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Testreport

Project number: 89208761
Report number: 89208761.06br

Date
03/03/2016

Received:

A resilient floor covering, marked as: “**mFLOR Loose Lay 50-07**”;
TÜV-reference: MT16-80626.03

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Sampling procedure:

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

Phone number client
+44 1525714082

Fax number client
+44 1525714083

The samples have been received on 18/01/2016

Order:

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

Article
mFLOR Loose Lay 50-07

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
- none -

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 : Endesign Limited
Name : mFLOR Loose Lay 50-07*
Type of product : Resilient, PVC, heterogeneous
Type of colouring/patterning : Wood pattern
Pattern nr. : 70294*
Batch nr. : 15.09.16*
Dimensions (mm) : 184.2 x 1219.2 (planks)*
Total thickness (mm) : 5.0 *
Thickness of wear layer (mm) : 0.7*
Type : I, wear-layer binder content >80%*
Finish : PU finish*

Total thickness (mm) : 4.95**
Total mass (gr/m²) : 8490**
Density (kg/m³) : 1715**

* Applicant's declaration

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

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Figure 1, Picture of the received sample



Figure 2, Picture of the received sample (back)

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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 : 17/02/2016
 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:	Length			Width		
Total burning time ¹	15	15	15	15	15	15
Flame tip reaches 150 mm (s)	No	No	No	No	No	No
Extent of damaged area, length (mm)	50	53	53	55	53	53
Extent of damaged area, width (mm)	12	12	12	12	12	12
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

Determination of the burning behaviour using a radiant heat source

Method EN ISO 9239-1:2010

Date of testing : 17/02/2016
 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, Length	15.0	9.6	32.0	123
2, Width	14.0	10.1	28.9	112
3, Length	14.0	10.1	32.0	100
4, Length	22.0	8.6	28.5	198
Mean, Length	16.7	9.6	29.8	137

Specimen 1, 2, 3 and 4: 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 “**mFLOR Loose Lay 50-07**”, 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.
- 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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(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 : Endesign Limited 89208761
Date of test : Feb. 17 2016

Specimen description : MFlor Loose Lay MT16-80626.03
Test name : # 1 Prod
File name : D:\FRPFILES\16020070.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT\2.9A\CALIB\FLX16002.CSV

Thickness (mm) : 4.95
Density (kg/m³) : 1715

Test duration : 12 minutes 29 seconds (749 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 19 seconds (739 s)
Extent of burning (mm) : 170
Critical flux at extinguishment (kW/m²) : 9.56
HF-10 (kW/m²) : 9.91
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) : 150
Flame spread at 20 minutes (mm) : Not measured
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 32.01
Time to peak light attenuation : 7 minutes 27 seconds (447 s)
Total integrated smoke (%.min) : 122.67

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 FRPSes7 software

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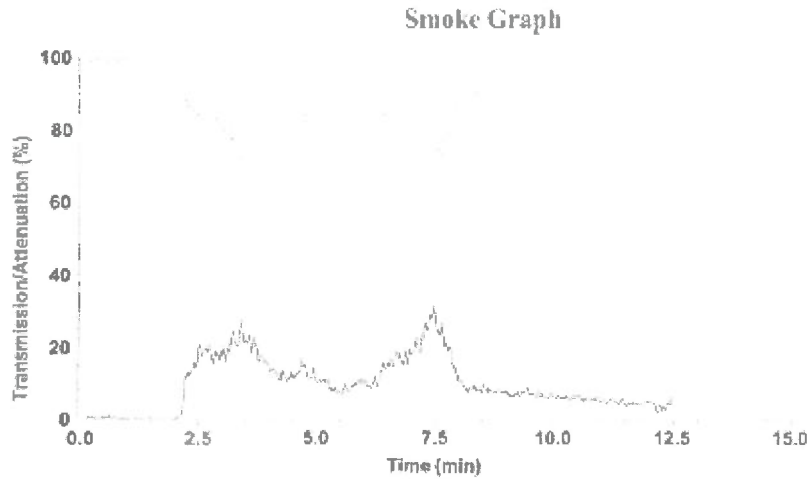
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Test name : # 1 Prod
File name : D:\FRPFILES\16020070.CSV

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	246	11.3	2.818	510	-	3.4	-
110	471	10.5	4.968	560	-	2.9	-
160	631	9.7	6.151	610	-	2.4	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.8	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.0	-	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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Report produced with the Fire Testkit Technical 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 : Endesign Limited 89208761
 Date of test : Feb. 17 2016

Specimen description : MFlor Loose Lay MT16-80626.03
 Test name : # 2 Cross
 File name : D:\FRPFILES\16020071.CSV
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16002.CSV

Thickness (mm) : 4,95
 Density (kg/m³) : 1715

Test duration : 13 minutes 54 seconds (834 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 : 13 minutes 52 seconds (832 s)
 Extent of burning (mm) : 140
 Critical flux at extinguishment (kW/m²) : 10,07
 HF-10 (kW/m²) : 10,07
 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) : 140
 Flame spread at 20 minutes (mm) : Not measured
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 28,88
 Time to peak light attenuation : 3 minutes 27 seconds (207 s)
 Total integrated smoke (%.min) : 111,87

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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Report produced with the Fire Testing Technology FRTSoft software

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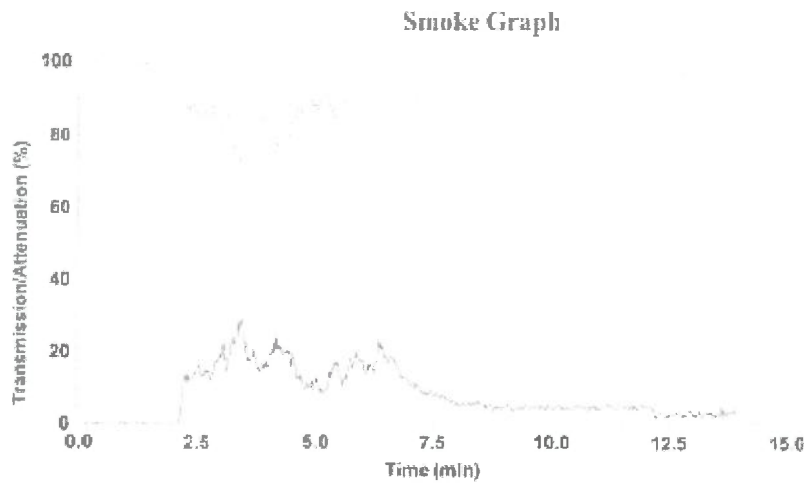
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Test name : # 2 Cross
File name : D:\FRFILES\16020071.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	249	11.5	2.853	510	-	3.4	-
110	395	10.5	4.166	560	-	2.9	-
160	-	9.7	-	610	-	2.4	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.8	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.0	-	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 : Endesign Limited 89208761
Date of test : Feb. 17 2016

Specimen description : MFlor Loose Lay MT16-80626.03
Test name : # 3 Prod
File name : D:\FRPFILES\816020074.CSV
Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16002.CSV

Thickness (mm) : 4.95
Density (kg/m³) : 1715

Test duration : 13 minutes 15 seconds (795 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 : 13 minutes 12 seconds (792 s)
Extent of burning (mm) : 140
Critical flux at extinguishment (kW/m²) : 10.07
HF-10 (kW/m²) : 10.39
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) : 120
Flame spread at 20 minutes (mm) : Not measured
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 31.98
Time to peak light attenuation : 3 minutes 28 seconds (208 s)
Total integrated smoke (%.min) : 99.82

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 for hazard of the product in use.

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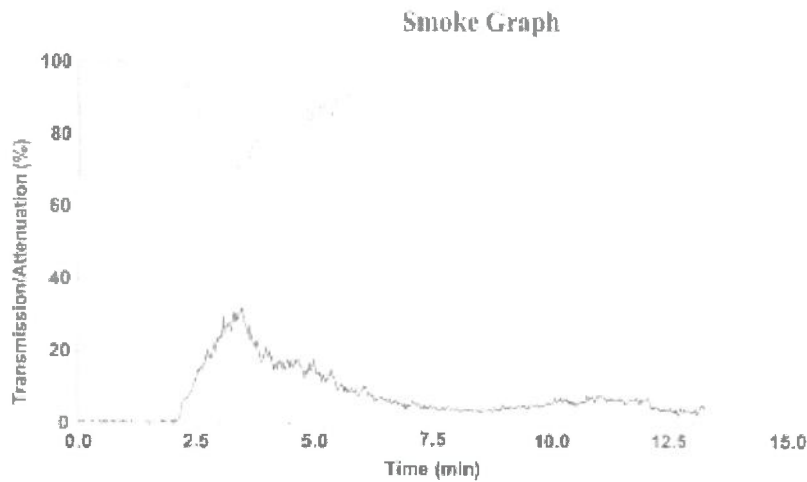
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Test name : # 3 Prod
File name : D:\FRPFILES\16020074.CSV

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	216	11.5	2.474	510	-	3.4	-
110	529	30.5	5.579	560	-	2.9	-
160	-	9.7	-	610	-	2.4	-
210	-	8.8	-	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.8	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.0	-	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 : Endesign Limited 89208761
 Date of test : Feb. 17 2016

Specimen description : MFlor Loose Lay MT16-80626.03
 Test name : # 4 Prod
 File name : D:\FRPFILES\16020075.CSV
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX16002.CSV

Thickness (mm) : 4.95
 Density (kg/m³) : 1715

Test duration : 21 minutes 54 seconds (1314 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 : 21 minutes 51 seconds (1311 s)
 Extent of burning (mm) : 220
 Critical flux at extinguishment (kW/m²) : 8.62
 HF-t0 (kW/m²) : 10.39
 HF-20 (kW/m²) : 8.62
 HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
 Flame spread at 10 minutes (mm) : 120
 Flame spread at 20 minutes (mm) : 220
 Flame spread at 30 minutes (mm) : Not measured
 Peak light attenuation (%) : 28.45
 Time to peak light attenuation : 16 minutes 17 seconds (977 s)
 Total integrated smoke (%.min) : 198.34

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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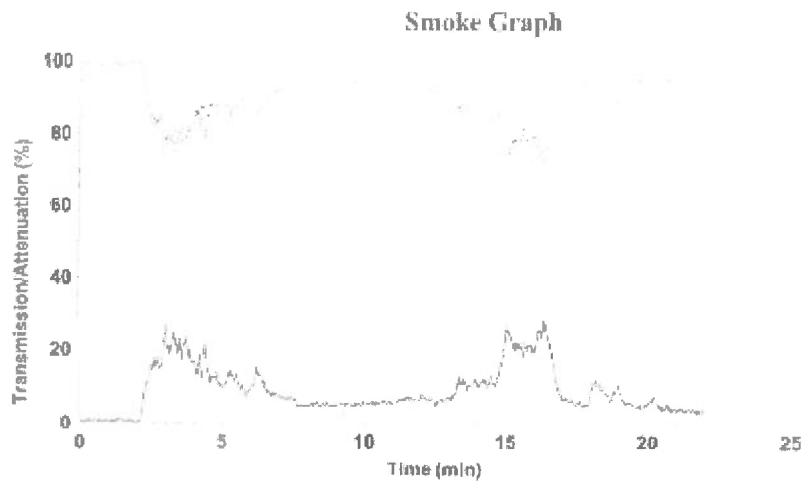
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Test name : # 4 Prod
File name : D:\FRPFILES\16020075.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m ²)	Qsh (MJ/m ²)	Position (mm)	Time (s)	Flux (kW/m ²)	Qsh (MJ/m ²)
60	234	11.5	2.681	510	-	3.4	-
110	398	10.5	4.198	560	-	2.9	-
160	846	9.7	5.247	610	-	2.4	-
210	1050	8.8	9.270	660	-	2.1	-
260	-	7.8	-	710	-	1.8	-
310	-	6.8	-	760	-	1.5	-
360	-	5.9	-	810	-	1.3	-
410	-	5.0	-	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.