



Kmllex Aviation Inc.
 2605 Diab, Ville St-Laurent, Quebec,
 Canada, H4S 1E7
 Tel: 514-626-1254, Fax: 514-784-0131

Flammability Test Results

FAR 25.853 / AWM 525.853 (a) Appendix F Part I, (a) 1, (i) 60 second

FAR 25.853 / AWM 525.853 (a) Appendix F Part I, (a) 1, (ii) 12 second

Customer: **Marquez**

Test Plan: N/A

Sample ID Sample # 231

PO# C017626, Tracking Number 28102-41

Flame Temperature:

1836 F

THK:

0.07

Result	Extinguish Time [seconds]	Burn Length [inches]	Drip Extinguish Time [seconds]
1	0.00	3.00	1.00
2	0.00	3.25	1.00
3	0.00	3.00	0.80
Average	0.00	3.08	0.93

Criteria: Per FAR 25.853, Appendix F Part I

Test Type	Extinguish. Time [seconds]	Burn Length [inches]	Drip Extinguish Time [seconds]
(a),1,(i)	15	6	3
(a),1,(ii)	15	8	5

Pass

Fail

Tested by: B. Jasinska

Date: 7-Nov-2008

Witnessed by: 
 Bogdan Kmieciak

Testing was performed in accordance with Section 1.0 of Aircraft Material Fire Test Handbook, DOT/FAA/AR-00/12, dated April 2000.



TEST REPORT

In account with ADVANCED LASER MATERIALS, LLC 900 Industrial Park Road Belton, TX 76513	Date	01/28/2008	Page 1 of 3 Pages
	W. O. No.	T 40962	P. O. No. 108100
	Identification	As noted	Shipper None

IDENTIFICATION : One (1) set of prepared test specimens was submitted by Advanced Laser Materials for determinations of vertical ignition properties.

Per client's request, 60 second vertical ignition was conducted in accordance with 14 CFR 25.853(a), Amendment 25-83, Appendix F, Part I, as well as Boeing's test method BSS 7230, Revision H, Method F1 and Airbus Industrie's test method AITM 2.0002A, Issue 1.

The client identified the test articles as follows:

<u>Set No.</u>	<u>Advanced Laser Materials ID</u>	<u>Test Performed</u>
1	ALM FR-106	60 Second Vertical

SPECIFICATION : 14 CFR 25.853(a), Amendment 25-83, Appendix F, Part I, BSS 7230, Revision H, Figure 12, F1 and Airbus Industrie ABD0031, Issue F, Paragraph 7.1.1.

CAVEAT : The results of these tests were determined under controlled laboratory conditions and are not necessarily representative of the behavior of the material under actual fire conditions. However, the results of these tests may be used as elements of a fire risk assessment that takes into account all of the factors that are pertinent to its end use.

As a mutual protection to clients, the public and Delsen Testing Laboratories, Inc., this report is submitted for the exclusive use of the client to whom it is addressed. This report applies only to the sample(s) tested and is not necessarily indicative of the qualities of apparently similar or identical products. Use of this report, whether in whole or in part, or of any seals or insignia connected therewith, in any advertising or publicity matter, without prior written authorization from Delsen Testing Laboratories, Inc. is prohibited.



1024 Grand Central Avenue • Glendale, California 91201-3011
 (818) 247-4106 • FAX (818) 247-4537



REFERENCE

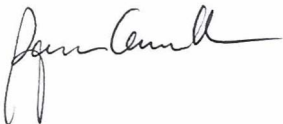
- DOCUMENTS : 1. 14 CFR Part 25, "Airworthiness Standards: Transport Category Airplanes", with Appendix F, Part I, Amendment 25-83, effective 06 March 1995.
2. BSS 7230, Revision H, "Flammability Properties of Aircraft Material, Determination of", dated 29 July 1994.
3. Airbus Industrie Directive ABD0031, "Fireworthiness Requirements Pressurized Section of Fuselage", Issue F, dated 08 June 2005.
4. Airbus Industrie Test Method AITM 2.0002, "Flammability of Nonmetallic Materials – Small Burner Test, Vertical", Issue 1, dated October 1993.
5. DOT/FAA/AR-00/12, "Aircraft Materials Fire Test Handbook", dated April 2000.
6. Purchase Order No. 0108100 issued by Richard Booth of Advanced Laser Materials, LLC, dated 17 January 2008.

RESULTS

- : The test results of the above noted test articles, submitted and identified by the client as **ALM FR-106**, meet the 60-second vertical ignition requirements specified in 14 CFR 25.853(a), Amendment 25-83, Appendix F, Part I, Paragraph (a)(1)(i); BSS 7230, Revision H, Figure 12 (F1); and ABD0031, Issue F, Paragraph 7.1.1 when tested for 60 second vertical ignition per 14 CFR Part 25, Appendix F, Part I, Section 7.1 of BSS 7230 and Airbus test method AITM 2.0002A.

All individual test results are presented on page 3 of this report for the client's evaluation.

Respectfully submitted,



Suzanne Cannell

Manager, Flammability Laboratory

DELSEN TESTING LABORATORIES, INC.

sc L4 \ T 40962 w

Delsen Testing Laboratories, Inc. is accredited by the American Association for Laboratory Accreditation in the field of mechanical testing, as listed in the current A2LA Directory of Accredited Laboratories and as shown on the A2LA Scope of Accreditation, Certificate No. 0096-01.

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60 SECOND VERTICAL IGNITION

SPECIFICATION : 14 CFR 25.853(a), Amendment 25-83, Appendix F, Part I, Paragraph (a)(1)(i); BSS 7230, Revision H, Figure 12 (F1); and ABD0031, Issue F, Section 7.1.1, page 18.

TEST METHOD : 14 CFR Part 25, Amendment 25-83, Appendix F, Part I, Paragraphs (b)(1) through (b)(4); BSS 7230, Revision H, Paragraph 7.1.1; and AITM 2.0002A, Issue 1.

PRECONDITIONING : 24 hours, minimum, at 70±5°F and 50±5% relative humidity.

TEST TEMPERATURE : 70±5°F

FLAME HEIGHT : 1.5 inches

FLAME TEMPERATURE : 1780±100°F

IGNITION SOURCE : C.P. Grade Bottled Methane

MATERIAL ID : **Set No. 1, ALM FR-106**

<u>SPECIMEN</u>	<u>NOMINAL WIDTH</u> inches	<u>NOMINAL LENGTH</u> inches	<u>NOMINAL THICKNESS</u> inches	<u>TIME TO EXTINGUISH</u> seconds	<u>BURNED LENGTH</u> inches	<u>AFTER GLOW TIME</u> seconds	<u>DRIP TIME TO EXTINGUISH</u> seconds
1	3.0	8.0	0.040	<1	4.7	0	1.3
2	3.0	8.0	0.041	<1	4.5	0	1.2
3	3.0	8.0	0.040	<1	4.5	0	1.3
AVERAGE:				<1	4.6	0	1.3
MAXIMUM ALLOWED (AVERAGE):				15	6	---	3

RESULTS : The test result averages for the above noted material, submitted and identified by the client, meet the requirements of 14 CFR25.853(a), Amendment 25-83, Appendix F, Part I, Paragraph (a)(1)(i); BSS 7230 Revision H, Figure 12 (F1); and ABD0031, Issue F, Section 7.1.1, Page 18 when tested for 60 second vertical ignition.

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Flammability Test Results

FAR 25.853 / AWM 525.853 (a) Appendix F Part I, (a) 1, (i) 60 second

FAR 25.853 / AWM 525.853 (a) Appendix F Part I, (a) 1, (ii) 12 second

Customer: **Marquez**

Test Plan: N/A

Sample ID Sample # 232

PO# C017626, Tracking Number 28102-41

Flame Temperature: 1836 F

THK: **0.50**

Result	Extinguish Time [seconds]	Burn Length [inches]	Drip Extinguish Time [seconds]
1	0.00	1.25	0.6
2	0.00	1.00	N.D.
3	0.00	1.00	N.D.
Average	0.00	1.08	0.6

Criteria: Per FAR 25.853, Appendix F Part I


Test Type	Extinguish. Time [seconds]	Burn Length [inches]	Drip Extinguish Time [seconds]
(a),1,(i)	15	6	3
(a),1,(ii)	15	8	5

Pass

Fail

Tested by: B. Jasinska

Date: 7-Nov-2008

Witnessed by: 
 Bogdan Kmicciak

Testing was performed in accordance with Section 1.0 of Aircraft Material Fire Test Handbook, DOT/FAA/AR-00/12, dated April 2000.



Fiche de demande de réalisation
d'échantillons

FO-100-06

Rev.: C

propriétaire : Département Qualité

1 Demande

Demande : 232
Date de demande : 05 novembre 2008
Laboratoire de test : KMLEX Aviation
Raison de la demande :

#BDT : D003229
Delai de realisation : ASAP
PO pour test : C017626

PO client
Reception matiere
Validation de matiere en cours de developpement
Qualification

Matériaux à tester :

# Code	# Lot
FR-106 0.500	N/A

2 Caractéristiques des échantillons

Dimension : 3 X 12 Epaisseur/couches : 0.5
Quantité : 3
Structure : Laminage wet lay-up
 Laminage pré-preg
 Infusion
 Coulage (casting)
 Construction sandwich

Fabrication des echantillons selon MTPS-00041

3 Contrôle visuel des echantillons par le departement qualité

STAMP

	PASS	FAIL	Comments
Dimension :	X		
Aspect :	X		
Identification	X		

4 Test(s) demandé(s)

FAR 25.853 Appendix F Part I, (a) 1, (i) vertical 60 seconds
FAR 25.853 Appendix F Part I, (a) 1, (ii) vertical 12 seconds
FAR 25.853 Appendix F Part I, (a) 1, (iv) horizontal 15 seconds

Autre; (spécifiez) :

5 Certificat de Conformité / Certificate of Compliance

Je certifie par la présente que tous les articles énumérés ci-haut sont conformes après inspection aux spécifications décrites ci-dessus
I hereby certify that the whole of the material listed above has been inspected and conforms to the above specifications .

Date : 05/11/2008
Nom/Name : Eric Lanthier
Signature :

STAMP



Fiche de demande de réalisation
d'échantillons

FO-100-06

Rev.: C

propriétaire : Département Qualité

1 Demande

Demande : 231
Date de demande : 05 novembre 2008
Laboratoire de test : KMLEX Aviation
Raison de la demande :

#BDT : D003229
Délai de réalisation : ASAP
PO pour test : C017626

PO client
Reception matiere
Validation de matiere en cours de developpement
Qualification

Matériaux à tester :

# Code	# Lot
FR-106 0.075	N/A

2 Caractéristiques des échantillons

Dimension : 3 X 12 Epaisseur/couches : 0.0765
Quantité : 3
Structure : Laminage wet lay-up
Laminage pré-preg
Infusion
Coulage (casting)
Construction sandwich

Fabrication des échantillons selon MTPS-00041

3 Contrôle visuel des échantillons par le département qualité

STAMP

	PASS	FAIL	Comments
Dimension :	X		
Aspect :	X		
Identification	X		

4 Test(s) demandé(s)

FAR 25.853 Appendix F Part I, (a) 1, (i) vertical 60 seconds
FAR 25.853 Appendix F Part I, (a) 1, (ii) vertical 12 seconds
FAR 25.853 Appendix F Part I, (a) 1, (iv) horizontal 15 seconds

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Nom/Name : Eric Lanthier
Signature :

STAMP