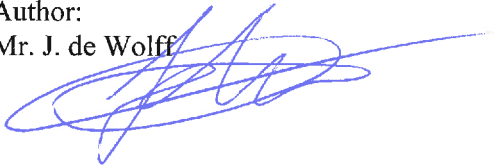
The test results only relate to the behaviour of the test specimens of the examined product under the particular conditions of the test in laboratory conditions; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use. The method might not be suitable 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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(end of report)

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSOFT software

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Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010
 Laboratory : TÜV Rheinland Nederland B.V.
 Sponsor : Forbo Flooring Coral 89208700 TLC
 Date of test : Oct. 13 2015

Specimen description : Coral Logo MT15-79434.01
 Test name : Prod #1
 File name : D:\FRPFILES\15100028.CSV
 Test number in series : 4

Flux calibration file name : CNFRPSOFT2.9A\CALIB\FLX15011.CSV

Thickness (mm) :
 Density (kg/m³) :

Test duration : 14 minutes 42 seconds (882 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 04 seconds (124 s)
 Time to flameout : 14 minutes 41 seconds (881 s)
 Extent of burning (mm) : 170
 Critical flux at extinguishment (kW/m²) : 9.55
 HF-10 (kW/m²) : 9.74
 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) : 160
 Flame spread at 20 minutes (mm) : Not measured
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 45.43
 Time to peak light attenuation : 7 minutes 36 seconds (456 s)
 Total integrated smoke (%.min) : 238.34

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.

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Report produced with the Fire Testing Technology FRPSoft software

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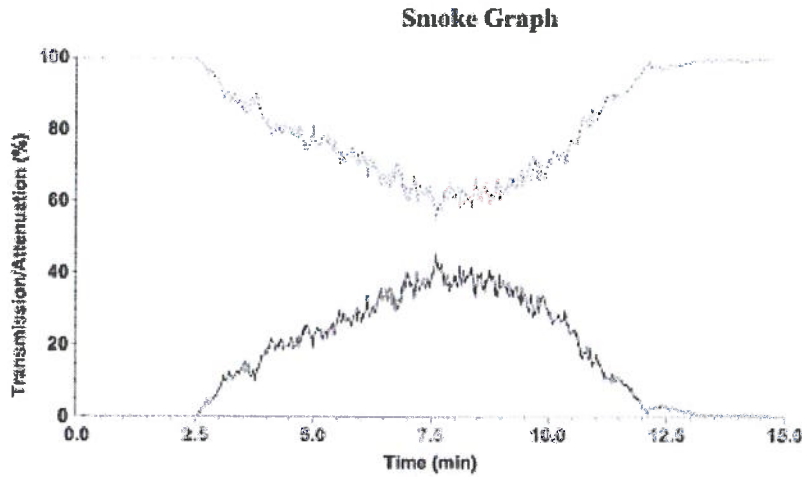
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Test name : Prod #1
File name : D:\FRPFILES\15100028.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	315	11.6	3.641	510	-	3.5	-
110	426	19.5	4.513	560	-	2.9	-
160	574	9.7	5.591	610	-	2.5	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.9	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	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 9239-1:2010
 Laboratory : TÜV Rheinland Nederland B.V.
 Sponsor : Forbo Flooring Coral 89208700 TLC
 Date of test : Oct. 13 2015

Specimen description : Coral Logo MT15-79434.01
 Test name : Cross #2
 File name : D:\FRPFILES\15100029.CSV
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX15011.CSV

Thickness (mm) :
 Density (kg/m³) :

Test duration : 14 minutes 33 seconds (873 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 04 seconds (124 s)
 Time to flameout : 14 minutes 26 seconds (866 s)
 Extent of burning (mm) : 190
 Critical flux at extinguishment (kW/m²) : 9.16
 HF-10 (kW/m²) : 9.74
 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) : 160
 Flame spread at 20 minutes (mm) : Not measured
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 45.42
 Time to peak light attenuation : 7 minutes 12 seconds (432 s)
 Total integrated smoke (%.min) : 241.61

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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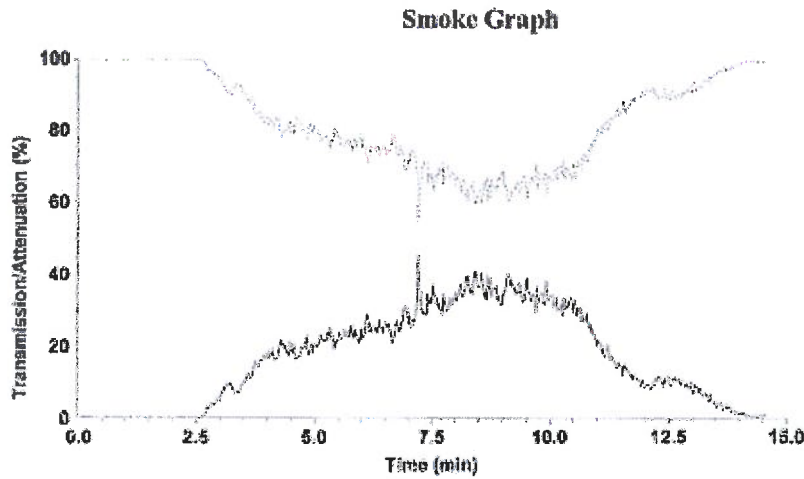
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Test name : Cross #2
File name : D:\FRPFILES\15100029.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
50	320	11.6	3.899	510	-	3.5	-
110	459	10.6	4.863	560	-	2.9	-
160	590	9.7	5.757	610	-	2.8	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.9	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	910	-	1.1	-

Comments

Specimen extinguished naturally.

These results relate only to the behaviour of the specimen of the product under the particular conditions of the test; they are not intended to be the sole criteria 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 Flooring Coral 89208700 TLC
 Date of test : Oct. 13 2015

Specimen description : Coral Logo MT15-79434.01
 Test name : Cross #3
 File name : D:\FRPFILES\15100030.CSV
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX15011.CSV

Thickness (mm) :
 Density (kg/m³) :

Test duration : 24 minutes 01 seconds (1441 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 06 seconds (126 s)
 Time to flameout : 23 minutes 59 seconds (1439 s)
 Extent of burning (mm) : 260
 Critical flux at extinguishment (kW/m²) : 7,78
 HF-10 (kW/m²) : 9,55
 HF-20 (kW/m²) : 7,98
 HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
 Flame spread at 10 minutes (mm) : 170
 Flame spread at 20 minutes (mm) : 250
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 57,38
 Time to peak light attenuation : 8 minutes 50 seconds (530 s)
 Total integrated smoke (%.min) : 313,37

Potential classification : C(R)
 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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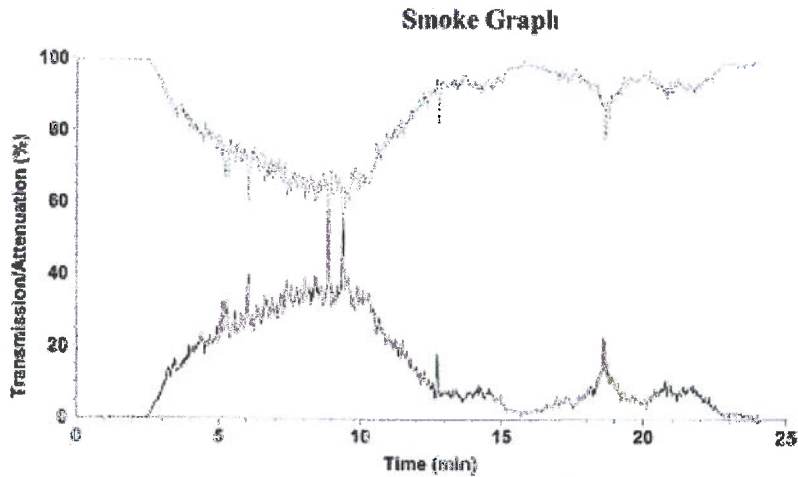
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Test name : Cross #3
File name : D:\FRPFILES\15100030.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	318	11.6	3.676	510	-	3.5	-
110	458	10.6	4.853	560	-	2.9	-
160	584	9.7	5.988	610	-	2.5	-
210	931	8.8	8.169	660	-	2.1	-
260	1274	7.8	9.917	710	-	1.8	-
310	-	6.9	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	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 9239-1:2010
 Laboratory : TÜV Rheinland Nederland B.V.
 Sponsor : Forbo Flooring Coral 89208700 TLC
 Date of test : Oct. 13 2015

Specimen description : Coral Logo MT15-79434.01
 Test name : Cross #4
 File name : D:\FRPFILES\15100031.CSV
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX15011.CSV

Thickness (mm) :
 Density (kg/m³) :

Test duration : 12 minutes 10 seconds (730 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 04 seconds (124 s)
 Time to flameout : 12 minutes 08 seconds (728 s)
 Extent of burning (mm) : 170
 Critical flux at extinguishment (kW/m²) : 9.55
 HF-10 (kW/m²) : 9.74
 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) : 160
 Flame spread at 20 minutes (mm) : Not measured
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 46.73
 Time to peak light attenuation : 8 minutes 09 seconds (489 s)
 Total integrated smoke (%.min) : 229.11

Potential classification : A2(B)/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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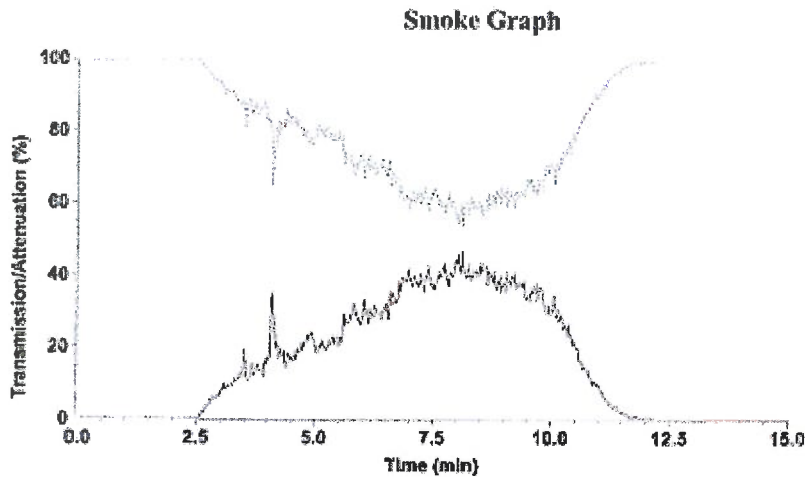
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Test name : Cross #4
File name : D:\FRPFILES\15100031.CSV

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	319	11.6	3.668	510	-	3.5	-
110	426	10.6	4.513	560	-	2.9	-
160	570	9.7	5.532	610	-	2.5	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.9	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	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.