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TÜVRheinland®
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Testreport

Project number: 89210549
Report number: 89210549.01br

Date
27/10/2016

Project number
89210549

Report number
89210549.01br

Phone number client
+31 (0) 24 648 53 48

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Received:
A textile floor covering, marked as: **"Axminster"**;
TÜV-reference: MT16-113956.07

A textile floor covering, marked as: **"Starbase"**;
TÜV-reference: MT16-113956.03

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 in week 26/2016.

Article
Starbase & Axminster (Glued)

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 – 8 pages

Results:
See page three and four.

Appendix:
See page five up to and including twelve.

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Article
Starbase & Axminster (Glued)

PRODUCT IDENTIFICATION

Name	: **Starbase***
Total thickness (mm)	: 6.3**
Total mass (gr/m^2)	: 1043**
Density (kg/m^3)	: 165**

** Applicant's declaration*
*** Determination by the test house after conditioning to constant mass is achieved.*

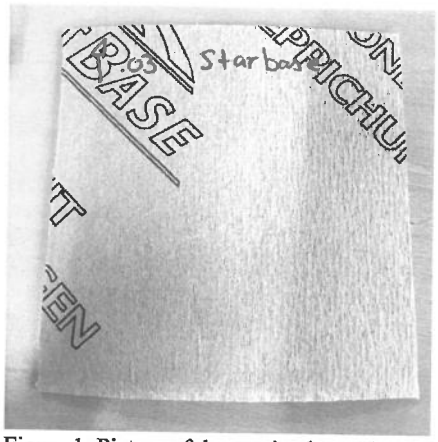

Figure 1, Picture of the received sample

Name	: **Axminster***
Pile fibre composition	: 80% Wool / 20% Polyamide*
Pile thickness (mm)	: 7.0*
Total mass (gr/m^2)	: 2.380*
Total thickness (mm)	: 9.9**
Total mass (gr/m^2)	: 2192**
Density (kg/m^3)	: 222**

** Applicant's declaration*
*** Determination by the test house after conditioning to constant mass is achieved.*

Figure 2, 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, this textile floor coverings is classified as E_{fl} (classified without further testing).

Determination of the burning behaviour using a radiant heat source
Method EN ISO 9239-1:2010

Date of testing : 17/10/2016
Conditioning time, climate : ≥ 3 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 : The tested product is glued with thomsit T440 on 14/10/2016

Test specimen, orientation	Flame spread (cm)	CRF (kW/m²)	Peak light attenuation (%)	Smoke production (%.min)
1, Length	43.0	4.9	17.1	85
2, Width	40.0	5.4	57.9	221
3, Length	42.0	5.0	32.8	145
4, Length	21.0	9.2	17.1	65
Mean, Length	**35.3**	**6.4**	**22.3**	**98**

Specimen 1, 2, 3 and 4: No flashing, transitory- or sustained flaming are observed.
Specimen 1, 3 and 4: Extinguished naturally before the end of the test duration
Specimen 2: Extinguished manually after the end of the test duration

CONCLUSION

According to EN 13501-1:2007+ A1:2009 the tested sample of the aforementioned quality **"Starbase & Axminster"**, in relation to its reaction to fire behaviour is classified: **C_{fl}**.
The additional classification in relation to smoke production is: **s1.**

The aforementioned quality meets the requirement of reaction to fire classification:
C_{fl} – s1

The classification is valid for the following end use applications:
- End use substrates of classes A1 and A2-s1,d0.
- Glued down with Thomist T440.

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

(End of report)

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APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Estillon 89210549
Date of test	: Oct. 17 2016
Specimen description	: MT16-113956.03-07 Ecobase 6 mm met Axminster tapijt
Test name	: # prod 1
File name	: D:\FRPFILES\16100020.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX16011.CSV
Thickness (mm)	: 16.15
Density (kg/m³)	: 387
Test duration	: 21 minutes 23 seconds (1283 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: adhesive
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

Test Results

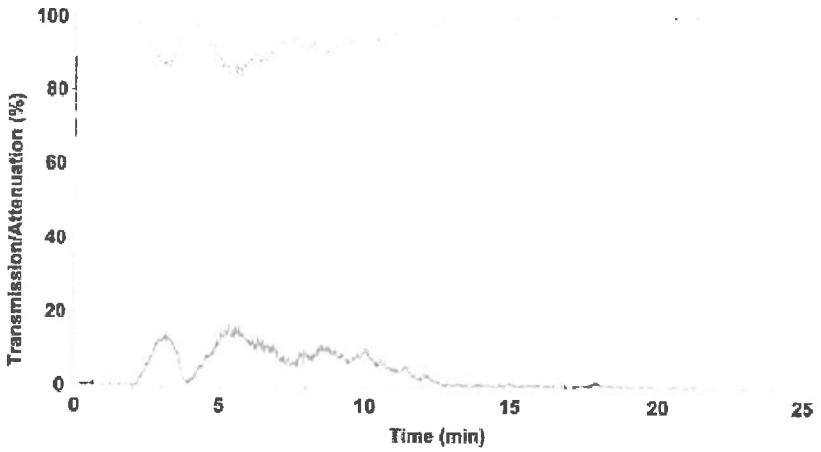
Time to ignition	: 2 minutes 03 seconds (123 s)
Time to flameout	: 21 minutes 20 seconds (1280 s)
Extent of burning (mm)	: 430
Critical flux at extinguishment (kW/m²)	: 4.86
HF-10 (kW/m²)	: 8.40
HF-20 (kW/m²)	: 4.86
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 250
Flame spread at 20 minutes (mm)	: 430
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 17.09
Time to peak light attenuation	: 5 minutes 18 seconds (318 s)
Total integrated smoke (%.min)	: 84.86
Potential classification	**: C(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.

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Smoke Graph



Test name : # prod 1
File name : D:\FRPFILES\16100020.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	139	11.1	1.548	510	-	3.6	-
110	157	10.5	1.642	560	-	3.0	-
160	181	9.9	1.791	610	-	2.5	-
210	470	9.2	4.328	660	-	2.2	-
260	626	8.2	5.134	710	-	1.8	-
310	770	7.3	5.586	760	-	1.5	-
360	904	6.2	5.593	810	-	1.2	-
410	1073	5.2	5.579	860	-	1.0	-
460	-	4.3	-	910	-	0.9	-

Comments

Specimen extinguished naturally.

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Date
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APPENDIX I: Flooring Radiant Panel Single Specimen Report

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Article
Starbase & Axminster (Glued)

Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Estillon 89210549
Date of test	: Oct. 17 2016
Specimen description	: MT16-113956.03+07 Ecobase 6 mm met Axminster tapijt
Test name	: # cross 2
File name	: D:\FRPFILES\16100021.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX16011.CSV
Thickness (mm)	: 16.15
Density (kg/m³)	: 387
Test duration	: 30 minutes (1800 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: adhesive
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

Test Results

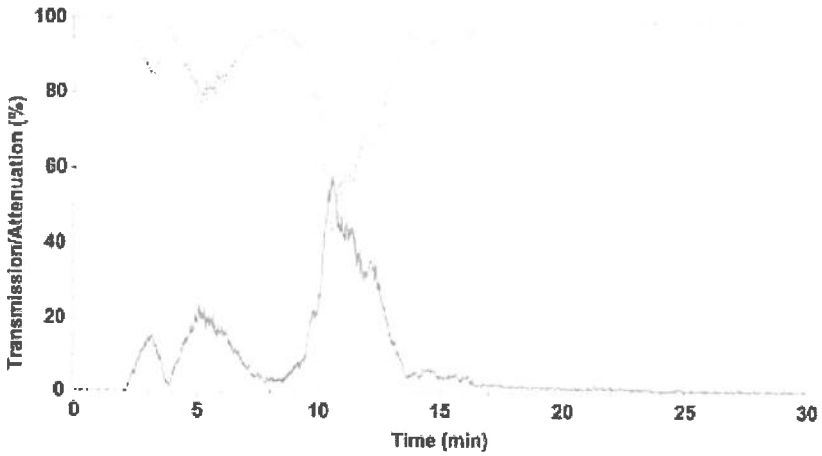
Time to ignition	: 2 minutes 04 seconds (124 s)
Time to flameout	: 30 minutes (1800 s)
Extent of burning (mm)	: 400
Critical flux at extinguishment (kW/m²)	: 5.40
HF-10 (kW/m²)	: 8.60
HF-20 (kW/m²)	: 5.40
HF-30 (kW/m²)	: 5.40
Flame spread at 10 minutes (mm)	: 240
Flame spread at 20 minutes (mm)	: 400
Flame spread at 30 minutes (mm)	: 400
Peak light attenuation (%)	: 57.91
Time to peak light attenuation	: 10 minutes 31 seconds (631 s)
Total integrated smoke (%.min)	: 221.37
Potential classification	**: C(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

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Smoke Graph



Test name : # cross 2
File name : D:\FRPFILES\16100021.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	132	11.1	1.470	510	-	3.6	-
110	157	10.5	1.642	560	-	3.0	-
160	177	9.9	1.751	610	-	2.5	-
210	660	9.2	6.078	660	-	2.2	-
260	670	8.2	5.495	710	-	1.8	-
310	681	7.3	4.941	760	-	1.5	-
360	700	6.2	4.331	810	-	1.2	-
410	-	5.2	-	860	-	1.0	-
460	-	4.3	-	910	-	0.9	-

Comments

Specimen was extinguished manually after end of test.

Date
27/10/2016

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Project number
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Report number
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Article
Starbase & Axminster (Glued)

Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Estillon 89210549
Date of test	: Oct. 17 2016
Specimen description	: MT16-113956.03+07 Ecobase 6 mm met Axminster tapijt
Test name	: # prod 3
File name	: D:\FRPFILES\16100022.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX16011.CSV
Thickness (mm)	: 16.15
Density (kg/m³)	: 387
Test duration	: 25 minutes 06 seconds (1506 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: adhesive
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

Test Results

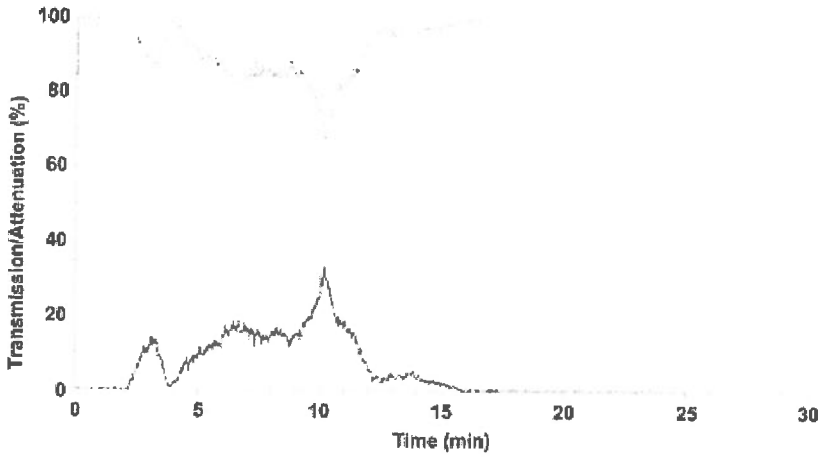
Time to ignition	: 2 minutes 04 seconds (124 s)
Time to flameout	: 25 minutes 04 seconds (1504 s)
Extent of burning (mm)	: 420
Critical flux at extinguishment (kW/m²)	: 5.03
HF-10 (kW/m²)	: 7.63
HF-20 (kW/m²)	: 5.03
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 290
Flame spread at 20 minutes (mm)	: 420
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 32.78
Time to peak light attenuation	: 10 minutes 11 seconds (611 s)
Total integrated smoke (%.min)	: 145.44
Potential classification	**: C(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.

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Smoke Graph



Test name : # prod 3
File name : D:\FRPFILES\16100022.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	134	11.1	1.492	510	-	3.6	-
110	158	10.5	1.653	560	-	3.0	-
160	180	9.9	1.781	610	-	2.5	-
210	581	9.2	5.350	660	-	2.2	-
260	610	8.2	5.003	710	-	1.8	-
310	616	7.3	4.469	760	-	1.5	-
360	669	6.2	4.139	810	-	1.2	-
410	779	5.2	4.050	860	-	1.0	-
460	-	4.3	-	910	-	0.9	-

Comments

Specimen extinguished naturally.

Date
27/10/2016

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

Project number
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Article
Starbase & Axminster (Glued)

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Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Estillon 89210549
Date of test	: Oct. 17 2016
Specimen description	: MT16-113956.03+07 Ecobase 6 mm met Axminster tapijt
Test name	: # prod 4
File name	: D:\FRPFILES\16100023.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX16011.CSV
Thickness (mm)	: 16.15
Density (kg/m³)	: 387
Test duration	: 19 minutes 11 seconds (1151 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: adhesive
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

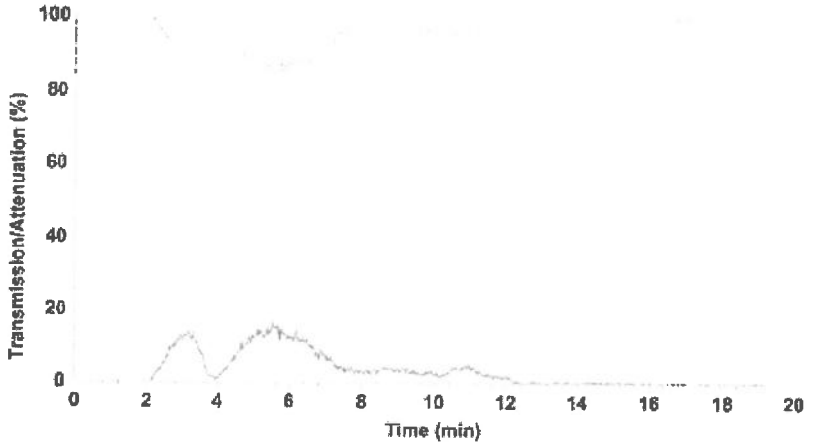
Test Results

Time to ignition	: 2 minutes 03 seconds (123 s)
Time to flameout	: 19 minutes 08 seconds (1148 s)
Extent of burning (mm)	: 210
Critical flux at extinguishment (kW/m²)	: 9.21
HF-10 (kW/m²)	: 9.35
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)	: 200
Flame spread at 20 minutes (mm)	: Not measured
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 17.07
Time to peak light attenuation	: 5 minutes 30 seconds (330 s)
Total integrated smoke (%.min)	: 65.08
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.

APPENDIX I: Flooring Radiant Panel Single Specimen Report

Smoke Graph



Test name : # prod 4
File name : D:\FRPFILES\16100023.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	135	11.1	1.503	510	-	3.6	-
110	158	10.5	1.653	560	-	3.0	-
160	180	9.9	1.781	610	-	2.5	-
210	452	9.2	4.162	660	-	2.2	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.5	-
360	-	6.2	-	810	-	1.2	-
410	-	5.2	-	860	-	1.0	-
460	-	4.3	-	910	-	0.9	-

Comments

Specimen extinguished naturally.