
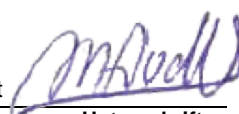



<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	<b>89215730.02br</b>	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	35930	Seite 1 von 14 <i>Page 1 of 14</i>	
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	4501064354	<b>Auftragsdatum:</b> <i>Order date:</i>	03.09.2019		
<b>Auftraggeber:</b> <i>Client:</i>	Forbo-Novilon B.V., De Holwert 12, 7741 KC COEVORDEN, The Netherlands				
<b>Prüfgegenstand:</b> <i>Test item:</i>	Resilient floor covering				
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	Safestep				
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	Determination of burning behaviour				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	EN 13501-1:2007+ A1:2009 Classification of burning behaviour <i>Test methods: Ignitability of products subjected to direct impingement of flame (EN ISO 11925-2:2010/C1:2011) and determination of the burning behaviour using a radiant heat source (EN ISO 9239-1:2010)</i>				
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	04.09.2019				
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	MT19-35930.02				
<b>Prüfzeitraum:</b> <i>Testing period:</i>	04.09.2019 – 30.10.2019				
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	Westervoortsedijk 73, 6827 AV Arnhem, Netherlands				
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland Nederland B.V				
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Siehe Sonstiges / See Other				
<b>geprüft von / tested by:</b>	<b>kontrolliert von / reviewed by:</b>				
31.10.2019 M.A. van de Vlekkert 	31.10.2019 R. Boerboom 				
<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges / Other:</b>	Test result: See clause 4 on page 5.				
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>				
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable	5 = poor N/T = not tested
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

v04



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Test Report No.:

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**Produktbeschreibung**  
**Product description**

Product identity	Safestep*	Backing	Grey coloured calendared backing*
Product type	Heterogeneous PVC floor covering*	Total thickness (mm)	2.00*
Base of product	Impregnated glass fleece web*	Top layer (mm)	0.70*

\* applicants declaration

Figure 1, Picture of the received sample (surface)



Figure 2, Picture of the received sample (back)



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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

1	<b>Construction data (indicative) of the product obtained by the testlaboratory after pre-conditioning</b> 01-4.3-P.02-322-WI01		
	Test condition	23 ± 2°C and 50 ± 4% relative humidity	
	Pre conditioning, duration	≥ 48 h & until constant mass is achieved	
	Total thickness (mm)	20.6	
	Total mass (g/m <sup>2</sup> )	14016	
	Density (kg/m <sup>3</sup> )	681	
	<i>Note: the determined construction data are used for determination of constant mass, the used testmethod is not in accordance with the determination of construction data according the specification standard. Therefore the testresults should be handled as indicative.</i>		

2	<b>Ignitability of products subjected to direct impingement of flame</b> EN ISO 11925-2:2010/C1:2011						
	Date of testing	30.10.2019					
	Pre-conditioning, climate	23 ± 2°C and 50 ± 4% relative humidity					
	Pre-conditioning, duration	≥ 48 h & until constant mass is achieved					
	Description of substrate	Particle board, thickness 20 ± 2 mm, density 680 ± 50 kg/m <sup>3</sup> conforming to EN 13238:2010					
	Flame application	Surface					
	Flame application time (s)	15					
	Requirements according EN 13501-1:2007+A1:2009	See clause 5					
	<b>Test result(s)</b>						
	Orientation	Length			Width		
	Test sample	1	2	3	1	2	3
	Ignition of the sample	Yes	Yes	Yes	Yes	Yes	Yes
	Flame tip reached 150 mm above the application point	No	No	No	No	No	No
	Duration after application when the flame tip reached the 150 mm above the application point (s)	N/A	N/A	N/A	N/A	N/A	N/A
	Extent of damaged area, length (mm)	22	22	23	19	23	20
	Extent of damaged area, width (mm)	11	11	11	12	12	11
	Material melts	Yes	Yes	Yes	Yes	Yes	Yes
	Shrinks away from flame without being ignited	No	No	No	No	No	No
	After glowing	No	No	No	No	No	No
Flaming droplets/particles which caused ignition of filter paper	No	No	No	No	No	No	

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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

<b>3</b>	<b>Determination of the burning behaviour using a radiant heat source</b> EN ISO 9239-1:2010					
	Date of testing	30.10.2019				
	Pre-conditioning, climate	23 ± 2°C and 50 ± 4% relative humidity				
	Pre-conditioning, duration	≥ 48 h & until constant mass is achieved				
	Description of substrate	Particle board, thickness 20 ± 2 mm, density 680 ± 50 kg/m <sup>3</sup> conforming to EN 13238:2010				
	Fixing method	The samples are glued to the substrate with Eurocol 640.				
	Requirements according EN 13501-1:2007+ A1:2009	See clause 5				
	<b>Test result(s)</b>					
	Test sample	1	2	3	4	Mean
	Orientation (Length: ↑, Width: T)	↑	T	↑	↑	↑
	Flame spread (cm)	18	15	19	20	<b>19</b>
	CHF / HF-30 (kW/m <sup>2</sup> )	9.6	10.0	9.5	9.4	<b>9.5</b>
	Maximum light attenuation (%)	62.2	63.1	70.9	65.1	<b>66.1</b>
Smoke production (%.min)	135	137	157	136	<b>143</b>	
Observations: 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.						

<b>4</b>	<b>Classification of burning behaviour</b> EN 13501-1:2007+A1:2009	
	The product, <b>Safestep</b> in relation to its reaction to fire behaviour is classified:	<b>B<sub>fl</sub></b>
	The additional classification in relation to smoke production is:	<b>s1</b>
	<b>Reaction to fire classification : B<sub>fl</sub> – s1</b>	
	Field of application <ul style="list-style-type: none"> <li>- As a floor covering in accordance with the nominal product parameters given on page 3.</li> <li>- On end use substrates of wood and of classes A1 and A2-s1,d0 according to EN 13238:2010.</li> <li>- Glued down with Eurocol 640.</li> </ul>	
Statements <ul style="list-style-type: none"> <li>- This document does not represent type approval or certification of the product.</li> <li>- 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.</li> <li>- The validity of this report will expire directly after alterations or modifications of the examined product (combination)(s) and/or the criteria.</li> </ul>		

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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
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5	<b>Potential classes of reaction to fire performance for floorings</b>			
	EN 13501-1:2007+A1:2009			
	Class	Test method(s)	Classification criteria	
	A1 <sub>fi</sub>	EN ISO 1182 <sup>a</sup> and	$\Delta T \leq 30 \text{ °C}$ ; and $\Delta m \leq 50 \%$ ; and $t_f = 0$ (i.e. no sustained flaming)	-
		EN ISO 1716	$PCS \leq 2.0 \text{ MJ/kg}^a$ and $PCS \leq 2.0 \text{ MJ/m}^2^b$ and $PCS \leq 1.4 \text{ MJ/m}^2^c$ and $PCS \leq 2.0 \text{ MJ/kg}^d$	-
	A2 <sub>fi</sub>	EN ISO 1182 <sup>a</sup> or	$\Delta T \leq 50 \text{ °C}$ and $\Delta m \leq 50 \%$ and $t_f \leq 20 \text{ s}$	-
		EN ISO 1716 and	$PCS \leq 3.0 \text{ MJ/kg}^a$ and $PCS \leq 4.0 \text{ MJ/m}^2^b$ and $PCS \leq 4.0 \text{ MJ/m}^2^c$ and $PCS \leq 3.0 \text{ MJ/kg}^d$	-
		EN ISO 9239-1 <sup>e</sup>	$CHF \geq 8.0 \text{ kW/m}^2$	Smoke production <sup>g</sup>
	B <sub>fi</sub>	EN ISO 9239-1 <sup>e</sup> and	$CHF \geq 8.0 \text{ kW/m}^2$	Smoke production <sup>g</sup>
		EN ISO 11925-2 <sup>h</sup> : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
	C <sub>fi</sub>	EN ISO 9239-1 <sup>e</sup> and	$CHF \geq 4.5 \text{ kW/m}^2$	Smoke production <sup>g</sup>
		EN ISO 11925-2 <sup>h</sup> : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
	D <sub>fi</sub>	EN ISO 9239-1 <sup>e</sup> and	$CHF \geq 3.0 \text{ kW/m}^2$	Smoke production <sup>g</sup>
		EN ISO 11925-2 <sup>h</sup> : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
E <sub>fi</sub>	EN ISO 11925-2 <sup>h</sup> : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-	
F <sub>fi</sub>	No performance determined			
<sup>a</sup>	For homogeneous products and substantial components of non-homogeneous products.			
<sup>b</sup>	For any external non-substantial component of non-homogeneous products.			
<sup>c</sup>	For any internal non-substantial component of non-homogeneous products.			
<sup>d</sup>	For the product as a whole.			
<sup>e</sup>	Test duration = 30 min.			
<sup>f</sup>	Critical flux is defined as the radiant flux at which the flame extinguishes or the radiant flux after a test period of 30 min, whichever is the lower (i.e. the flux corresponding with the furthest extent of spread of flame).			
<sup>g</sup>	s1 = Smoke $\leq 750 \%$ minutes; s2 = not s1.			
<sup>h</sup>	Under conditions of surface flame attack and, if appropriate to the end use application of the product, edge flame attack.			



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Absatz	EN 13501-1:2007+ A1:2009	Messergebnisse - Bemerkungen	Bewertung
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<b>6</b>	<p style="text-align: center;"><b>Flooring Radiant Panel Single Specimen Report</b></p> <p style="font-size: small;">Report produced with the Fire Testing Technology FRPSoft software <span style="float: right;">page 1</span></p> <h3 style="text-align: center;">Flooring Radiant Panel Single Specimen Report</h3> <p>Standard : EN ISO 9239-1:2010          Laboratory : TÜV Rheinland Nederland B.V.          Sponsor : Forbo 89215730          Date of test : Oct. 30 2019</p> <p>Specimen description : Safestep MT19-35930.02          Test name : #prod 1          File name : D:\FRPFILES\19100069.CSV          Test number in series : 4</p> <p>Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX19002.CSV</p> <p>Thickness (mm) : 20.6          Density (kg/m³) : 681</p> <p>Test duration : 12 minutes 55 seconds (775 s)          Substrate used? : Yes          Substrate : Particle board          Fixing method : adhesive          Conditioned? : Yes          Conditioning temp. (°C) : 23          Conditioning RH (%) : 50</p> <p><b>Test Results</b></p> <p>Time to ignition : 2 minutes 04 seconds (124 s)          Time to flameout : 12 minutes 53 seconds (773 s)          Extent of burning (mm) : 180          Critical flux at extinguishment (kW/m²) : 9.64          HF-10 (kW/m²) : 9.64          HF-20 (kW/m²) : Not calculated (test duration &lt; 20 minutes)          HF-30 (kW/m²) : Not calculated (test duration &lt; 30 minutes)          Flame spread at 10 minutes (mm) : 180          Flame spread at 20 minutes (mm) : Not measured          Flame spread at 30 minutes (mm) : Not measured          Peak light attenuation (%) : 62.18          Time to peak light attenuation : 3 minutes 51 seconds (231 s)          Total integrated smoke (%.min) : 135.19</p> <p><b>Potential classification</b> : A2(f)/B(f)  <b>Smoke production classification</b> : s1</p> <p style="font-size: x-small;">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.</p>
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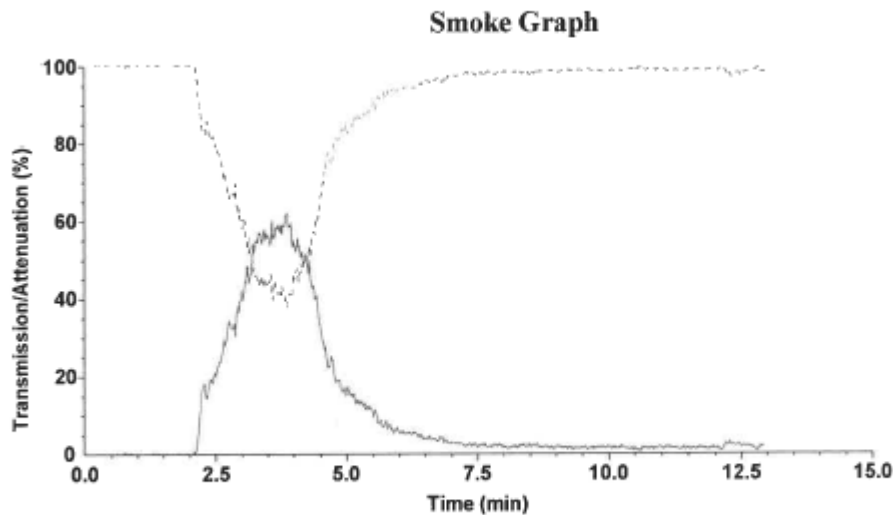
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Absatz	EN 13501-1:2007+ A1:2009	Messergebnisse - Bemerkungen	Bewertung
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Report produced with the Fire Testing Technology FRPSoft software

page 2



Test name : #prod 1  
File name : D:\FRPFILES\19100069.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	165	11.1	1.833	510	-	3.6	-
110	198	10.4	2.069	560	-	3.0	-
160	226	9.9	2.238	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	910	-	1.0	-

### 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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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

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page 1

## Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : Forbo 89215730  
Date of test : Oct. 30 2019

Specimen description : Safestep MT19-35930.02  
Test name : #cross 2  
File name : D:\FRPFILES\19100070.CSV  
Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9\CALIB\FLX19002.CSV

Thickness (mm) : 20.6  
Density (kg/m<sup>3</sup>) : 681

Test duration : 12 minutes 26 seconds (746 s)  
Substrate used? : Yes  
Substrate : Particle board  
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 24 seconds (744 s)  
Extent of burning (mm) : 150  
Critical flux at extinguishment (kW/m<sup>2</sup>) : 10.01  
HF-10 (kW/m<sup>2</sup>) : 10.01  
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) : 150  
Flame spread at 20 minutes (mm) : Not measured  
Flame spread at 30 minutes (mm) : Not measured  
Peak light attenuation (%) : 63.06  
Time to peak light attenuation : 3 minutes 31 seconds (211 s)  
Total integrated smoke (%.min) : 136.83

Potential classification : A2(II)/B(I)  
Smoke production classification : s1

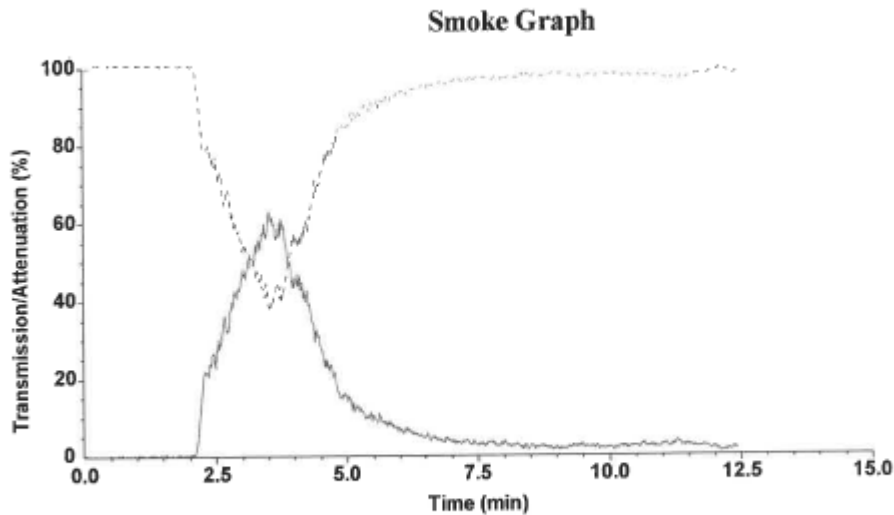
These results relate only to the behaviour of the specimens of the product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Prüfbericht-Nr.: 89215730.02br  
Test Report No.:

Absatz	EN 13501-1:2007+ A1:2009	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

Report produced with the Fire Testing Technology FRPSoft software

page 2



Test name : #cross 2  
File name : D:\FRPFILES\19100070.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	162	11.1	1.799	510	-	3.6	-
110	194	10.4	2.027	560	-	3.0	-
160	-	9.9	-	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	910	-	1.0	-

### 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.

Prüfbericht-Nr.: 89215730.02br  
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Absatz	EN 13501-1:2007+ A1:2009	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

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 : Forbo 89215730  
 Date of test : Oct. 30 2019

Specimen description : Safestep MT19-35930.02  
 Test name : #prod 3  
 File name : D:\FRPFILES\19100071.CSV  
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9\CALIB\FLX19002.CSV

Thickness (mm) : 20.6  
 Density (kg/m<sup>3</sup>) : 681

Test duration : 12 minutes 10 seconds (730 s)  
 Substrate used? : Yes  
 Substrate : Particle board  
 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) : 190  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.50  
 HF-10 (kW/m<sup>2</sup>) : 9.50  
 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) : 190  
 Flame spread at 20 minutes (mm) : Not measured  
 Flame spread at 30 minutes (mm) : Not measured  
 Peak light attenuation (%) : 70.87  
 Time to peak light attenuation : 3 minutes 43 seconds (223 s)  
 Total integrated smoke (%.min) : 156.61

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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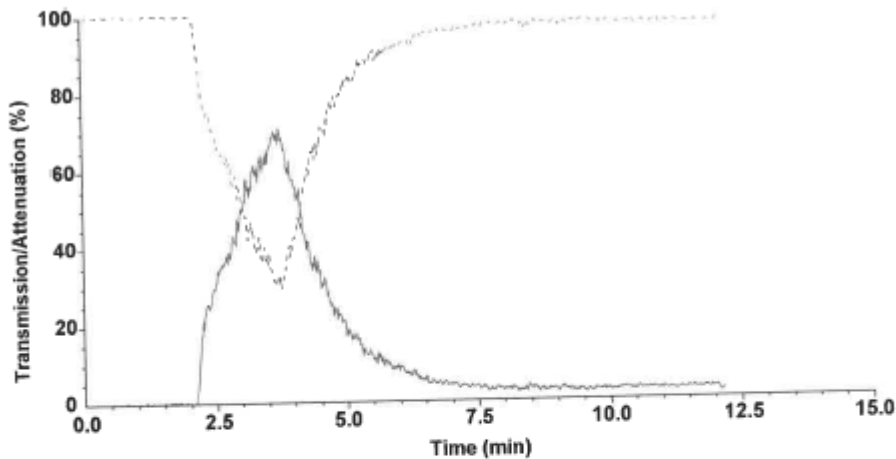
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Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

Report produced with the Fire Testing Technology FRPSoft software

page 2

### Smoke Graph



Test name : #prod 3  
File name : D:\FRPFILES\19100071.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	153	11.1	1.700	510	-	3.6	-
110	178	10.4	1.860	560	-	3.0	-
160	207	9.9	2.050	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	910	-	1.0	-

### 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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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

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 : Forbo 89215730  
 Date of test : Oct. 30 2019

Specimen description : Safestep MT19-35930.02  
 Test name : #prod 4  
 File name : D:\FRPFILES\19100072.CSV  
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX19002.CSV

Thickness (mm) : 20.6  
 Density (kg/m<sup>3</sup>) : 681

Test duration : 12 minutes 05 seconds (725 s)  
 Substrate used? : Yes  
 Substrate : Particle board  
 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 01 seconds (721 s)  
 Extent of burning (mm) : 200  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : 9.37  
 HF-10 (kW/m<sup>2</sup>) : 9.37  
 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) : 200  
 Flame spread at 20 minutes (mm) : Not measured  
 Flame spread at 30 minutes (mm) : Not measured  
 Peak light attenuation (%) : 65.14  
 Time to peak light attenuation : 3 minutes 50 seconds (230 s)  
 Total integrated smoke (%.min) : 136.2

**Potential classification** : A2(ñ)/B(ñ)  
**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.

Prüfbericht-Nr.: 89215730.02br  
Test Report No.:

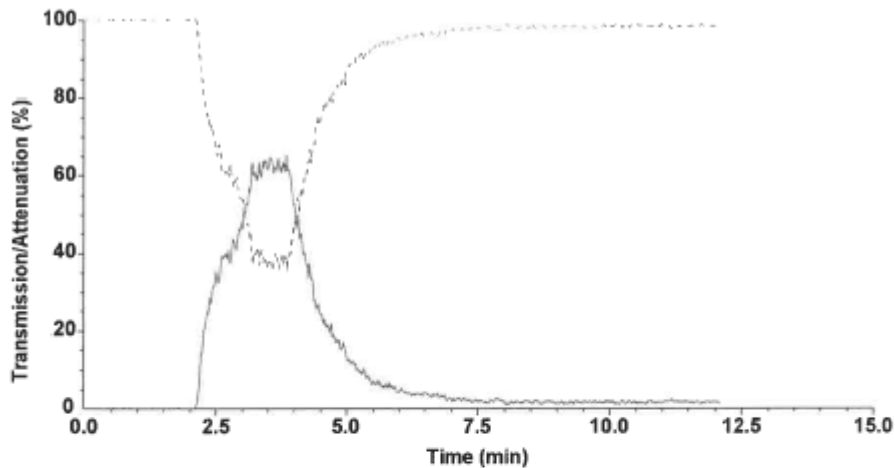
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Absatz	<b>EN 13501-1:2007+ A1:2009</b>	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

Report produced with the Fire Testing Technology FRPSoft software

page 2

### Smoke Graph



Test name : #prod 4  
File name : D:\FRPFILES\19100072.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	148	11.1	1.644	510	-	3.6	-
110	178	10.4	1.860	560	-	3.0	-
160	208	9.9	2.060	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.1	-	860	-	1.2	-
460	-	4.2	-	910	-	1.0	-

### 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.