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### Testreport

**Project number:** 89210247  
**Report number:** 89210247.06br

**Date**  
03/02/2017

**Project number**  
89210247

**Report number**  
89210247.06br

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#### **Received:**

A floor covering (underlay system), marked as: **“Heatblok”**;  
TÜV-reference: MT16-117021.21

#### **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 15/12/2016.

#### **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)

**Article**  
Heatblok

**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.

## PRODUCT IDENTIFICATION

Applicant : Unifloor Underlay Systems  
Name : Heatblok\*  
Production direction : No production direction applicable\*

Total thickness (mm) : 6.0\*\*  
Total mass (gr/m<sup>2</sup>) : 112\*\*  
Density (kg/m<sup>3</sup>) : 19\*\*

\* 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

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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 : 03/01/2017  
 Conditioning time, climate :  $\geq 7$  days,  $23 \pm 2$  °C and  $50 \pm 5$  %  
 Description of substrate : Fibre cement board,  $8 \pm 2$  mm,  $1800 \pm 200$  kg/m<sup>3</sup>  
 conforming to EN 13238.  
 Flame application : Surface.  
 Flame application time : 15 seconds.

Orientation:	Length		
Total burning time <sup>1</sup>	15	15	15
Flame tip reaches 150 mm (s)	No	No	No
Extent of damaged area, length (mm)	157	177	178
Extent of damaged area, width (mm)	21	25	23
Material melts (yes/no)	Yes	Yes	Yes
Shrinks away <sup>2</sup> (yes/no)	Yes	Yes	Yes
Glowing <sup>3</sup> (sec)	No	No	No
Flaming debris (yes/no)	No	No	No
Ignition of filter paper (yes/no)	No	No	No

<sup>1</sup> Inclusive a flame application time of 15 or 30 seconds with surface or edge impingement

<sup>2</sup> Shrinks away from flame without being ignited

<sup>3</sup> 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 : 05/01/2017  
 Conditioning time, climate :  $\geq 7$  days,  $23 \pm 2$  °C and  $50 \pm 5$  %  
 Description of substrate : Fibre cement board,  $8 \pm 2$  mm,  $1800 \pm 200$  kg/m<sup>3</sup>  
 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	Flame spread (cm)	CRF (kW/m <sup>2</sup> )	Peak light attenuation (%)	Smoke production (%.min)
1	6.0	$\geq 10.9$	2.2	2
2	7.0	$\geq 10.9$	1.2	0.5
3	7.0	$\geq 10.9$	0.6	1
<b>Mean</b>	<b>6.7</b>	<b><math>\geq 10.9</math></b>	<b>1.3</b>	<b>1</b>

Note: according the manufacturers declaration there is no production direction applicable, therefore three samples are sufficient for classification.

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 “**Heatblok**”, in relation to its reaction to fire behaviour is classified: **B<sub>n</sub>**. The additional classification in relation to smoke production is: **s1**.

The aforementioned quality meets the requirement of reaction to fire classification:  
**B<sub>n</sub> – s1**

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. M.A. van de Vlekkert



Review:  
Mr. J. de Wolff



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(End of report)

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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 : 89210247 Unifloor  
 Date of test : Jan. 05 2017

Specimen description : MT16-117021.21 Heatblok  
 Test name : # sample 3  
 File name : D:\FRPFILES\17010012.CSV  
 Test number in series : 3

Flux calibration file name : C:\FRP\SOFT2.9A\CALIB\FLX16016.CSV

Thickness (mm) : 6  
 Density (kg/m<sup>3</sup>) : 19

Test duration : 12 minutes 12 seconds (732 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 (120 s)  
 Time to flameout : 12 minutes 10 seconds (730 s)  
 Extent of burning (mm) : 60  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10.9  
 HF-10 (kW/m<sup>2</sup>) : >= 10.9  
 HF-20 (kW/m<sup>2</sup>) : Not calculated (test duration < 20 minutes)  
 HF-30 (kW/m<sup>2</sup>) : 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 (%) : 2.23  
 Time to peak light attenuation : 2 minutes 46 seconds (166 s)  
 Total integrated smoke (%.min) : 2.24

**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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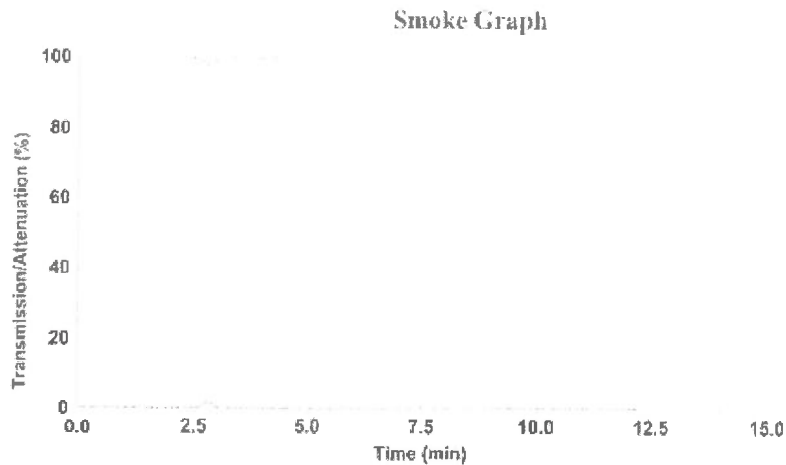
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Test name : # sample 3  
File name : D:\FRPFILES\17010012.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	418	11.1	4.629	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	10.0	-	610	-	2.6	-
210	-	9.4	-	660	-	2.2	-
260	-	8.4	-	710	-	1.9	-
310	-	7.5	-	760	-	1.6	-
360	-	6.4	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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 : 89210247 Unifloor  
 Date of test : Jan. 05 2017

Specimen description : MT16-117021.21 Heatblok  
 Test name : # sample 2  
 File name : D:\FRPFILES\17010013.CSV  
 Test number in series : 3

Flux calibration file name : C:\FRPSOFT\2.9A\CALIB\FLX16016.CSV

Thickness (mm) : 6  
 Density (kg/m<sup>3</sup>) : 19

Test duration : 12 minutes 09 seconds (729 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 (120 s)  
 Time to flameout : 12 minutes 07 seconds (727 s)  
 Extent of burning (mm) : 70  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10.9  
 HF-10 (kW/m<sup>2</sup>) : >= 10.9  
 HF-20 (kW/m<sup>2</sup>) : Not calculated (test duration < 20 minutes)  
 HF-30 (kW/m<sup>2</sup>) : Not calculated (test duration < 30 minutes)  
 Flame spread at 10 minutes (mm) : 70  
 Flame spread at 20 minutes (mm) : Not measured  
 Flame spread at 30 minutes (mm) : Not measured  
 Peak light attenuation (%) : 1.2  
 Time to peak light attenuation : 0 seconds  
 Total integrated smoke (%.min) : 0.49

**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 FRPSoft software

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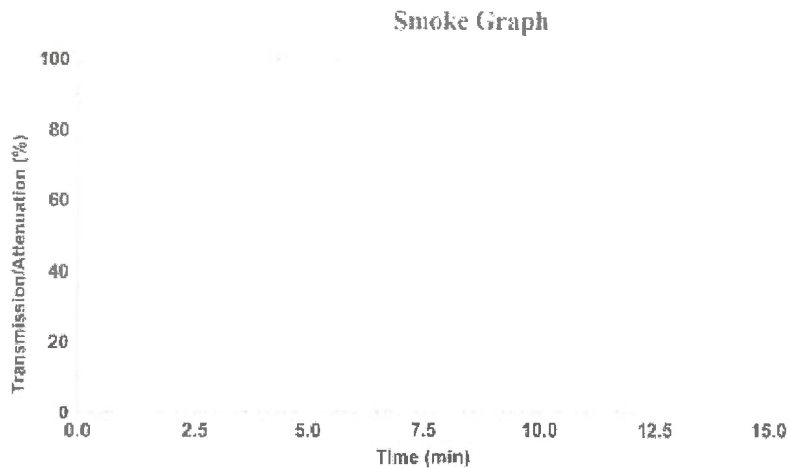
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Test name : # sample 2  
 File name : D:\FRPFILES\17010013.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	402	11.1	4.452	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	10.0	-	610	-	2.6	-
210	-	9.4	-	660	-	2.2	-
260	-	8.4	-	710	-	1.9	-
310	-	7.5	-	760	-	1.6	-
360	-	6.4	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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	: 89210247 Unifloor
Date of test	: Jan. 05 2017
Specimen description	: MT16-117021.21 Heatblok
Test name	: # sample 3
File name	: D:\FRPFILES\17010014.CSV
Test number in series	: 3
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX16016.CSV
Thickness (mm)	: 6
Density (kg/m <sup>3</sup> )	: 19
Test duration	: 12 minutes 19 seconds (739 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 13 seconds (733 s)
Extent of burning (mm)	: 70
Critical flux at extinguishment (kW/m <sup>2</sup> )	: >= 10.9
HF-10 (kW/m <sup>2</sup> )	: >= 10.9
HF-20 (kW/m <sup>2</sup> )	: Not calculated (test duration < 20 minutes)
HF-30 (kW/m <sup>2</sup> )	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 70
Flame spread at 20 minutes (mm)	: Not measured
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 0.64
Time to peak light attenuation	: 10 minutes 57 seconds (657 s)
Total integrated smoke (%.min)	: 0.57
<b>Potential classification</b>	: <b>A2(II)/B(II)</b>
<b>Smoke production classification</b>	: <b>s1</b>

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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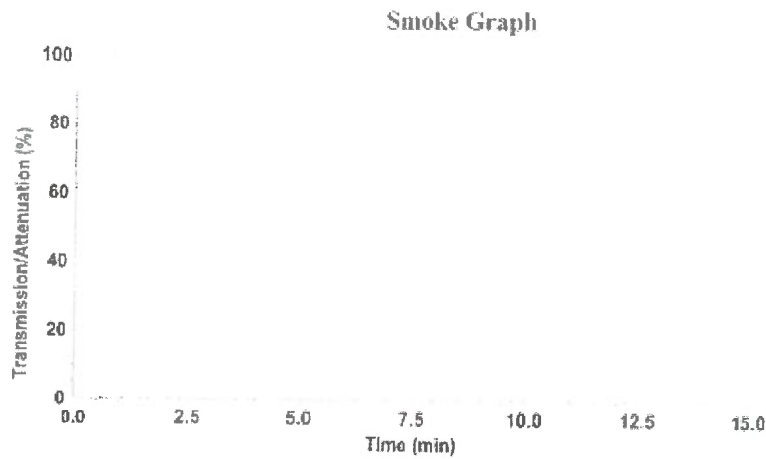
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Test name : # sample 3  
File name : D:\FRPFILES\J7010014.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	395	11.1	4.375	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	10.0	-	610	-	2.6	-
210	-	9.4	-	660	-	2.2	-
260	-	8.4	-	710	-	1.9	-
310	-	7.5	-	760	-	1.6	-
360	-	6.4	-	810	-	1.4	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	910	-	1.1	-

### Comments

Specimen extinguished naturally.

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