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Report

Project number : 89202879
Report number : 89202879.01br

Date
14 January, 2013

Received:

Prepared samples of textile floor covering, an entrance mat, marked as:
"Coral Classic 640"; TÜV sample reference: MT12-36839.01.

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Sampling Procedure:

The sample have all been prepared, cut out and fixed with Eurocol Eurostar 540 on a fibre cement board by the applicant.

The test house has had no influence on the sampling procedure nor the sample preparation. The received samples were test worthy.

Phone number client
+31 75 627 3273

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Request:

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

Article
Coral Classic 640

Test method:

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

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

Results:

See page two.

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:

See page three up to and including ten.

TEST RESULTS

➤ Radiant Panel test ISO 9239-1:2010

Date of testing : 06.12.2012 (1+2) and 14.01.2013 (3+4)
 Conditioning time, climate : ≥ 3 days, 23 ± 2 °C and 50 ± 5 %
 Description of substrate : Fibre cement board, conforming to EN 13238.
 Sampling procedure : By contractor.
 Description of cleaning used : None.
 Fixing method : Fixed by contractor with Eurocol Eurostar 540.

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Test specimen, orientation	Flame spread (cm)	CRF (kW/m ²)	Peak light attenuation (%)	Smoke production (%.min)
1, ⊥	14.0	10.1	32.7	180
2, ↑	15.0	9.9	37.0	201
3, ↑	15.0	9.9	31.9	194
4, ↑	18.0	9.5	41.5	257
Mean₂₋₄	16.0	9.8	36.8	217

Remarks: No flashing, transitory- or sustained flaming observed.
 All four tested specimen extinguished naturally.

CONCLUSION

According to EN 13501-1:2007 the tested sample of the aforementioned floor covering quality **Coral Classic 640** meets the requirements of **Class B_n - s1**, when glued down with Eurocol Euostar 540.

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.

Author:
 Mrs. I. Pierik

Review:
 Mr. J. Brinks

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APPENDIX I: Flooring Radiant Panel Single Specimen Report

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Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo - 89202879 - Coral Classic divers gelijmd - IPK
Date of test : Dec. 06 2012

Specimen description : MT12-36839.02 - 640 CMD
Test name : 2 - 640 CMD
File name : D:\FRPFILES\12120004.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FIX12013.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 12 minutes 19 seconds (739 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 : 12 minutes 17 seconds (737 s)
Extent of burning (mm) : 140
Critical flux at extinguishment (kW/m²) : 10.06
HF-10 (kW/m²) : 10.06
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : 140
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 32.65
Time to peak light attenuation : 6 minutes 52 seconds (412 s)
Total integrated smoke (%.min) : 179.66
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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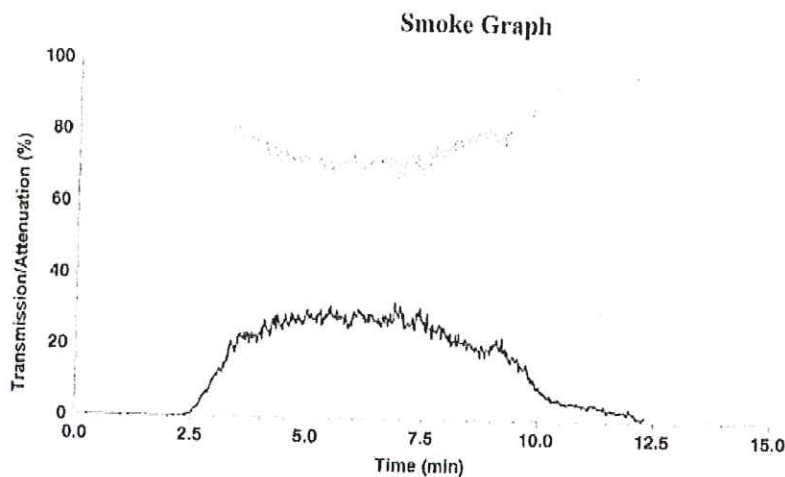
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Test name : 2 - 640 CMD
 File name : D:\FRPFILES\12120004.CSV

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	269	11.2	2.808	510	-	3.6	-
110	384	10.4	3.763	560	-	3.0	-
160	-	9.8	-	610	-	2.5	-
210	-	9.0	-	660	-	2.1	-
260	-	8.0	-	710	-	1.8	-
310	-	7.1	-	760	-	1.5	-
360	-	6.0	-	810	-	1.3	-
410	-	5.1	-	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 : Forbo - 89202879 - Coral Classic divers gelijmd - IPK
Date of test : Dec. 06 2012

Specimen description : MT12-36839.01 - 640 MD
Test name : *Precluv*
File name : D:\FRPFILES\12120003.CSV
Test number in series : 4

Flux calibration file name : CAFRPSOFT\CALIB\FLX12013.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 12 minutes 27 seconds (747 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 04 seconds (724 s)
Extent of burning (mm) : 150
Critical flux at extinguishment (kW/m²) : 9.93
HF-10 (kW/m²) : 9.93
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : 150
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 37.01
Time to peak light attenuation : 7 minutes 05 seconds (425 s)
Total integrated smoke (%.min) : 200.58

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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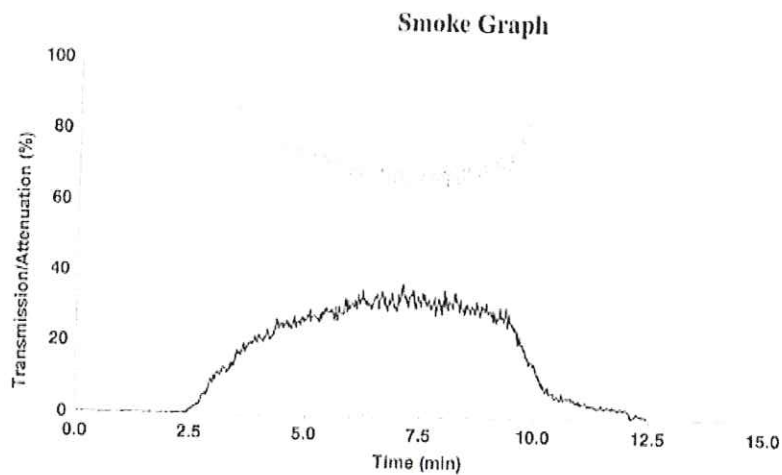
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Test name : $\beta_{y,oc1} - \#1$
 File name : D:\FRPFILES\12120003.CSV

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	240	11.2	2.505	510	-	3.6	-
110	412	10.4	4.038	560	-	3.0	-
160	-	9.8	-	610	-	2.5	-
210	-	9.0	-	660	-	2.1	-
260	-	8.0	-	710	-	1.8	-
310	-	7.1	-	760	-	1.5	-
360	-	6.0	-	810	-	1.3	-
410	-	5.1	-	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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Article
Coral Classic 640

Standard : EN ISO 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Flooring - Coral Classic 640 MD - 89202879 -IPK
Date of test : Jan. 14 2013

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Specimen description : MT12-36839.01
Test name : 640 MD -I
File name : D:\FRPFILES\13010003.CSV
Test number in series : 2

Flux calibration file name : C:\FRPSOFT\CALIB\FLX13001.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 12 minutes 41 seconds (761 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 38 seconds (758 s)
Extent of burning (mm) : 150
Critical flux at extinguishment (kW/m²) : 9.93
HF-10 (kW/m²) : 10.19
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : 130
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 31.89
Time to peak light attenuation : 9 minutes 14 seconds (554 s)
Total integrated smoke (%.min) : 194.24
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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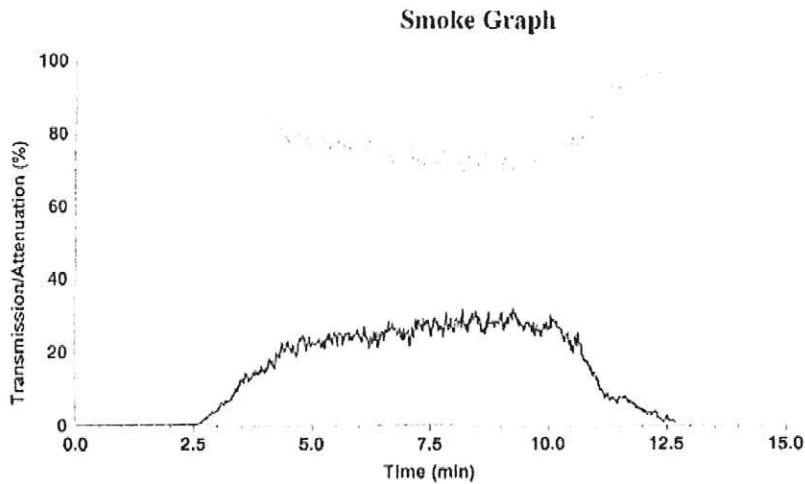
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Test name : 640 MD -1
File name : D:\FRPFILES\13010003.CSV

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	324	11.2	3.385	510	-	3.5	-
110	508	10.4	4.976	560	-	3.0	-
160	-	9.8	-	610	-	2.5	-
210	-	9.0	-	660	-	2.1	-
260	-	8.0	-	710	-	1.8	-
310	-	7.0	-	760	-	1.5	-
360	-	6.0	-	810	-	1.3	-
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 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 9239-1:2002
Laboratory : TÜV Rheinland Nederland B.V.
Sponsor : Forbo Flooring - Coral Classic 640 MD - 89202879 -IPK
Date of test : Jan. 14 2013

Specimen description : MT12-36839.01
Test name : 640 MD -2
File name : D:\FRPFILES\13010004.CSV
Test number in series : 2

Flux calibration file name : C:\FRPSOFT\CALIB\FLX13001.CSV

Thickness (mm) :
Density (kg/m³) :

Test duration : 14 minutes 10 seconds (850 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 : 14 minutes 08 seconds (848 s)
Extent of burning (mm) : 180
Critical flux at extinguishment (kW/m²) : 9.49
HF-10 (kW/m²) : 9.93
HF-20 (kW/m²) : >= 10.9
HF-30 (kW/m²) : >= 10.9
Flame spread at 10 minutes (mm) : 150
Flame spread at 20 minutes (mm) : -1
Flame spread at 30 minutes (mm) : -1
Peak light attenuation (%) : 41.45
Time to peak light attenuation : 9 minutes 40 seconds (580 s)
Total integrated smoke (%.min) : 257,24
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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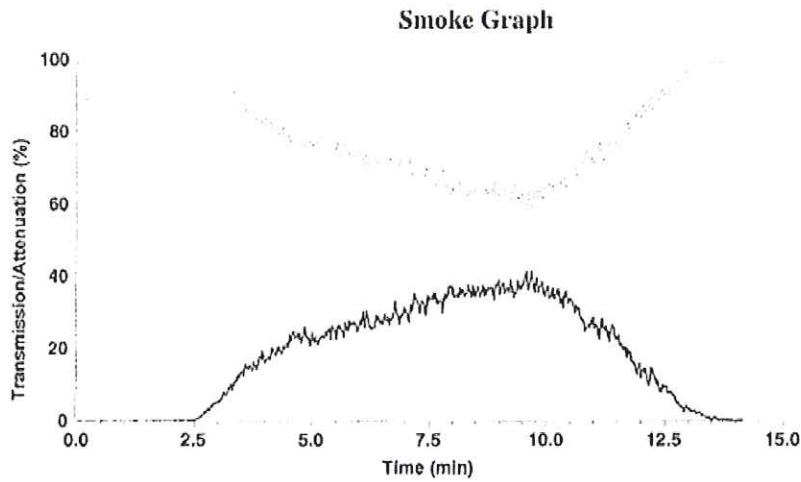
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Test name : 640 MD -2
File name : D:\FRPFILES\13010004.CSV

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	337	11.2	3.521	510	-	3.5	-
110	461	10.4	4.515	560	-	3.0	-
160	656	9.8	5.918	610	-	2.5	-
210	-	9.0	-	660	-	2.1	-
260	-	8.0	-	710	-	1.8	-
310	-	7.0	-	760	-	1.5	-
360	-	6.0	-	810	-	1.3	-
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.