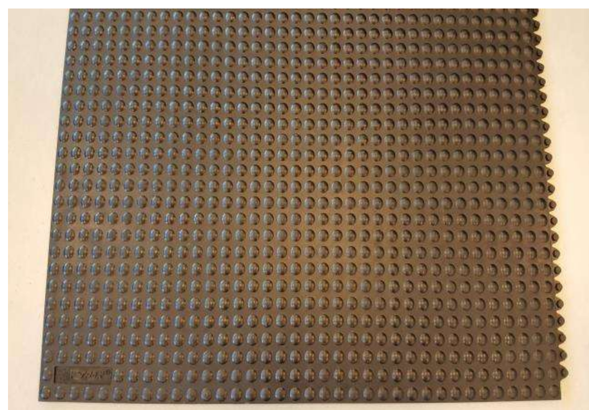
TÜVRheinland®

Prüfbericht-Nr.: *Test Report No.:*	**89212529.03br**	**Auftrags-Nr.:** *Order No.:*	172114	
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	01.11.2017	

Auftraggeber: *Client:*	Superior Manufacturing Group-Europe BV, Achterzeedijk 57 Unit 1, 2992 SB Barendrecht, The Netherlands
Prüfgegenstand: *Test item:*	Anti fatigue mat
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	465 SkywalkerHD Nitrile FR
Auftrags-Inhalt: *Order content:*	Classification of burning behaviour
Prüfgrundlage: *Test specification:*	EN 13501-1:2007+ A1:2009 Classification of burning behaviour *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)*
Wareneingangsdatum: *Date of receipt:*	06.11.2017
Prüfmuster-Nr.: *Test sample No.:*	MT17-172114.03
Prüfzeitraum: *Testing period:*	07.11.2017 - 10.11.2017
Ort der Prüfung: *Place of testing:*	Westervoortsedijk 73, 6827 AV Arnhem, Netherlands
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland Nederland B.V
Prüfergebnis*: *Test result*:*	Siehe Sonstiges / See Other



geprüft von / *tested by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
15.11.2017	M.A. van de Vlekkert	

kontrolliert von / *reviewed by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
15.11.2017	E. Zwier	

Sonstiges / *Other*: Test result: See clause 4 on page 5.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:*	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V04

Prüfbericht-Nr.: 89212529.03br
Test Report No.:

Liste der verwendeten Prüfmittel
List of used test equipment

Prüfmittel *Test equipment*	**Prüfmittel-Nr. / ID-Nr.** *Equipment No. / ID-No.*	**Nächste Kalibrierung** *Next calibration*
Flooring Radiant Panel	A00929	30.08.2018
Anemometer	A01989	26.09.2020
Scales	A00769	31.01.2018
Thickness gauge	A00904	14.01.2018
Metal ruler 1	A01759	12.12.2019
Metal ruler 2	A01558	12.01.2019
Metal ruler 3	A01567	20.09.2019
Vertical ignitability test cabinet	A01576	-
Stopwatch	A01699	11.12.2020
Metal reference plate	A00813	12.12.2019

Produktbeschreibung
Product description

Product identity	465 SkywalkerHD Nitrile FR*	Use of fire-retardant	Yes*
Composition	Nitrile rubber*		

** applicants declaration*

Figure 1, Picture of the received sample (surface)

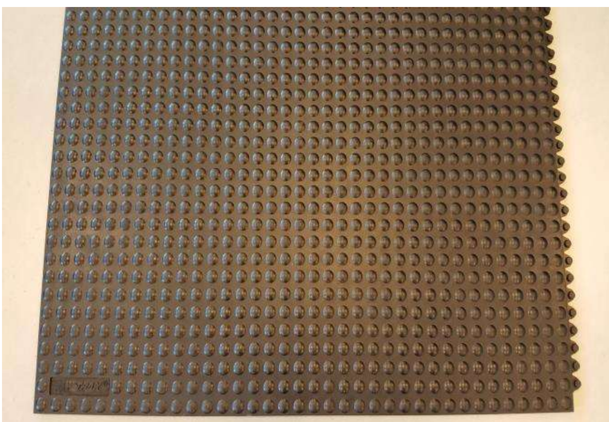
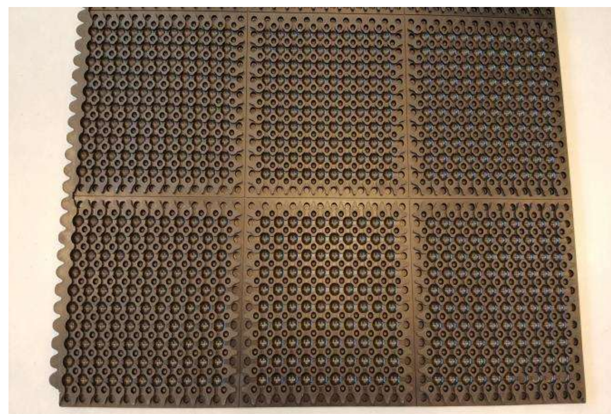


Figure 2, Picture of the received sample (backing)



1	**Construction data** *ISO 24346:2006 & ISO 23997:2008*	
	Test condition	23 ± 2ºC and 50 ± 4% relative humidity
	Pre conditioning, duration	≥ 48 h & until constant mass is achieved
	Total thickness (mm)	13.7
	Total mass (g/m^2)	11327
	Density (kg/m^3)	826

2	**Ignitability of products subjected to direct impingement of flame** *EN ISO 11925-2:2010/C1:2011*						
	Date of testing	08.11.2017					
	Pre-conditioning, climate	23 ± 2ºC 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	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)	47	49	48	48	47	49
	Extent of damaged area, width (mm)	16	15	15	15	15	15
	Material melts	No	No	No	No	No	No
	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

3	**Determination of the burning behaviour using a radiant heat source** *EN ISO 9239-1:2010*					
	Date of testing	09.11.2017 & 10.11.2017				
	Pre-conditioning, climate	23 ± 2ºC 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	4	Mean
	Orientation (Length: ↑ , Width: T)	↑	T	↑	↑	↑
	Flame spread (cm)	18	17	13	18	**16**
	CHF / HF-30 (kW/m^2)	9.6	9.8	10.3	9.6	**9.8**
	Maximum light attenuation (%)	39.2	33.9	44.5	51.2	**45.0**
	Smoke production (%.min)	340	289	315	438	**364**
	Observations: Specimen 1, 2, 3 and 4: No flashing, transitory- or sustained flaming are observed. Specimen 1, 2, 3 and 4: Extinguished naturally beforer the end of the test duration.					

4	**Classification of burning behaviour** *EN 13501-1:2007+A1:2009*	
	The product, **465 SkywalkerHD Nitrile FR**, in relation to its reaction to fire behaviour is classified:	**B_{fl}**
	The additional classification in relation to smoke production is:	**s1**
	Reaction to fire classification : B_{fl} – s1	
	Field of application - As a floor covering in accordanse with the nominal product paramaters 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 - 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.	

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

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	$\Delta T \leq 30$ °C; and $\Delta m \leq 50$ %; and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0$ MJ/kg [a] and $PCS \leq 2.0$ MJ/m² [b] and $PCS \leq 1.4$ MJ/m² [c] and $PCS \leq 2.0$ MJ/kg [d]	-
$A2_{fl}$	EN ISO 1182 [a] or	$\Delta T \leq 50$ °C and $\Delta m \leq 50$ % and $t_f \leq 20$ s	-
	EN ISO 1716 and	$PCS \leq 3.0$ MJ/kg [a] and $PCS \leq 4.0$ MJ/m² [b] and $PCS \leq 4.0$ MJ/m² [c] and $PCS \leq 3.0$ MJ/kg [d]	-
	EN ISO 9239-1 [e]	CHF ≥ 8.0 kW/m²	Smoke production [g]
B_{fl}	EN ISO 9239-1 [e] and	CHF ≥ 8.0 kW/m²	Smoke production [g]
	EN ISO 11925-2 [h]: Exposure = 15 s	Fs ≤ 150 mm within 20 s	-
C_{fl}	EN ISO 9239-1 [e] and	CHF ≥ 4.5 kW/m²	Smoke production [g]
	EN ISO 11925-2 [h]: Exposure = 15 s	Fs ≤ 150 mm within 20 s	-
D_{fl}	EN ISO 9239-1 [e] and	CHF ≥ 3.0 kW/m²	Smoke production [g]
	EN ISO 11925-2 [h]: Exposure = 15 s	Fs ≤ 150 mm within 20 s	-
E_{fl}	EN ISO 11925-2 [h]: Exposure = 15 s	Fs ≤ 150 mm within 20 s	-
F_{fl}	No performance determined		

[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 ≤ 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.

6	**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	: ~~TÜV Rheinland~~ Superior manufacturing group 89212529
Date of test	: Nov. 09 2017
Specimen description	: 465 SkywalkerHD Nitrile FR MT17-172114.03
Test name	: # Prod 1
File name	: D:\FRPFILES\17110012.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX17010.CSV
Thickness (mm)	: 13.7
Density (kg/m³)	: 826
Test duration	: 26 minutes 18 seconds (1578 s)
Substrate used?	: Yes
Substrate	: Calcium silicate
Fixing method	: None (loose laid)
Conditioned?	: Yes
Conditioning temp. (°C)	: 23
Conditioning RH (%)	: 50

Test Results

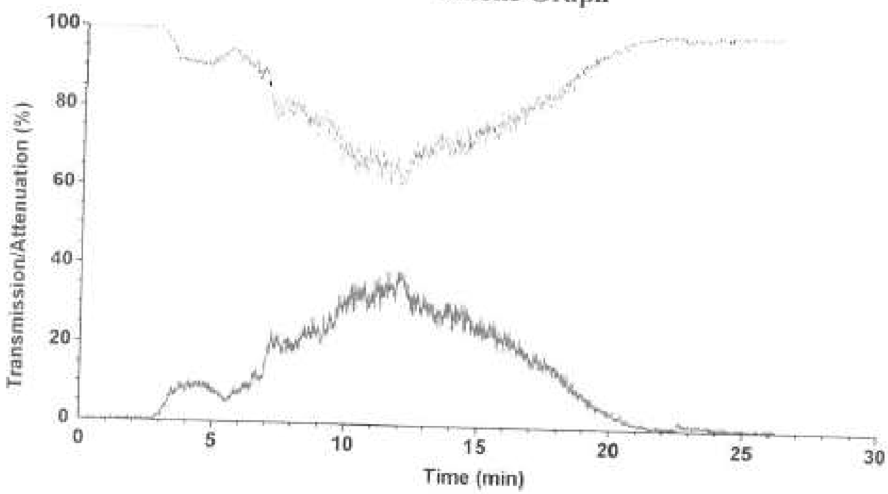
Time to ignition	: 2 minutes 04 seconds (124 s)
Time to flameout	: 26 minutes 17 seconds (1577 s)
Extent of burning (mm)	: 180
Critical flux at extinguishment (kW/m²)	: 9.64
HF-10 (kW/m²)	: >= 10.9
HF-20 (kW/m²)	: 9.64
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 80
Flame spread at 20 minutes (mm)	: 180
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 39.22
Time to peak light attenuation	: 11 minutes 57 seconds (717 s)
Total integrated smoke (%.min)	: 340.34
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.

Report produced with the Fire Testing Technology FRPSoft software

page 2

Smoke Graph



Test name : # Prod 1
File name : D:\FRPFILES\17110012.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	464	11.2	5.188	510	-	3.6	-
110	683	10.5	7.167	560	-	3.0	-
160	913	9.9	9.054	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.5	-
360	-	6.3	-	810	-	1.3	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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.: *Test Report No.:*	**89212529.03br**		Seite 9 von 14 *Page 9 of 14*
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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	: ~~TÜV Rheinland~~ Superior manufacturing group 89212529
Date of test	: Nov. 09 2017
Specimen description	: 465 SkywalkerHD Nitrile FR MT17-172114.03
Test name	: # Cross 2
File name	: D:\FRPFILES\17110013.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX17010.CSV
Thickness (mm)	: 13.7
Density (kg/m³)	: 826
Test duration	: 26 minutes (1560 s)
Substrate used?	: Yes
Substrate	: none
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	: 25 minutes 58 seconds (1558 s)
Extent of burning (mm)	: 170
Critical flux at extinguishment (kW/m²)	: 9.78
HF-10 (kW/m²)	: 10.63
HF-20 (kW/m²)	: 9.78
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 100
Flame spread at 20 minutes (mm)	: 170
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 33.86
Time to peak light attenuation	: 11 minutes 46 seconds (706 s)
Total integrated smoke (% min)	: 289.13
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.

Report produced with the Fire Testing Technology FRPSoft software

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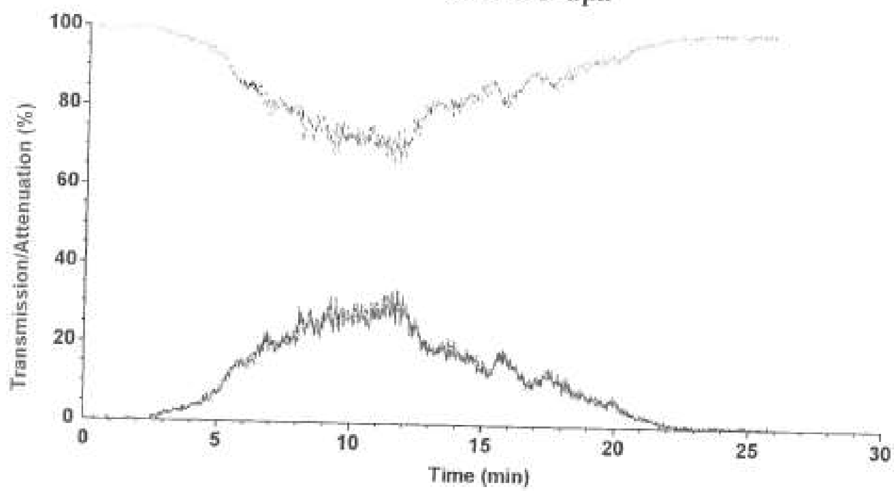
Smoke Graph



Test name : # Cross 2
File name : D:\FRPFILES\17110013.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	457	11.2	5.110	510	-	3.6	-
110	654	10.5	6.863	560	-	3.0	-
160	1029	9.9	10.205	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.5	-
360	-	6.3	-	810	-	1.3	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	910	-	1.0	-

Comments

Specimen extinguished naturally.

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Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Superior manufacturing group 89212529
Date of test	: Nov. 10 2017
Specimen description	: 465 SkywalkerHD Nitrile FR MT17-172114.03
Test name	: # Prod 3
File name	: D:\FRPFILES\17110018.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX17010.CSV
Thickness (mm)	: 13.7
Density (kg/m³)	: 826
Test duration	: 23 minutes 44 seconds (1424 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	: 23 minutes 42 seconds (1422 s)
Extent of burning (mm)	: 130
Critical flux at extinguishment (kW/m²)	: 10.26
HF-10 (kW/m²)	: 10.63
HF-20 (kW/m²)	: 10.38
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 100
Flame spread at 20 minutes (mm)	: 120
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 44.54
Time to peak light attenuation	: 10 minutes 42 seconds (642 s)
Total integrated smoke (%.min)	: 314.95
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.

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

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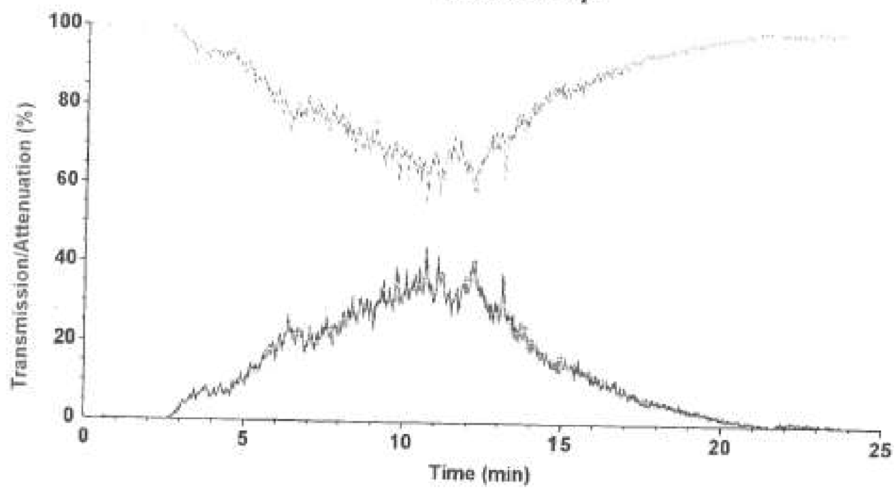
Smoke Graph



Test name : # Prod 3
File name : D:\FRPFILES\17110018.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	368	11.2	4.115	510	-	3.6	-
110	621	10.5	6.517	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	-	1.5	-
360	-	6.3	-	810	-	1.3	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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	**EN 13501-1:2007+ A1:2009**	Messergebnisse - Bemerkungen	Bewertung
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Flooring Radiant Panel Single Specimen Report

Standard	: EN ISO 9239-1:2010
Laboratory	: TÜV Rheinland Nederland B.V.
Sponsor	: Superior manufacturing group 89212529
Date of test	: Nov. 10 2017
Specimen description	: 465 SkywalkerHD Nitrile FR MT17-172114.03
Test name	: # Prod 4
File name	: D:\FRPFILES\17110019.CSV
Test number in series	: 4
Flux calibration file name	: C:\FRPSOFT2.9A\CALIB\FLX17010.CSV
Thickness (mm)	: 13.7
Density (kg/m³)	: 826
Test duration	: 23 minutes 38 seconds (1418 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 05 seconds (125 s)
Time to flameout	: 23 minutes 36 seconds (1416 s)
Extent of burning (mm)	: 180
Critical flux at extinguishment (kW/m²)	: 9.64
HF-10 (kW/m²)	: 10.38
HF-20 (kW/m²)	: 9.64
HF-30 (kW/m²)	: Not calculated (test duration < 30 minutes)
Flame spread at 10 minutes (mm)	: 120
Flame spread at 20 minutes (mm)	: 180
Flame spread at 30 minutes (mm)	: Not measured
Peak light attenuation (%)	: 51.21
Time to peak light attenuation	: 8 minutes 53 seconds (533 s)
Total integrated smoke (%.min)	: 437.76
Potential classification	**: A2(fl)/B(fl)**
Smoke production classification	**: s1**

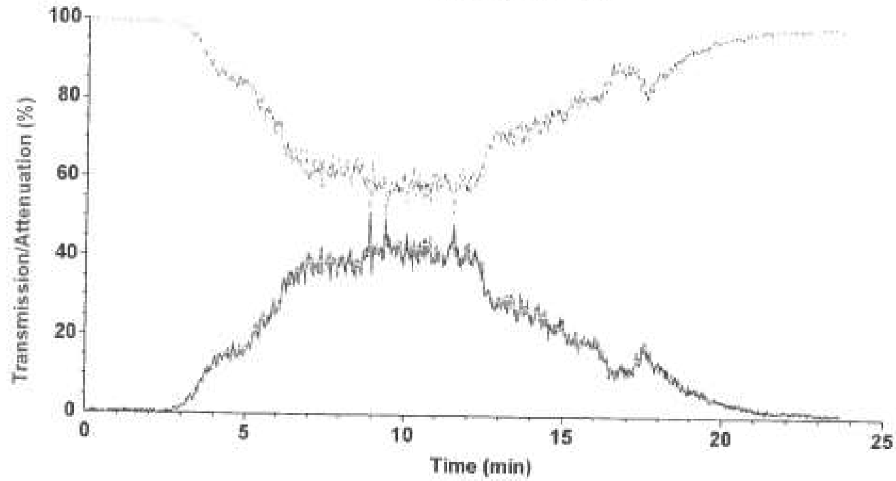
These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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

Report produced with the Fire Testing Technology FRPSoft software

page 2

Smoke Graph



Test name : # Prod 4
File name : D:\FRPFILES\17110019.CSV

Rake Results

Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)	Position (mm)	Time (s)	Flux (kW/m²)	Qsb (MJ/m²)
60	353	11.2	3.947	510	-	3.6	-
110	536	10.5	5.625	560	-	3.0	-
160	776	9.9	7.696	610	-	2.5	-
210	-	9.2	-	660	-	2.1	-
260	-	8.2	-	710	-	1.8	-
310	-	7.3	-	760	-	1.5	-
360	-	6.3	-	810	-	1.3	-
410	-	5.3	-	860	-	1.2	-
460	-	4.4	-	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.