



FIRE TEST REPORT

2795

6495177049

Lab. Ref. No.:	FST38863 Iss 1	S.O No.:	L19973	Page 1 of 2
Material:	VFR503			
Customer:	VIKING EXTRUSIONS LTD	P.O. No.:	PO24873	
Date of Test:	31/07/2018	Rel. Note No.:	N/A	
Specimen Conditioning:	24hr. min. at 22.5 +/- 1.5°C and 50 +/- 5% RH	Test Plan / Document	N/A	

TEST METHOD / SPECIFICATION	TEST RESULT			MEAN	CRITERIA (max. average)	PASS/FAIL	
	1	2	3				
FLAMMABILITY							
F1 CS 25.853(a) Amdt.21 App.F Pt.I(a)(1)(i) & (b)(4) 60s. Vert.	Afterflame (sec)				15 sec.		
	Burn Length (in)				6 in.		
	Drip Extng Time (sec)				3 sec.		
F2 CS 25.853(a) Amdt.21 App.F Pt.I(a)(1)(ii) & (b)(4) 12s. Vert.	Afterflame (sec)				15 sec.		
	Burn Length (in)				8 in.		
	Drip Extng Time (sec)				5 sec.		
F3 CS 25.853(a) Amdt.21 App.F Pt.I(a)(1)(iv) & (b)(5) 15s. Horiz.	Burn Rate (in/min)	0.00	0.00	0.00	0.00	2.5 in/min.	PASS
F4 CS 25.853(a) Amdt.21 App.F Pt.I(a)(1)(v) & (b)(5) 15s Horiz.	Burn Rate (in/min)					4.0 in/min.	
F5 CS 25.855(d) Amdt.21 App.F Pt.I(a)(2)(ii) & (b)(6) 30sec/45°	Afterflame (sec)				15 sec.		
	Afterglow (sec)				10 sec.		
	Flame Penetration				NONE		
F6 CS 25.1713(c) Amdt.21 App.F Pt.I(a)(3) (b)(7) 30sec/60°	Afterflame (sec)				30 sec.		
	Burn Length (in)				3 in.		
	Drip Extng Time (sec)				3 sec.		
F7 HEAT RELEASE * CS 25.853(d) Amdt 21 App.F Pt.IV (e) & (g)	Peak HR (kW/m ²)				65(kW/m ²)		
	2 min THR (kWmin/m ²)				65(kWmin/m ²)		
F8 SMOKE EMISSION * CS 25.853(d) Amdt 21 App.F Pt.V(a) & (b)	Ds Max in 4 min. (Flaming)				200		
F9 SMOKE EMISSION * ABD0031 IssF ABD0031 IssF	Ds Max in 4 min. (Flaming)	48.74	41.46	43.81	44.67	200	PASS
	(Non Flaming)						
F10 TOXIC GAS EMISSION (ppm) ABD0031 IssF	CO (Flaming)	194.00	190.00		192	1000	PASS
	CO (Non-Flaming)						
	HCN (Flaming)	<1	<1			150	PASS
	HCN (Non-Flaming)						
	HF (Flaming)	<1	<1			100	PASS
	HF (Non-Flaming)						
	HCL (Flaming)	<1	<1			150	PASS
	HCL (Non-Flaming)						
	SO ₂ (Flaming)	1.00	<1		1	100	PASS
	SO ₂ (Non-Flaming)						
NO _x (Flaming)	<1	<1			100	PASS	
NO _x (Non-Flaming)							

* SEE ATTACHED GRAPHS

FILENAMES: FST38863F.REP

The results detailed above relate only to the items tested.

COMMENTS; Samples Extinguished and Failed to Reach Timing Marker (F3)

Flammability: Flame Temp. (Min. 843C (1550F)): 861°C
Smoke Emission: Heat Flux (25 +/- 0.5kW/m²): 25.1

Heat Release: Calibration Factor: 0.3185 kW/mV
Heat Flux (35 +/- 0.5kW/m²):

TESTED BY:

NAME:
TITLE:
DATE:

S. ELLIS
Test Laboratory Engineer
02/08/2018

AUTHORISED BY:

NAME:
TITLE:
DATE:

D. Heyes-Fisher
Test Laboratory Team Leader
02/08/2018

UNCERTAINTY OF MEASUREMENT

Flammability - Afterflame/Drip Extng Time +/- 0.7sec, Burnlength +/- 0.1in, Burn Rate +/- 0.1in/min Heat Release - +/- 1.5% Smoke Emission - +/- 4% Toxic Gas Emission - +/- 15%



FIRE TEST REPORT

2795

6495177049

Lab. Ref. No.:	FST38863 Iss 1	S.O No.:	L19973	Page 2 of 2
Material:	VFR503			
Customer:	VIKING EXTRUSIONS LTD	P.O. No.:	PO24873	
Date of Test:	31/07/2018	Rel. Note No.:	N/A	
Specimen Conditioning:	24hr. min. at 22.5 +/- 1.5°C and 50 +/- 5% RH	Test Plan / Document	N/A	

Test Laboratory Equipment Used

"H" Number	"P" Number	Instrument	Serial No.	Expiry Date	Item Used For Test
Flammability					
421	012	Vertical Flam Chamber	N/A	05 July 2019	
422	013	Horizontal Flam Chamber	N/A	05 July 2019	*
-	159	45/60° flamm chamber	N/A	20 October 2018	
-	204	RS Pro RS-1384 TEMP LOGGER	171201074	21 May 2019	*
-	194	STOP WATCH	39169-TM	13 November 2018	*
-	189	12" Steel rule	678-012	29 August 2018	*
Heat Release					
270	001	OSU Chamber	K11234	01 August 2018	
-	072	Vatell TG1000-1	9022	12 January 2019	
490	099	Data Acquisition/Switch Unit	MY41028196	16 October 2018	
586	146	16 Channel Reed Multiplexer	MY41017297	16 October 2018	
Smoke Emission & Toxic Gas					
524	121	FTT Smoke Box	1111527	05 October 2018	*
-	200	Radiometer	18338	03 April 2019	*
-	196	Testo 350 Flue Gas Anylizer	2293549	12 April 2019	*
-	157	Dräger X-act 500	ERHC-0041	04 April 2019	*
-	158	Dräger X-act 500	ERHC-0135	13 April 2019	*
Conditioning Chamber					
-	130	Conditioning Chamber SU700V	59987	08 February 2019	*
-	195	Conditioning Chamber TAS (4057)	26820712	15 July 2019	

COMMENTS

CALIBRATION/EQUIPMENT CHECKED BY:

NAME:
TITLE:
DATE:

S. ELLIS
Test Laboratory Engineer
02/08/2018



Smoke Density Chamber Test Report

Report filename C:\SMOKEBOX\DATA\Astme662\FST38863F.rep
 Standard ASTM E 662
 Laboratory
 Date of report 31 July 2018

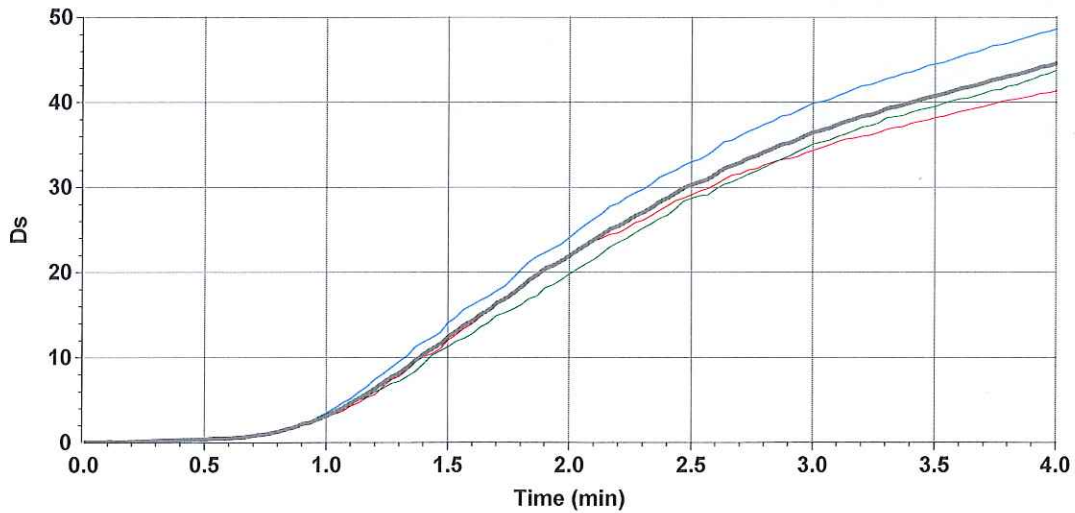
Specimen Information

Test name FST38863 VFR503
 Conditioned? Yes
 Conditioning temperature 23°C
 Conditioning RH 50%

Test Results

Flaming tests

Test	Dm (-)	t(Dm) (s)	Duration (s)
Mean	44.67	241	240
F 1	48.74	241	240
F 2	41.46	241	240
F 3	43.81	241	240



The test results relate to the behaviour of the test specimens of a 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.

AVIC Cabin Systems (UK) Limited
26 Pembroke Avenue
Waterbeach
Cambridgeshire
United Kingdom, CB25 9QR
Tel: +44 1223 44 1000
www.aviccabinssystemsuk.com



2795

UKAS IEC/ISO 17025:2017

Nadcap Non-Metallic Materials Testing

An Airbus Approved Test House
ARP-ID 135583

Fire Safety Test Report

Lab Reference No: FST51501 Issue1

Sales Order No: SE17053

Customer: VIKING EXTRUSIONS

Purchase Order No: 29288

Material/Part No: JOB NO: 59204. SHORE HARDNESS: VFR503. BATCH NO: 2323607 /
2109412. CURE DATE: 24-11-22

Date of Test: 13 December 2022

Conditioning: EASA - 24hr. min. at 21 +/- 3°C and 50 +/- 5% RH

Time In: 08/12/2022 12.00

Time Out: 13/12/2022 13.50

Release Note No: N/A

Test Plan / Document: N/A

Tests Results

Test Method/ Specification	F1 CS 25.853(a) Amdt.27 App.F Pt.I(a)(1)(i) & (b)(4) 60 second vertical
-----------------------------------	--

	TEST RESULT					MEAN	CRITERIA (max average)	PASS/ FAIL
	1	2	3	4	5			
Afterflame (sec)	2.66	4.71	7.92			5.10	15 sec	PASS
Burn Length (in)	1.00	1.10	0.80			0.97	6 in	
Drip Exling Time (sec)	0.00	0.00	0.00			0.00	3 sec	

Comments & Observations	
------------------------------------	--

Compiled By:

I here by attest that this report has been generated in accordance with customer and regulatory requirements; recorded results reflect the test activity and test requirement.

Name Mark Mueller
Title Test Laboratory Engineer
Date 13 December 2022

Signed & Stamped






Tested By:

I here by attest that test(s) have been conducted in accordance with customer and regulatory requirements, and all equipment is within calibration and fit for function; recorded results reflect the test activity and test requirement.

Name Mark Mueller
Title Test Laboratory Engineer
Date 13 December 2022

Signed & Stamped






Witnessed By:

I here by attest that this report and stated results have been generated in accordance with customer and regulatory requirements; recorded results reflect the test activity and test requirement.

Name David Heyes-Fisher
Title Test Laboratory Manager
Date 13 December 2022

Signed & Stamped

Equipment Used

Unique "P" No.	Description	Next Calibration Date
P234	CONDITIONING CHAMBER	13 December 2022
P342	DIGITAL THERMOMETER	21 July 2023
P343	STEEL RULE	19 October 2023
P337	STOPWATCH	03 March 2023
P331	THERMOCOUPLE	21 July 2023
P012	VERTICAL FLAM CHAMBER	22 June 2023

Notes

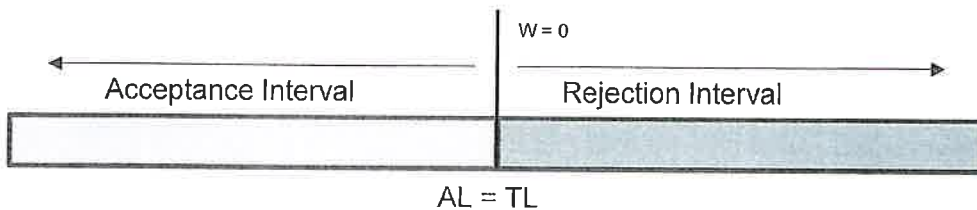
- Note 1** Results detailed in this report relate only to the item(s) tested, as submitted by the customer.
- Note 2** This test report **will not** be reproduced, except in full, without written approval from the laboratory.
- Note 3** Opinions and Interpretations are not accredited.
- Note 4** The material identification and/or descriptions have been supplied by the customer and has not been verified by AVIC Cabin Systems (UK) Limited.
- Note 5** The laboratory activities related to these results have been performed under our UKAS and Nadcap scopes of approval/accreditation. Results are reported as accredited, except in indicative instances.

Note 6 Decision Rule

The laboratory at AVIC Cabin Systems (UK) Limited employs the "Simple Acceptance" or "Shared Risk" decision rule as a default (unless otherwise specified by the customer). This is a binary decision rule, the acceptance limit (AL) is considered equal to the tolerance limit (TL) and the guard band (w), equal to length 0. Therefore, the **specific risk** can be up to 50% probability of false acceptance (PFA), as referenced in ILAC-G8:09/2019.

PASS - Result is below the acceptance limit, AL = TL

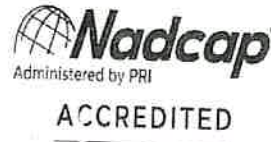
FAIL - Result is above the acceptance limit, AL = TL



Note 7 Uncertainty of measurement

- Flammability - Afterflame/Drip Exiting Time +/- 0.7sec, Burnlength +/- 0.1in, Burn Rate +/- 0.1in/min
- Smoke Emission - +/- 4%, Toxic Gas Emission - +/- 15%

AVIC Cabin Systems (UK) Limited
26 Pembroke Avenue
Waterbeach
Cambridgeshire
United Kingdom, CB25 9QR
Tel: +44 1223 44 1000
www.aviccabinssystemsuk.com



2795

UKAS IEC/ISO 17025:2017

Nadcap Non-Metallic Materials Testing

An Airbus Approved Test House
ARP-ID 135583

Fire Safety Test Report

Lab Reference No: FST51259 Issue 1

Sales Order No: SE16912

Customer: VIKING EXTRUSIONS

Purchase Order No: 29192

Material/Part No: JOB NO: 56467. SHORE HARDNESS: VFR503. BATCH NO:
MS25686/MS26818. CURE DATE: 13-09-22

Date of Test: 20 October 2022

Conditioning: EASA - 24hr. min. at 21 +/- 3°C and 50 +/- 5% RH

Time In: 17/10/2022 10.00 **Time Out:** 20/10/2022 12.33

Release Note No: N/A

Test Plan / Document: N/A

Tests Results

Test Method/ Specification	F4 CS 25.853(a) Amdt.27 App.F Pt.I(a)(1)(v) & (b)(5) 15 second horizontal
-----------------------------------	--

	TEST RESULT					MEAN	CRITERIA (max average)	PASS/ FAIL
	1	2	3	4	5			
Burn Rate (in/min)	0.00	0.00	0.00			0.00	4.0 in/min.	PASS

Comments & Observations	Sample failed to ignite and reach timing marker
------------------------------------	---

Compiled By:

I here by attest that this report has been generated in accordance with customer and regulatory requirements; recorded results reflect the test activity and test requirement.

Name Steve Ellis
Title Test Laboratory Engineer
Date 21 October 2022

Signed & Stamped






Tested By:

I here by attest that test(s) have been conducted in accordance with customer and regulatory requirements, and all equipment is within calibration and fit for function; recorded results reflect the test activity and test requirement.

Name Steve Ellis
Title Test Laboratory Engineer
Date 21 October 2022

Signed & Stamped

Approved By:

I here by attest that this report and stated results have been generated in accordance with customer and regulatory requirements; recorded results reflect the test activity and test requirement.

Name Dominic Moore
Title Head of Quality
Date 21 October 2022

Signed & Stamped

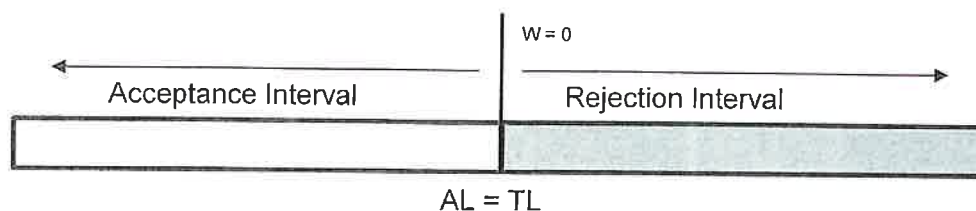



Equipment Used

Unique "P" No.	Description	Next Calibration Date
P234	CONDITIONING CHAMBER	12 November 2022
P342	DIGITAL THERMOMETER	21 July 2023
P013	HORIZONTAL FLAM CHAMBER	22 June 2023
P333	STEEL RULE	26 October 2022
P337	STOPWATCH	03 March 2023
P331	THERMOCOUPLE	21 July 2023

Notes

- Note 1** Results detailed in this report relate only to the item(s) tested, as submitted by the customer.
- Note 2** This test report **will not** be reproduced, except in full, without written approval from the laboratory.
- Note 3** Opinions and Interpretations are not accredited.
- Note 4** The material identification and/or descriptions have been supplied by the customer and has not been verified by AVIC Cabin Systems (UK) Limited.
- Note 5** The laboratory activities related to these results have been performed under our UKAS and Nadcap scopes of approval/accreditation. Results are reported as accredited, except in indicative instances.
- Note 6** Decision Rule
 The laboratory at AVIC Cabin Systems (UK) Limited employs the "Simple Acceptance" or "Shared Risk" decision rule as a default (unless otherwise specified by the customer). This is a binary decision rule, the acceptance limit (AL) is considered equal to the tolerance limit (TL) and the guard band (w), equal to length 0. Therefore, the specific risk can be up to 50% probability of false acceptance (PFA), as referenced in ILAC-G8:09/2019.
PASS - Result is below the acceptance limit, AL = TL
FAIL - Result is above the acceptance limit, AL = TL



Note 7 Uncertainty of measurement

Flammability - Afterflame/Drip Exiting Time +/- 0.7sec, Burnlength +/- 0.1in, Burn Rate +/- 0.1in/min
 Smoke Emission - +/- 4%, Toxic Gas Emission - +/- 15%

Prüfbericht / Test report

Nr. / No. 221122

vom / issued 20.12.2022

Auftraggeber / Customer: Viking Extrusions Ltd
Kontakt / contact Ivy Arch Road
BN14 8BX Worthing
UK

Auftragsdatum / Date of order: 14.10.2022
**Datum der Probenahme /
Date of sampling:** keine offizielle Probennahme durch einen
Beauftragten von Warringtonfire Frankfurt GmbH
*no official sampling of the specimen by a
representative of Warringtonfire Frankfurt GmbH*

**Eingang der Proben /
Date of sample arrival** 15.11.2022
**Datum der Prüfungen /
Date of test:** 22.11.2022

Auftrag / Order

Bestimmung der Rauchdichte und spezifischer Rauchgaskomponenten an einem Prüfmuster unter
Einwirkung von strahlender Wärme und Flammen.
*Determination of the specific smoke density and specific gas components of the smoke generated by
a material under the influence of radiant heat and flames.*

Beschreibung / Bezeichnung des Prüfgegenstandes / Description / designation of the test object

Produktname: VFR503
Product name: VFR503

Beschreibung der zugrunde liegenden Prüfverfahren / Description of the relevant test procedures

Rauchdichte Test nach / *Smoke Density Test in accordance with:*
- EASA / CS Part 25 §25.853 (d) and Appendix F Part V(b), Amendment 27
- ABD0031, Issue G and Test Method AITM 2.0007A, Issue 3

Toxizitäts Test nach / *Toxicity Test in accordance with:*
- ABD0031, Issue G and Test Method AITM 3.0005,
Issue 2



Deutsche
Akkreditierungsstelle
D-PL-18354-01-00

1. Beschreibung des Probenmaterials / Description of the test material

1.1 Angaben des Auftraggebers / Details of the customer:

Produktname: VFR503
Product name: VFR503
Prüfseite: -
Face to be tested: -

Materialbeschreibung / Product description:

Detaillierte Angabe der Komponenten: Silikon Gummi
Detailed specification of the components: silicon rubber

Dicke: ca. 3 mm
Thickness: approx. 3 mm

Flächengewicht: n/a
Surface weight: n/a

Farbe: hell grau
Colour: light grey

Vorgesehener Einsatzbereich des Produktes: Silikon Extrusion
Intended end use of product: silicon extrusion

1.2 Bei der Probenvorbereitung durch Warringtonfire Frankfurt GmbH festgestellte Werte:
1.2 By Warringtonfire Frankfurt GmbH determined values:

Material / Material: Silikon Gummi / silicon rubber

Farbe / Colour: hell grau / light grey

Dicke / Thickness: ca. 2,93 mm / approx. 2.93 mm

Flächengewicht / Area weight: ca. 3764 g/m² / approx. 3764 g/m²

Prüfung nach mindestens 24 Std. Klimalagerung bei 23°C und 50% rel. Luftfeuchte.
Testing after conditioning at 23°C and 50% rel. humidity for at least 24 h.

2. Versuchsergebnisse / Test results:

Rauchdichte Test nach / Smoke Density Test in accordance with:

- EASA / CS Part 25 §25.853 (d) and Appendix F Part V(b), Amendment 27
- ABD0031, Issue G and Test Method AITM 2.0007A/B, Issue 3

Non flaming (NF)
DS at (min)

Worst case:	-						
Proben Nr. Sample no	1	2	3	4	5	6	Ds max bis 4 Min up to 4 min
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
Max Wert Max Value	-	-	-	-	-	-	
Mittelwert Average	-	-	-	-	-	-	
Grenzwert Limit				200			

Bestanden
ABD CS 25

Flaming (F)
DS at (min)

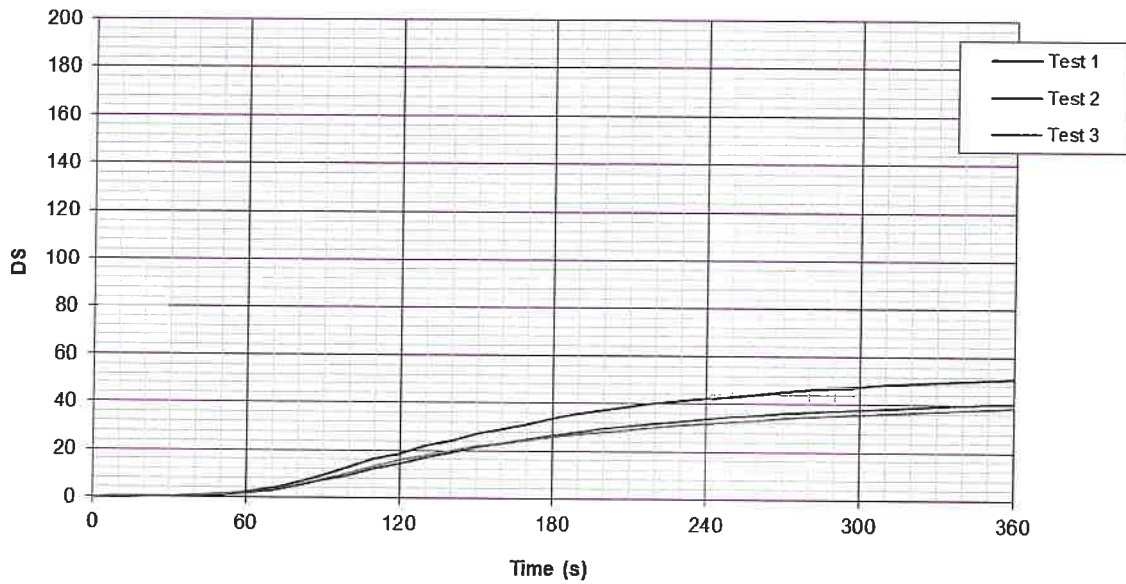
Worst case:	Längsrichtung/ Lengthwise						
Proben Nr. Sample no	1	2	3	4	5	6	Ds max bis 4 Min up to 4 min
Quer / cross							
1	2	19	34	43	48	51	43
2	2	15	27	34	38	40	34
3	2	16	26	32	36	39	32
Max Wert Max Value	2	19	34	43	48	51	
Mittelwert Average	2	16	29	36	40	43	
Grenzwert Limit				200			

Bestanden
ABD CS 25
ja ja
yes yes

Bemerkungen:
Remarks: Keine / none

2..1 Rauchdichte Diagramm / Smoke density diagram

Specific Optical Density Graph (Flaming)



2.2 Versuchsergebnisse / Test results:

Toxizitäts Test nach / Toxicity Test in accordance with:

- ABD0031, Issue G and Test Method AIM 3.0005, Issue 2

Gas	Gas Limit after 4 Min (ppm)	Non Flaming (NF)		Flaming (F)	
		Proben Nr. Sample no.		Proben Nr. Sample no.	
Hydrogen Cyanide HCN	150	1	-	1	4
		2	-	2	3
		3	-	3	2
		Mittelwert Average		-	Mittelwert Average 3
Carbon Monoxide CO	ABD 0031 no limit required	1	-	1	207
		2	-	2	206
		3	-	3	200
		Mittelwert Average		-	Mittelwert Average 204
Nitrous Gases NO-NO2	100	1	-	1	1
		2	-	2	2
		3	-	3	0
		Mittelwert Average		-	Mittelwert Average 1
Sulfur Dioxide Hydrogen SO2-H2S	Set A: 100 Set B: 150	1	-	1	0
		2	-	2	0
		3	-	3	0
		Mittelwert Average		-	Mittelwert Average 0*
Hydrogen Fluoride HF	100	1	-	1	0
		2	-	2	0
		3	-	3	0
		Mittelwert Average		-	Mittelwert Average 0*
Hydrogen Chloride HCL	150	1	-	1	0
		2	-	2	0
		3	-	3	0
		Mittelwert Average		-	Mittelwert Average 0*

Bemerkung/ Remark: * nicht nachweisbar bzw. < Nachweisgrenze
Not detectable respectively < detection limit

3. **Beurteilung / Assessment**

Das in Abschnitt 1 beschriebene Material erfüllt die Anforderungen:
The material described in chapter 1 fulfils the requirements:

Rauchdichte Test nach / *Smoke Density Test in accordance with:*

- EASA / CS Part 25 §25.853 (d) and Appendix F Part V(b), Amendment 27
- ABD0031, Issue G and Test Method **AITM 2.0007A**, Issue 3

ja/yes

Toxizitäts Test nach / *Toxicity Test in accordance with:*

- ABD0031, Issue G and Test Method **AITM 3.0005**, Issue 2

ja/yes

4. **Besonderer Hinweis / Special note**

Das Brandversuchsergebnis gilt für das in Abschnitt 1 beschriebene Material.
The fire test result is only valid for the material described in chapter 1.

Im Verbund mit anderen Materialien (z.B. Beschichtungen, Hinterlegungen) kann das Brandverhalten ungünstig beeinflusst werden, so dass die o. a. Klassifizierung nicht mehr gültig ist. Das Brandverhalten des Materials im Verbund mit anderen Materialien ist gesondert nachzuweisen.
If combined with other materials the burning behaviour can be influenced unfavourably so that the classification above is no longer valid. The burning behaviour in combination with other materials has to be tested separately.

**5. Entscheidungsregel und Messunsicherheit/
Decision rule and measurement uncertainty**

Bei der Ermittlung der Ergebnisse werden die normativ festgelegten Prüfbedingungen und -grenzen nicht angepasst, um Unsicherheiten bei der Messung Rechnung zu tragen. Die ermittelten Messunsicherheiten werden nicht mit den gemessenen Ergebnissen kombiniert, um die Übereinstimmung mit den Produkt-Spezifikationen zu bewerten.

In determining the results, the normative test conditions and limits are not adjusted to account for uncertainties in measurement. The determined measurement uncertainties are not combined with the measured results to evaluate compliance with the product specifications.

Frankfurt, den / the 20.12.2022



H. Schmid
Verantwortlicher Prüfer
Tester in charge



M. Ronzheimer
Senior Test Officer



Die Ergebnisse der Prüfungen beziehen sich ausschließlich auf den oben bezeichneten Prüfgegenstand. Prüfberichte dürfen ohne Zustimmung von Warringtonfire Frankfurt GmbH nur nach Form und Inhalt unverändert veröffentlicht oder vervielfältigt werden. Die gekürzte Wiedergabe eines Prüfberichts ist nur mit Zustimmung von Warringtonfire Frankfurt GmbH zulässig. Dieser Prüfbericht umfasst 7 Seiten.

These test results relate only to the behavior of the test specimens 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.

Test reports are only allowed to be published or reproduced, not changed in form and tenor without permission of Warringtonfire Frankfurt GmbH. The abridged account of a test report is only allowed with the agreement of Warringtonfire Frankfurt GmbH.

This test reports contains 7 pages.

