

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.128

National Policy

Effective Date:
7/12/10

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7/12/11

SUBJ: Flammability Testing of Interior Materials Used in Repairs and Alterations

- 1. Purpose of This Notice.** This notice provides guidance to aviation safety inspectors (ASI) and advises maintenance providers regarding flammability testing of materials used in repairs and alterations of aircraft interiors. This supersedes the AFS-1 Memo, Flammability Testing of Materials, dated November 17, 2007.
- 2. Audience.** The primary audience for this notice is Flight Standards District Office (FSDO), Certificate Management Office (CMO), and International Field Office (IFO) ASIs who are responsible for certificate management oversight. The secondary audience includes Flight Standards branches and divisions in the regions and in headquarters.
- 3. Where You Can Find This Notice.** You can find this notice on the MyFAA employee Web site at https://employees.faa.gov/tool_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at <http://fsims.avs.faa.gov>. Operators may find this information on the Federal Aviation Administration's (FAA) Web site at <http://fsims.faa.gov/>.
- 4. Deviations from This Notice.** Any deviation from this notice must have AFS-300's written concurrence prior to the deviation.
- 5. Background.**

 - a. Flammability Testing.** Flammability testing is necessary for repairs and alterations to interior materials and components if required in the aircraft certification basis. The Type Certificate Data Sheet (TCDS) (or aircraft specification) for the specific aircraft identifies the certification basis (e.g., Title 14 of the Code of Federal Regulations (14 CFR) parts 23 and 25). This generally includes materials used in crew, passenger, and cargo compartment interiors, and other materials identified in the certification basis. Title 14 CFR part 43, § 43.13(b) requires in part, that each person maintaining or altering aircraft shall do that work in such a manner and use materials of such a quality that the condition of the aircraft will be at least equal to its original or properly altered condition with respect to qualities affecting airworthiness. The person authorized by § 43.7 to approve an aircraft for return to service after repair or alteration is responsible for determining that the materials used are suitable and meet applicable requirements.

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b. Maintenance. Flammability testing of material specimens is not maintenance. This is comparable to chemical and physical destructive testing of specimens of other materials used in aircraft repairs and alterations (e.g., aluminum and steel), that is not maintenance. As such, flammability testing is not work performed on the material to return it to “at least its original or properly altered condition”. A flammability test determines whether a material or component meets the regulatory requirements of the aircraft airworthiness standards so it may be used as part of a design, repair, or alteration. Accordingly, flammability testing is not maintenance in accordance with part 43, and authorizing a repair station to perform these tests under 14 CFR part 145 is *not* appropriate.

c. Approval. The FAA will not approve or certificate flammability test facilities.

6. Regulations, Legal Rulings and Guidance.

a. Airworthiness Standards. Flammability testing is set forth in the airworthiness standards such as part 23 and part 25, not in the maintenance function set forth in part 43.

b. Definitions. Title 14 CFR part 1, § 1.1 defines maintenance as the “inspection, overhaul, repair, preservation, and the replacement of parts”, but does not include preventive maintenance.

c. Section 43.13(b). Section 43.13(b) requires, in part, that each person maintaining or altering aircraft shall do that work in such a manner and use materials of such a quality that the condition of the aircraft will be at least equal to its original or properly altered condition with respect to qualities affecting airworthiness.

d. Who May Perform Maintenance. Pursuant to part 145, § 145.201, a certificated repair station may only “perform maintenance, preventive maintenance, or alterations in accordance with part 43 on any article for which it is rated and within the limitations in its operations specifications.” Limited ratings are only for maintenance and alteration of a “particular type of airframe, powerplant, propeller, radio, instrument, or accessory,” or if a repair station performs only “specialized maintenance requiring equipment and skills not ordinarily performed under other repair station ratings.”

e. Legal Interpretations. FAA legal interpretations have concluded that flammability testing is not a maintenance function set forth in part 43. The purpose of a flammability test is to ensure that a material conforms to the requirements of the airworthiness standards, so one may use it as part of a design, maintenance, or alteration. Accordingly, flammability testing is not maintenance that one may conduct in accordance with part 43, and authorizing a repair station to perform these tests under a limited rating is not permissible.

f. Authorization. The regulations set forth test procedures, but do *not* state who has authorization to perform the tests or collect the data.

g. Approval of Data. Aircraft Certification Offices (ACO) and specifically authorized Designated Engineering Representatives (DER) may approve technical data collected from flammability testing. In addition, an organization delegation authorization (ODA), following

procedures approved by the FAA, may approve flammability test data for major repairs or major alterations.

h. FAA Order 8110.37 (current edition). Existing guidance in the current edition of FAA Order 8110.37 Designated Engineering Representative (DER Handbook), paragraph 4-13, Flammability Testing of Interior Materials, states: “A DER with authority to witness flammability tests on our behalf must know how the material or part will be installed on an end product and must identify that use on the FAA Form 8110-3 [DER Performance Evaluation Form] For certification projects, a DER makes this finding of compliance per an approved test plan and using a conformed test article that represents the final configuration. For a specific repair or alteration, a DER makes this finding of compliance per an acceptable method as agreed by his appointing ACO, which will include a defined test process and means to ensure test article conformity. The FAA Form 8110-3 may not be used by a DER to attest to regulatory compliance, to support lot quality control, or in support of [Technical Standard Order] TSO authorizations.”

7. Guidance.

a. Who Can Perform Testing. Any person who can perform the testing to the requirements of the applicable airworthiness standard may accomplish flammability testing. The FAA will not approve or certificate flammability test facilities. An ACO, DER, or ODA must approve data resulting from the testing when approved data is a requirement to support a major repair or major alteration. As with any maintenance or alteration, the person who approves the aircraft for return to service is responsible for doing that work in such a manner and using materials of such a quality, that the aircraft worked on will be at least equal to its original or properly altered condition.

b. Material Specimen Tests. Material specimen tests may not be representative of the material configuration as installed in the aircraft, and may not be sufficient to determine that the complete repair or alteration meets all requirements. For example, the flammability characteristics of a seat or interior panel covering material alone may be different from the material as installed on the part with foam, insulation, adhesive, etc.

c. Ratings and Capabilities. The FAA will not authorize new limited ratings for flammability testing, and repair stations must not add flammability testing to the capabilities lists.

d. Existing Testing and Ratings. Existing flammability testing ratings and capabilities may remain in effect for 90 days from the effective date of this notice.

e. Types of Certificates. ASIs shall advise repair stations to obtain a DER, or obtain a Supplemental Type Certificate ODA (STC ODA), or Major Repair, Alteration, and Airworthiness ODA (MRA ODA), and surrender flammability test ratings and capabilities lists. Repairmen must also surrender certificates for flammability testing of materials.

f. Surrendering Ratings. After 180 days, any repair station that has not surrendered the rating or capability will receive a Notice of Proposed Certificate Action in accordance with FAA Order 2150.3, current edition, Compliance and Enforcement Program.

g. Flammability Test Data. ASIs will not field approve flammability test data for materials.

8. Flammability Test Documentation. The following are alternative methods for approval of flammability test data:

a. Data for Major Repairs and Alterations. Data for major repairs and alterations must receive approval by one or a combination of the following alternatives:

(1) DERs use FAA Form 8110-3, Statement of Compliance with the Federal Aviation Regulations, only to approve flammability test data associated with specific certification projects (design approvals), major repairs, and major alterations. This form is not for quality assurance or material certification.

(2) Appropriately authorized ODAs use FAA Form 8100-9, Statement of Compliance with Airworthiness Standards, to approve flammability test data for major repairs or major alterations only for a specified product (by make, model, and serial number).

(3) A letter from an ACO approves specific flammability test data.

b. FAA Form 8130-3. FAA Form 8130-3, Authorized Release Certificate, Airworthiness Approval Tag, is not for flammability testing of materials; as such testing is not maintenance in accordance with part 43. A flammability test is not work performed on the material to return it to “at least its original or properly altered condition.” In accordance with FAA Order 8130.21, Procedures for Completion and Use of the Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tag, current edition, FAA Form 8130-3 is for approval for return to service of products and parts, not materials.

c. Acceptable Data for Minor Repairs or Alterations. When a repair or alteration is not major and does not need FAA-approved data, the flammability testing documentation should be such that it meets the needs of the person approving the aircraft for return to service. The documentation should provide evidence that the tests complied with FAA standards and include the test results necessary to show compliance. For minor repairs and alterations, any test data that shows compliance with the aircraft’s certification basis is acceptable, without ACO, DER, or ODA findings or approvals. Certification of Conformance statements (or similar) are not adequate. The test data must include specifics such as burn length, flame time, burn rate, glow time, etc. as required by the regulations.

d. Type of Data Approval. Consider the entire interior repair or alteration in determining the type of data approval required. A series of “minor” determinations should not circumvent the requirement for approved data for the overall repair or alteration.

e. Aircraft Records. Flammability test data need not be kept in the aircraft records after approval for return to service, although it is recommended.

9. Disposition. We will permanently incorporate the information in this notice to FSIMS before this notice expires. Direct questions regarding this notice to the Aircraft Maintenance Division, AFS-300, Tony Janco at (781) 238-7229. This notice has undergone coordination with the Aircraft Engineering Division, AIR-100.



for

John M. Allen
Director, Flight Standards Service