

Lantals lab services for aircraft interior components



Lab services



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Key advantages

Lantal's laboratory services offers the following compelling advantages:

- **Equipped to perform all relevant airworthiness tests for interior components**
- **The laboratory is accessible for third parties**
- **Lead-time of test report of maximum 15 working days after receipt of ready-made specimen**
- **Additional services like competent consulting, witnessing by certified CVEs, conformity inspections and flammability test trainings**
- **Every product manufactured by Lantal is tested and delivered with a flammability test report**

Certification of laboratory services

In connection with the Production Organisation Approval (POA), the Swiss Federal Office of Civil Aviation (FOCA) audited Lantal's lab in Langenthal.

Our certification according to EASA 21 Subpart G and J enables Lantal to supply ready-made seat covers, headrest covers, curtains, cut carpets, and pneumatic components with the release certificate (EASA Form 1).

Lantal's laboratory in Langenthal is accredited as a center for fire tests pursuant to ISO/IEC 17025 (STS 0583).

This approval allows our lab to conduct fire tests listed in the scope of accreditation on materials and components used in aircraft interiors.

Tests

- **Flammability test vertical 60 or 12 sec.:**
as per specification FAR/CS 25.853, App. F, Part I, (a)(1)(i) and (ii), Airbus AITM 2-0002A/B or BSS 7230
- **Flammability test horizontal:**
as per specification FAR/CS 25.853, App. F, Part I (a)(1)(iv) and (v) or AITM 2-0003
- **45 degree Bunsen Burner test:**
as per specification FAR/CS 25.853, App. F, Part I (a)(2)(ii) and (iii) or Airbus AITM 2-0004
- **Oil Burner Tests for seat cushions:**
as per specification FAR/CS 25.853, App. F, Part II or AITM 2-0009
- **Heat release rate (OSU test):**
as per specification FAR/CS 25.853, App. F, Part IV or AITM 2-0006
- **Smoke test:**
as per specification FAR/CS 25.853, App. F, Part V or Airbus AITM 2-0007/2-0008 or BSS 7238
- **Toxicity test:**
as per specification AITM 3-0005 (ABD 0031)? or BSS 7239

In connection with the Design Organisation Approval, our CVE Cabin Safety is able to witness your tests.



Flammability tests

Flammability test – as per specification FAR/CS 25.853, App. F, Part I, 60 or 12 sec. vertical, horizontal, 45° test for cargo compartments.

For each compartment occupied by the crew or passengers, the following applies: Materials must meet the applicable test criteria of App. F, Part I, regardless of the passenger capacity of the airplane.

Vertical Bunsen burner test

FAR / CS 25.853, App. F, Part I
 AITM 2-0002 A/B or BSS7230
 Aircraft Materials Fire Test Handbook Chapter 1

Requirements:

Appendix F, Part I	(a)(1)(i)	(a)(1)(ii)
Ignition time:	60 sec.	12 sec.
Average extinguishing time:	max. 15 sec	max. 15 sec
Average burn length:	max. 152 mm	max. 203 mm
Average drip extinguishing time:	max 3 sec.	max. 5 sec

Size/number of test samples:

Size:	305 mm x 75 mm
Textiles:	4 each warp & fill direction
Leather:	4 samples each

Panels, etc. 4 samples each if flammability characteristics are the same in different directions

Horizontal burner test

FAR / CS 25.853 App. F, Part I
 AITM 2-0003
 Aircraft Materials Fire Test Handbook Chapter 3

Requirements:

Appendix F, Part I	(a)(1)(iv)	(a)(1)(v)
Average burn rate	64 mm/min	102 mm/min
Size/number of test samples:		
Size:	305 mm x 70 mm	
Textiles:	4 each warp direction	
	4 each fill direction	
Leather:	4 samples each	
Panels, etc.:	4 samples each if flammability characteristics are the same in different directions	

45-degree Bunsen burner test

FAR / CS 25.853, App. F, Part I
 AITM 2-0004
 Aircraft Materials Fire Test Handbook Chapter 2

Requirements:

Appendix F, Part I **(a)(2)(ii) and (iii)**

The flame may not penetrate (pass through) the material during application of the flame or subsequent to its removal. The average flame time after removal of the flame source may not exceed 15 seconds and the average glow time may not exceed 10 seconds.

Size/number of test samples:

Size:	240 x 240 mm
Number:	4 samples

Seat cushion test



In addition to meeting the requirements of subparagraph (a) of FAR / CS 25.853, App. F, Part I, seat cushions, except those on flight crew member seats, must meet the test requirements of App. F, Part II.

Oil burner test for seat cushions

FAR/CS 25.853, App. F, Part II
AITM 2-0009
Aircraft Materials Fire Test Handbook Chapter 7

Requirements

Weight loss: max. 10%

The individual percentage weight loss of at least two-thirds of the total number of samples tested will not exceed 10 percent. The combined average percentage weight loss of all samples tested will not exceed 10 percent

Burn length: max. 432 mm (17 in)

For each of the burn lengths measured, the burn length may not exceed 17 inches (432 mm) on at least two-thirds of the total number of samples tested. Should the burn length on the underside of the horizontal (cushion) assembly extend to the frame angle support farthest from the burner cone, it is considered to have exceeded the 17-inch burn length criteria i.e., it has reached the side of the cushion opposite the burner, and is a failure.

Flame temperature: Average. 982 °C
Apply time: 2 minutes
Flame length: Approx. 300 mm
Seat Test Sample Set: 4 horizontal and 4 vertical assemblies

Size/number of test samples:

Horizontal assembly

Size: 508 x 457 mm / 102 mm thick
Number: at least 3 assemblies

Vertical assembly

Size: 635 x 457 mm / 51 mm thick
Number: at least 3 assemblies

Construction

A seat test sample consists of one vertical assembly and one horizontal assembly. Both assemblies represent the same production cushion constructions; that is, both vertical and horizontal assemblies in the seat test sample have identical construction and materials proportioned to correspond to either the actual seat bottom or back cushion, but not both. For various reasons, seat bottom and back cushions on actual aircraft seats are typically slightly different.

NOTE: Foam headrest and footrest cushions should be treated the same as vertical and horizontal assemblies and tested as complete samples if their construction is different from the seat bottom (horizontal) and/or seat back (vertical) cushions. In some cases, it may be reasonable to include the headrest as part of the seat back cushion. In such a case, the cushions should be constructed as for foam combinations.

Each specimen tested will be fabricated using the principal components (i.e. foam core, flotation material, fire-blocking material, if used, and dress covering) and assembly processes (representative seams and closures) intended for use in the production articles.



In addition to Part I, the following interior compartments of airplanes with passenger capacities of 20 or more must also meet the requirements of App. F, Part IV and V:

Interior ceiling and wall panels, other than lighting lenses and windows; partitions, other than transparent panels needed to enhance cabin safety. Galley structure, including exposed surfaces of stowed carts and standard containers. Large cabinets and cabin stowage compartments, other than underseat stowage compartments for stowing small items such as magazines and maps.

Heat release test (OSU test)

FAR/CS 25.853, App. F, Part IV
 AITM 2-0006
 Aircraft Materials Fire Test Handbook Chapter 5

Requirements

FAR/CS 25.853, App. F, Part IV

Total heat release:	max. 65 KW min/m ² at 2 min
Peak heat release:	max. 65 KW/m ²
Apply time:	5 minutes
Heating elements:	3.5 W / cm ²
	1 lower pilot burner
	1 upper pilot burner
Air inlet:	40 l / s

Size/number of test samples:

Size:	150 x 150 mm / up to 45 mm thick
Number:	4 samples



Smoke and toxicity test

FAR/CS 25.853 App. F, Part V
 AITM 2-0007 (ABD 0031) or BSS 7238
 Aircraft Materials Fire Test Handbook Chapter 6

Requirements

Max. Ds. 4 min. = 200
 According to ABD 0031 (NBS smoke chamber) and BSS, depending on the test material.

Toxicity test

AITM 3-0005 (ABD 0031) or BSS 7239

Requirements

According to ABD 0031 and BSS, depending on the test material.

Size/number of test samples:

Size:	75 x 75 mm
Number:	5 specimens for flaming mode and 5 specimens for non flaming mode



FAQ

Seat cushion test (Oil Burner Test for seat cushions) – What is a certification by similarity?

A certification by similarity is a simplified test that applies to a new product under certain circumstances. For instance, a new generation of upholstery fabrics does not have to undergo extensive seat burn testing if no major changes in composition and weave are involved. In such a case, a simple Bunsen burner test of the new material is sufficient for recertification provided it is better than or equal to the old one in terms of burn length. This is what the FAA says:

Similar dress covering (from FAA Advisory Circular 25.853-1, "Flammability of Aircraft Seat Cushions," Sections 5d[1] and [2]) refers to dress covering materials having the same material composition, weave style, and weight. Material blends can be considered similar when the constituent materials fractions are the same, ± 6 percent, as the tested material. Examples of different weave styles include plain, jacquard, or velvet. With regard to weight, lighter fabrics are generally more critical than heavier fabrics. Due to the severe shrinking and unpredictable distortion

experienced by leather dress cover materials, similarity approvals for leather are not recommended.

Certification by similarity to previously tested dress covers should be limited to instances where the material composition is the same and the weight and weave type are essentially the same. In all cases, results of the Bunsen burner test per FAR 25.853(b) for the new material should be equal to or better with respect to burn length than the tested material. In addition, it may be useful to evaluate the weight loss and burn length results of the oil burner test to determine if the tested material is a good basis for similarity; that is, the closer weight loss and burn length with the oil burner are to the maximum allowed, the more alike the dress covering materials should be for similarity. In general, test data and resultant experience gained from conducting tests should also be a major source of information to determine if approval by similarity is acceptable.

Is there a certification by similarity for leather?

Unlike the common certification by similarity for upholstery, an analogous test for leather is not practicable. This is what the Federal Aviation Administration FAA says in its Advisory Circular 25.853-1, "Flammability Requirements for Seat Cushions," Section 5.d.1: (...) Due to the severe shrinking and unpredictable distortion experienced by leather dress cover materials, similarity approvals for leather are not recommended.

Another factor to be considered is the tanning and dyeing process. Even if the same grade of leather is used for the renewal of upholstery, our experience with seat manufacturers confirms that a new seat burn test is required if the customer chooses a different color.

About Lantal

Founded

1886

A total of 115 looms are available for the production of fabrics and carpets.

Quality Management in Switzerland

ISO 9001

AS/EN 9100 since 2005

Quality Management in USA

ISO 9001

BSI since 1997

Lab services in Switzerland

The independent fire test lab is authorized to conduct the corresponding tests according to the regulations of the international airline authorities since 1978.

ISO/IEC 17025 (STS 0583) accreditation since 2012

A broad customer base counts on Lantal

Lantal's fire test labs are relied on and trusted by numerous valued customers. Many OEMs and suppliers rely on Lantal's professional lab services, which are carried out by experienced technicians.

Contact

Contact Lantal and discuss your needs with us. Rest assured that we can address your requirements.

Contact for laboratory services

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Domenico Oliveto

Administration

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Contact for certification

Heiko Nüssel

Executive Vice President Compliance & Certification

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EASA certificate Production Organisation Approval (POA)

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Office of Civil Aviation FOCA

**Production Organisation
Approval Certificate**

Reference: CH.21G.0012

Pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council and to Commission Regulation (EC) No 748/2012 for the time being in force and subject to the condition specified below, FOCA hereby certifies:

LANTAL TEXTILES AG

Dorfgasse 5, CH-4900 Langenthal

as a production organisation in compliance with the Annex (Part 21), Section A, Subpart G of Regulation (EC) No 748/2012, approved to produce products, parts and appliances listed in the attached approval schedule and issue related certificates using the above references.

Conditions:

1. The approval is limited to that specified in the enclosed Terms of Approval, and
2. This approval requires compliance with the procedures specified in the approved production organisation exposition, and
3. This approval is valid whilst the approved production organisation remains in compliance with the Annex (Part 21) of Regulation (EC) No 748/2012.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

Date of original issue: 01.12.2006
Date of this revision: 17.12.2015
Revision Nr.: 5

Christian Hegner
Vice Director Safety Division - Aircraft

Gianmario Giacomelli
Head of Section Design and Production

EASA Form 55a Issue 2

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Office of Civil Aviation FOCA

Terms of Approval TA: CH.21G.0012

This document is part of Production Organisation Approval Number CH.21G.0012
issued to: Lantal Textiles AG

Section 1	Scope of Work	Products / Categories
	Production of C2 Parts	Parts for pneumatic comfort system Parts of textile material for aircraft interiors

For details and limitations refer to the Production Organisation Exposition, Section 2.4.4.2

Section 2 **Locations**
Dorfgasse 5, CH-4900 Langenthal
Berghofstrasse 1, CH-4917 Melchnau

Section 3 **Privileges**
The production organisation is entitled to exercise, within its Terms of Approval and in accordance with the procedures of its Production Organisation Exposition, the privileges set forth in 21.A.163. Subject to the following:
Prior to approval of the design of the product an EASA Form 1 may be issued only for conformity purposes.

Date of original issue: 01.12.2006
Date of this revision: 17.12.2015
Revision Nr.: 5

Gianmario Giacomelli
Head of Section Design and Production

Thomas Hauser
Inspector Section Design and Production

EASA Form 55b Issue 2

AS/EN 9100 certificate



Certificate



Appendix

Appendix of main certificate H40347

SQS accredited under the Aerospace Registration Management Program herewith certifies that the organisation named below has been audited in accordance with the requirements of EN 9104-001:2013 and has a management system which meets the requirements of the standards specified below.

Lantal Textiles AG
Dorfasse 5
4900 Langenthal
Switzerland

Further sites according to appendix

Several Sites

Scope

Design, production and sales of textile solutions
for commercial and private aircraft

Normative base

EN9100:2018
equivalent to
AS9100 D
JISQ 9100:2016

Quality Management System –
Requirements for Aviation,
Space and Defence Organisations
Requirements based on ISO 9001:2015

Central Function	Scope	Norm / Revision	Reg. no.	Validity
Lantal Textiles AG Dorfasse 5 4900 Langenthal Switzerland	Design, production and sales of textile solutions for commercial and private aircraft	EN 9100:2018	H40347	18.12.2022 17.12.2025
Locations	Scope	Norm / Revision	Reg. no.	Validity
Lantal Textiles AG Berghofstrasse 1 4917 Melchnau Switzerland	Design, production and sales of textile solutions for commercial and private aircraft	EN 9100:2018	H40347	18.12.2022 17.12.2025

Reg. no. H40347
Page 1 of 2

Issue date 18.12.2022
Expiry date 17.12.2025
Re-issue date 12.11.2022

Date of audit 05.09.2022 – 07.09.2022

Reg. no. H40347
Page 2 of 2

Issue date 18.12.2022
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Re-issue date 12.11.2022

Date of audit 05.09.2022 – 07.09.2022

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A. Grisani
A. Grisani, President SQS

F. Müller
F. Müller, CEO SQS



Swiss Association for Quality and Management Systems (SQS)
Bernstrasse 103, 3052 Zollikofen, Switzerland

4403_27-November-2019-Version 2.1



A. Grisani
A. Grisani, President SQS

F. Müller
F. Müller, CEO SQS



Swiss Association for Quality and Management Systems (SQS)
Bernstrasse 103, 3052 Zollikofen, Switzerland

Accreditation document fire test lab



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO
Swiss Accreditation Service SAS

Swiss Confederation

Based on the Accreditation and Designation Ordinance dated 17 June 1996 and on the advice of the Federal Accreditation Commission, the Swiss Accreditation Service (SAS) grants to

Lantal Textiles AG
Fire Test Lab / Brandprüflabor
Dorfasse 5
4900 Langenthal



Period of accreditation:
13.11.2022 until 12.11.2027
(1st accreditation: 13.11.2012)

the accreditation as

Testing laboratory for fire tests in the field of railway and aviation typical testing

International standard: ISO/IEC 17025:2017

Swiss standard: SN EN ISO/IEC 17025:2018

3003 Berne, 04.11.2022
Swiss Accreditation Service SAS

pp R. Flück

Head of SAS
Konrad Flück

SAS is a signatory of the multilateral agreements of the European co-operation for Accreditation (EA) for the fields of testing, calibration, inspection and certification of management systems, certification of personnel and certification of products, processes and services, of the International Accreditation Forum (IAF) for the fields of certification of management systems and certification of products, processes and services and of the International Laboratory Accreditation Cooperation (ILAC) for the fields of testing, calibration and inspection.