

Test report no.: <i>Testrapport nr.:</i>	89218579.06br	Order No.: <i>Opdracht nr.:</i>	218579
Client Reference No.: <i>Klantreferentie nr.:</i>	N/A	Order date: <i>Opdrachtdatum:</i>	12.03.2021
Client: <i>Klant:</i>	Unifloor Underlay Systems, Arnsbergstraat 4, 7418 EZ Deventer, The Netherlands		
Test item: <i>Testvoorwerp:</i>	Linoleum on underlayment		
Identification/ Type No.: <i>Benaming / Type nr.:</i>	Jumpax HD + linoleum 2 mm		
Order content: <i>Inhoud opdracht:</i>	Classification of burning behaviour		
Test specification: <i>Testomschrijving:</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>		
Date of sample receipt: <i>Ontvangstdatum monster:</i>	18.03.2021		
Test sample No.: <i>Testproefstuk nr.:</i>	MT21-218579.06		
Testing period: <i>Testperiode:</i>	18.03.2021 - 13.04.2021		
Place of testing: <i>Testlocatie:</i>	Westervoortsedijk 73, 6827 AV Arnhem		
Testing laboratory: <i>Testlaboratorium:</i>	TÜV Rheinland Nederland B.V.		
Test result*: <i>Testresultaat*:</i>	See Other		
tested by: <i>getest door:</i>	 _____ <small>Ordeklendebor: M. H. van de Vekert</small>	authorized by: <i>geautoriseerd door:</i>	 _____ <small>Ordeklendebor: J. W. W. W. W. W.</small>
Date: 16.04.2021 <i>Datum:</i>		Issue Date: 16.04.2021 <i>Datum uitgave:</i>	
Position / functie:	jr. Engineer	Position / functie:	Expert
Others / <i>Andere:</i>	Test result: See clause 4 on page 5.		
Condition of the test item at delivery: <i>Toestand van het test voorwerp bij ontvangst:</i>	Test item complete and undamaged		
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested			
* Legenda: P(ass) = voldoet aan test omschrijving F(ail) = voldoet niet aan test omschrijving N/A = niet van toepassing N/T = niet getest			
<p>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.</p> <p><i>Dit testrapport heeft alleen betrekking op het voorgenoemde test voorwerp. Zonder toestemming van het testcentrum mag dit testrapport niet in delen worden vermenigvuldigd. Dit keuringsrapport geeft geen recht op het dragen van enig keurmerk.</i></p>			

Test report no.: 89218579.06br
Testrapport nr.:

Page 2 of 12
Pagina 2 van 12

Remarks
Opmerkingen

1	<p>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request. For the influence of the measuring uncertainties on the results, reference is made to the validation of the respective methods.</p> <p><i>De apparatuur welke tijdens de gespecificeerde testperiode is gebruikt, is gekalibreerd volgens ons kalibratieprogramma. De apparatuur voldoet aan de eisen welke zijn opgenomen in de relevante normen. De traceerbaarheid van de gebruikte testapparatuurs is gewaarborgd door naleving van de voorschriften in ons kwaliteitsmanagementsysteem. Gedetailleerde informatie over testomstandigheden, apparatuur en meetonzekerheid is beschikbaar in het testlaboratorium en kan op verzoek worden verstrekt. Voor de invloed van de meetonzekerheden op de resultaten wordt verwezen naar de validatie van de respectievelijke methode c.q. verrichting</i></p>
2	<p>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Zoals contractueel overeengekomen is dit document enkel digitaal ondertekend. TÜV Rheinland heeft niet geverifieerd en kan niet verifiëren welke wettelijke of andere vereisten van toepassing zijn op dit document. Een dergelijke verificatie valt onder de verantwoordelijkheid van de gebruiker van het document. Op verzoek van de opdrachtgever kan TÜV Rheinland de geldigheid van de digitale handtekening bevestigen door een apart document. Een dergelijk verzoek moet worden gericht aan onze verkoopafdeling. Voor een dergelijke extra service zal een milieutoeslag in rekening worden gebracht.</i></p>
3	<p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Tests clauses marked with ^a are performed under ISO 17025 accreditation. Deviations of testing specification(s), test locations or customer requirements are listed in specific test clause in the report. This report is only to be read as a whole. No opinions or interpretation are included in this report. This test report consists of multiple pages and is only to be read as a whole. The number of pages can be seen in the header on the top right of each page, the report ends when the last page is reached. TÜV Rheinland Nederland B.V. is solely responsible for the content.</p> <p><i>Test onderdelen welke met * zijn gemarkeerd zijn uitbesteed aan gekwalificeerde onderaannemers en zijn beschreven in het respectievelijke test onderdeel van dit rapport. Test onderdelen welke met ^a zijn gemarkeerd zijn onder ISO 17025 accreditatie uitgevoerd. Afwijkingen van testspecificatie(s), testlocaties of klant eisen zijn vermeld in het van toepassing zijnde onderdeel in het rapport. Het rapport dient als geheel te worden gelezen. Er zijn geen opinies en interpretaties opgenomen binnen het rapport. Dit rapport bestaat uit meerdere pagina's en dient al geheel gelezen te worden. Het aantal pagina's is rechtsboven in de koptekst van dit rapport vermeld en eindigt wanneer de laatste pagina is bereikt. TÜV Rheinland Nederland is als enige verantwoordelijk voor de inhoud van het rapport.</i></p>
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Test report no.: 89218579.06br
Testrapport nr.:

Page 3 of 12
Pagina 3 van 12

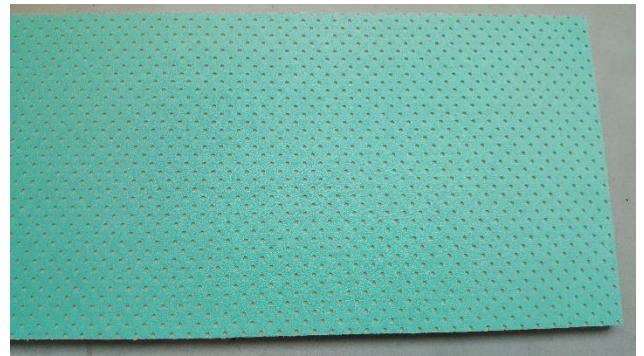
Product description
Product omschrijving

1	Product details: <i>Product details:</i>	Product name: Jumpax HD + linoleum 2 mm Test item: Linoleum on underlayment: 4 mm MDF + 4 mm MDF
2	Other: <i>Andere:</i>	Test sample(s), as well sample information, description, product details and intended usage was provided by customer.
3	Test sample obtaining: <i>Selectie van het proefstuk:</i>	<input checked="" type="checkbox"/> Sending by customer <input type="checkbox"/> Sampling by TÜV Rheinland Group <input type="checkbox"/> others:

Figure 1: Picture of the received sample (surface)



Figure 2: Picture of the received sample (back)



Test report no.: 89218579.06br Testrapport nr.:			
Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaat

1	Construction data (indicative) of the product obtained by the testlaboratory after pre-conditioning 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)	13.0	
	Total mass (g/m ²)	9972	
	Density (kg/m ³)	765	
	<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	Ignitability of products subjected to direct impingement of flame EN ISO 11925-2:2010/C1:2011			
	Date of testing	30.03.2021		
	Pre-conditioning, climate	23 ± 2°C and 50 ± 4% relative humidity		
	Pre-conditioning, duration	≥ 48 h & until constant mass is achieved		
	Description of substrate	Fibre cement board, thickness 8 ± 2 mm, density 1800 ± 200 kg/m ³ conforming to EN 13238:2010		
	Flame application	Surface		
	Flame application time (s)	15		
	Requirements according EN 13501-1:2007+A1:2009	See clause 5		
	Test result(s)			
	Orientation*	N/A		
	Test sample	1	2	3
	Ignition of the sample	Yes	Yes	Yes
	Flame tip reached 150 mm above the application point	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
	Extent of damaged area, length (mm)	38	44	45
	Extent of damaged area, width (mm)	11	11	11
	Material melts	Yes	Yes	Yes
	Shrinks away from flame without being ignited	No	No	No
	After glowing	No	No	No
	Flaming droplets/particles which caused ignition of filter paper	No	No	No
<i>* No length or width direction applicable.</i>				

Test report no.: 89218579.06br Testrapport nr.:			
Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaat

3	Determination of the burning behaviour using a radiant heat source EN ISO 9239-1:2010				
	Date of testing	13.04.2021			
	Pre-conditioning, climate	23 ± 2°C and 50 ± 4% relative humidity			
	Pre-conditioning, duration	≥ 48 h & until constant mass is achieved			
	Description of substrate	Fibre cement board, thickness 8 ± 2 mm, density 1800 ± 200 kg/m ³ conforming to EN 13238:2010			
	Fixing method	None, samples are tested loose laid on the substrate			
	Requirements according EN 13501-1:2007+ A1:2009	See clause 5			
	Test result(s)				
	Test sample	1	2	3	Mean
	Orientation*	N/A	N/A	N/A	N/A
	Flame spread (cm)	36	38	41	38
	CHF / HF-30 (kW/m ²)	5.9	5.5	5.0	5.5
	Maximum light attenuation (%)	54.2	55.1	57.9	55.7
	Smoke production (%.min)	353	394	442	396
* No length or width direction applicable. Observations: Specimen 1, 2, and 3: No flashing is observed. Specimen 1, 2, and 3: Extinguished naturally before the end of the test duration.					

4	Classification of burning behaviour EN 13501-1:2007+A1:2009 ^a	
	The product, Jumpax HD + linoleum 2 mm , in relation to its reaction to fire behaviour is classified:	C_{fl}
	The additional classification in relation to smoke production is:	s1
	Reaction to fire classification : C_{fl} – s1	
	Field of application <ul style="list-style-type: none"> - As a floor covering in accordance with the nominal product parameters given on page 3. - On end use substrates of classes A1 and A2-s1,d0 according to EN 13238:2010. - Any way of fixation, glued down or loose laid. 	
	Statements <ul style="list-style-type: none"> - This document does not represent type approval or certification of the product. - 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 validity of this report will expire directly after alterations or modifications of the examined product (combination)(s) and/or the criteria. 	

Test report no.: 89218579.06br
Testrapport nr.:

Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaat
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5	Potential classes of reaction to fire performance for floorings EN 13501-1:2007+A1:2009			
	Class	Test method(s)	Classification criteria	Additional classifications
A1 _{fl}		EN ISO 1182 ^a and	$\Delta T \leq 30 \text{ }^\circ\text{C}$; 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 _{fl}		EN ISO 1182 ^a or	$\Delta T \leq 50 \text{ }^\circ\text{C}$ 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 ^e	$CHF \geq 8.0 \text{ kW/m}^2$	Smoke production ^g
B _{fl}		EN ISO 9239-1 ^e and	$CHF \geq 8.0 \text{ kW/m}^2$	Smoke production ^g
		EN ISO 11925-2 ^h : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
C _{fl}		EN ISO 9239-1 ^e and	$CHF \geq 4.5 \text{ kW/m}^2$	Smoke production ^g
		EN ISO 11925-2 ^h : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
D _{fl}		EN ISO 9239-1 ^e and	$CHF \geq 3.0 \text{ kW/m}^2$	Smoke production ^g
		EN ISO 11925-2 ^h : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
E _{fl}		EN ISO 11925-2 ^h : Exposure = 15 s	$F_s \leq 150 \text{ mm}$ within 20 s	-
F _{fl}		EN ISO 11925-2 ^h : Exposure = 15 s	$F_s > 150 \text{ mm}$ within 20 s	-
^a For homogeneous products and substantial components of non-homogeneous products. ^b For any external non-substantial component of non-homogeneous products. ^c For any internal non-substantial component of non-homogeneous products. ^d For the product as a whole. ^e Test duration = 30 min. ^f 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). ^g s1 = Smoke $\leq 750 \%$ minutes; s2 = not s1. ^h Under conditions of surface flame attack and, if appropriate to the end use application of the product, edge flame attack.				

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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 : Unifloor 89218579 MT21-218579.06
Date of test : Apr. 13 2021

Specimen description : Jumpax HD + linoleum 2mm
Test name : No direction #1
File name : D:\FRPFILES\21040027.CSV
Test number in series : 3

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX21001.CSV

Thickness (mm) : 13
Density (kg/m³) : 765

Test duration : 17 minutes 53 seconds (1073 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : none
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

Test Results

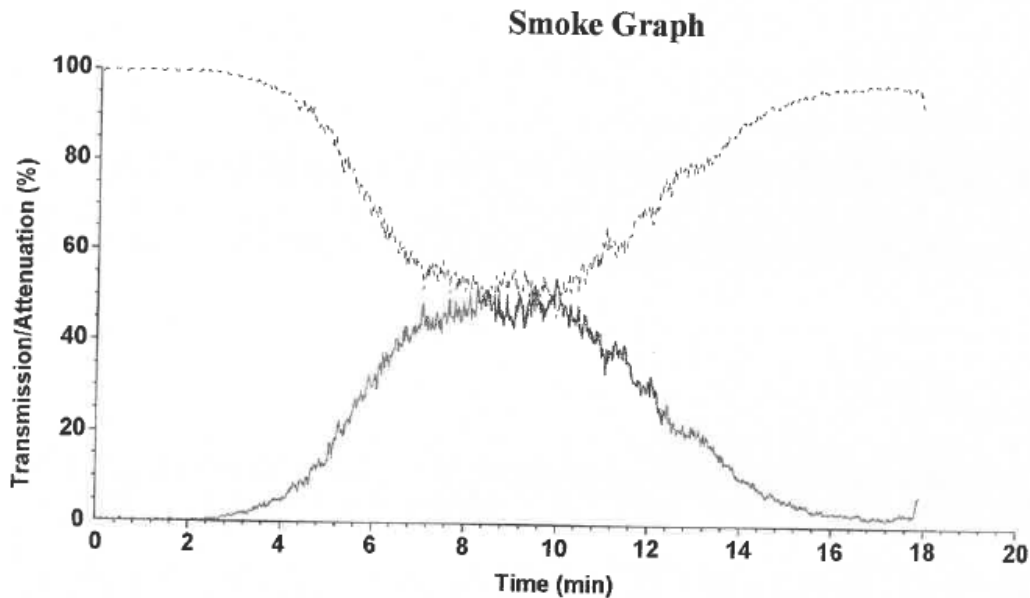
Time to ignition : 2 minutes 04 seconds (124 s)
Time to flameout : 17 minutes 48 seconds (1068 s)
Extent of burning (mm) : 360
Critical flux at extinguishment (kW/m²) : 5.86
HF-10 (kW/m²) : 6.98
HF-20 (kW/m²) : Not calculated (test duration < 20 minutes)
HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm) : 300
Flame spread at 20 minutes (mm) : Not measured
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 54.19
Time to peak light attenuation : 9 minutes 57 seconds (597 s)
Total integrated smoke (%.min) : 353.18

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.

Report produced with the Fire Testing Technology FRPSoft software

page 2



Test name : No direction #1
 File name : D:\FRPFILES\21040027.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	256	11.4	2.911	510	-	3.5	-
110	329	10.5	3.443	560	-	3.0	-
160	396	9.7	3.829	610	-	2.6	-
210	473	8.8	4.141	660	-	2.2	-
260	531	7.7	4.109	710	-	1.9	-
310	645	6.8	4.376	760	-	1.7	-
360	916	5.9	5.365	810	-	1.6	-
410	-	5.0	-	860	-	1.3	-
460	-	4.2	-	910	-	1.2	-

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.

Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2010
Laboratory : TÜV Rheinland Nederland B. V.
Sponsor : Unifloor 89218579 MT21-218579.06
Date of test : Apr. 13 2021

Specimen description : Jumpax HD+ linoleum 2 mm
Test name : No direction # 2
File name : D:\FRPFILES\21040028.CSV
Test number in series : 3

Flux calibration file name : C:\FRPSOFT2.9A\CALIB\FLX21001.CSV

Thickness (mm) : 13
Density (kg/m³) : 765

Test duration : 22 minutes 11 seconds (1331 s)
Substrate used? : Yes
Substrate : Calcium silicate
Fixing method : none
Conditioned? : Yes
Conditioning temp. (°C) : 23
Conditioning RH (%) : 50

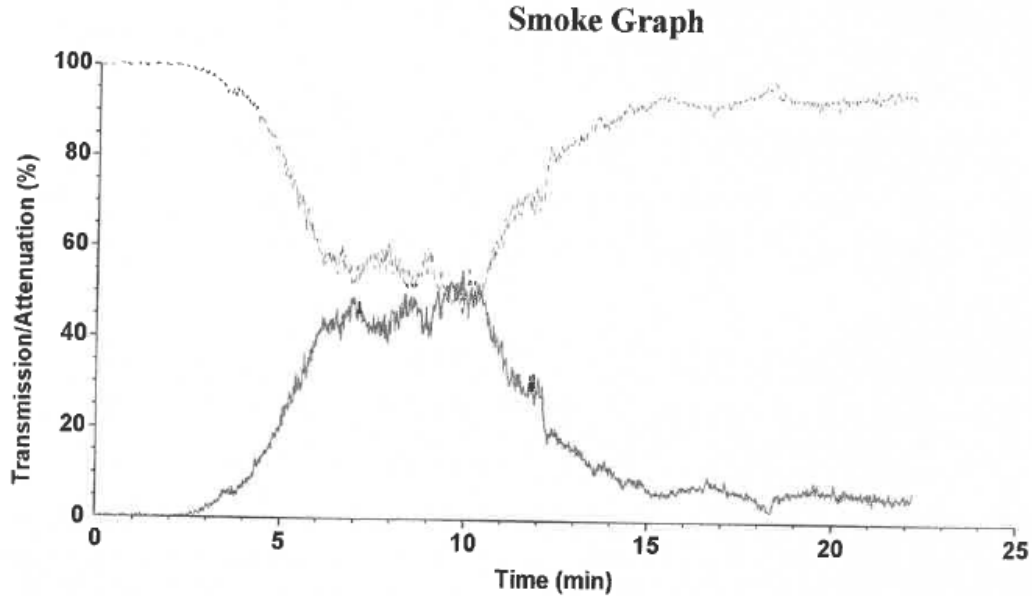
Test Results

Time to ignition : 2 minutes 04 seconds (124 s)
Time to flameout : 22 minutes 05 seconds (1325 s)
Extent of burning (mm) : 380
Critical flux at extinguishment (kW/m²) : 5.52
HF-10 (kW/m²) : 6.98
HF-20 (kW/m²) : 5.52
HF-30 (kW/m²) : Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm) : 300
Flame spread at 20 minutes (mm) : 380
Flame spread at 30 minutes (mm) : Not measured
Peak light attenuation (%) : 55.13
Time to peak light attenuation : 9 minutes 55 seconds (595 s)
Total integrated smoke (%.min) : 394.22

Potential classification : C(fl)
Smoke production classification : s1

Report produced with the Fire Testing Technology FRPSoft software

page 2



Test name : No direction # 2
File name : D:\FRPFILES\21040028.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	262	11.4	2.979	510	-	3.5	-
110	349	10.5	3.652	560	-	3.0	-
160	375	9.7	3.626	610	-	2.6	-
210	460	8.8	4.027	660	-	2.2	-
260	543	7.7	4.202	710	-	1.9	-
310	644	6.8	4.369	760	-	1.7	-
360	850	5.9	4.978	810	-	1.6	-
410	-	5.0	-	860	-	1.3	-
460	-	4.2	-	910	-	1.2	-

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.

Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Unifloor 89218579 MT21-218579.06
Date of test	: Apr. 13 2021
Specimen description	: Jumpax HD + linoleum 2 mm
Test name	: No direction #3
File name	: D:\FRPFILES\21040029.CSV
Test number in series	: 3
Flux calibration file name	: C:\FRPSOFT2.9\CALIB\FLX21001.CSV
Thickness (mm)	: 13
Density (kg/m ³)	: 765
Test duration	: 24 minutes 42 seconds (1482 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: none
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

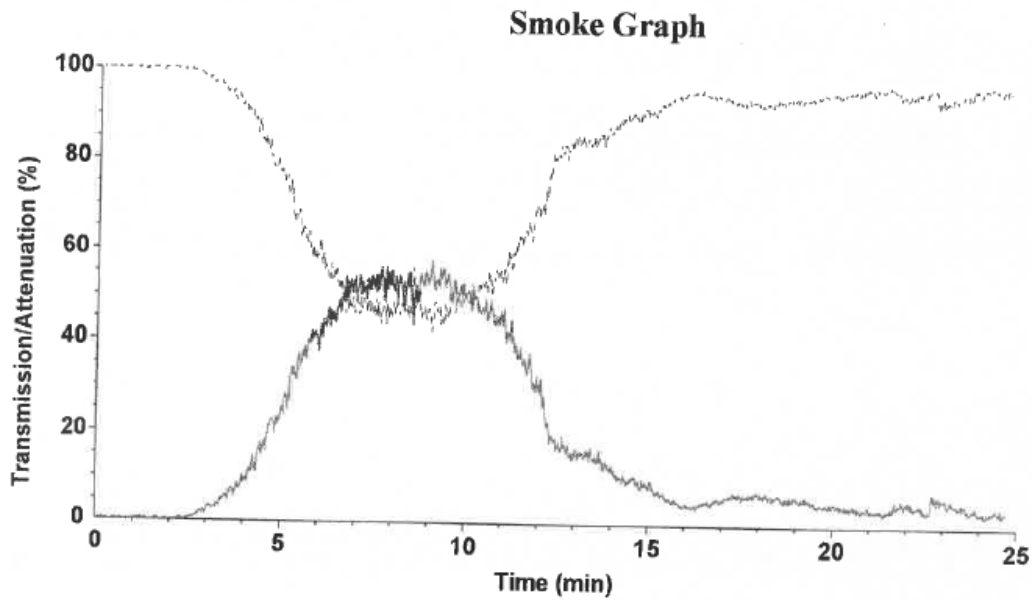
Test Results

Time to ignition	: 2 minutes 05 seconds (125 s)
Time to flameout	: 24 minutes 36 seconds (1476 s)
Extent of burning (mm)	: 410
Critical flux at extinguishment (kW/m ²)	: 5.01
HF-10 (kW/m ²)	: 6.78
HF-20 (kW/m ²)	: 5.18
HF-30 (kW/m ²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 310
Flame spread at 20 minutes (mm)	: 400
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 57.89
Time to peak light attenuation	: 9 minutes 03 seconds (543 s)
Total integrated smoke (%.min)	: 442.02
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.

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page 2



Test name : No direction #3
 File name : D:\FRPFILES\21040029.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	222	11.4	2.524	510	-	3.5	-
110	297	10.5	3.108	560	-	3.0	-
160	366	9.7	3.539	610	-	2.6	-
210	421	8.8	3.686	660	-	2.2	-
260	482	7.7	3.730	710	-	1.9	-
310	581	6.8	3.942	760	-	1.7	-
360	758	5.9	4.440	810	-	1.6	-
410	1324	5.0	6.632	860	-	1.3	-
460	-	4.2	-	910	-	1.2	-

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.