



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
National Policy

ORDER  
8110.113

11/22/10

**SUBJECT:** Approval of Flammability Test Data in Support of Major Repairs or Major Alterations

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**1. Purpose of This Order.** This order describes:

a. What you, as an aircraft certification office (ACO), must do to authorize a designated engineering representative (DER) to approve flammability test data for major repairs or major alterations.

b. What you, as an ACO or authorized DER, must do to approve flammability test data to support major repairs or major alterations.

**Note:** This order supplements FAA Order 8110.37, *Designated Engineering Representative (DER) Handbook*, dated August 10, 2006, including paragraph 4-13 (see appendix A, paragraph 2. of this order) and FAA Order 8100.8, *Designee Management Handbook*.

**2. Audience.** All ACO staff and any DER authorized to approve flammability data for major repairs or major alterations.

**3. Where Can I Find This Order?** You can find this order on the Directives Management website at MyFAA employees website, [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://employees.faa.gov/tools_resources/orders_notices/) or the FAA's Regulatory and Guidance Library (RGL) website at <http://rgl.faa.gov>

**4. Approvals Outside the Scope of This Order.** This order does not apply to an organization designation authorization (ODA) or its unit members. ODA unit members must follow the procedures in their approved manual. In order for an ODA to utilize the procedures defined within this order the ODA's organization management team (OMT) must approve an ODA manual that includes procedures equivalent to those in this order.

**5. Deviations from This Order.**

a. **ACOs.** If you are an ACO and want to deviate from any part of this order, you must substantiate and document the proposed deviation, send it to the Aircraft Engineering Division (AIR-100), and get AIR-100's written concurrence.

b. **DERs.**

(1) If you are a DER and want to deviate from this order, you must notify your appointing ACO and get your appointing ACO's written concurrence prior to approving any flammability data in support of a major repair or major alteration. Your appointing ACO must then obtain approval from AIR-100 under paragraph 5.a. above.

(2) If you are a DER and want to deviate from published technical policy and guidance, you must notify your appointing ACO prior to approving any flammability data in support of a major repair or major alteration. You must do this even if the FAA (other than your appointing ACO) approves the deviation.

#### **6. What an ACO Must Do When Authorizing a DER to Approve Flammability Data in Support of Major Repairs or Major Alterations.**

a. To authorize a DER to approve flammability data in support of major repairs or major alterations, you as an appointing ACO, *must* ensure the DER is qualified to:

- (1) Determine the applicable certification basis including the operating rules if applicable
- (2) Approve test plans.
- (3) Disposition non-conformities.
- (4) Witness the flammability test.
- (5) Approve technical data resulting from flammability testing.
- (6) Review and approve corresponding descriptive data.

**Note:** You *must not* authorize a DER to approve flammability data for major repairs or major alterations if the DER is not qualified to perform *all* of these functions.

b. As the appointing ACO, you are responsible for the final determination of a DER's continuing qualifications. You *must*, therefore:

- (1) Clearly identify that you authorize the DER to approve flammability data for major repairs or major alterations.
- (2) Periodically review the DER's approved data packages to ensure the DER remains qualified and is following acceptable procedures.
- (3) Periodically assess if the DER is appropriately addressing conformity of the test article.

#### **7. What an ACO or a DER Must Do When Approving Flammability Data in Support of Major Repairs or Major Alterations.**

**a. Test Plans.** If you are an ACO or a DER approving a test plan, you are responsible to ensure the resulting data is sufficient to demonstrate that the repair or alteration design meets the referenced flammability airworthiness requirements. Therefore, make sure that:

- (1) Test articles represent the “as installed” configuration, if required by the aircraft’s certification basis or operating requirements.
- (2) Test articles use the same material, manufacturing processes, and assembly processes as the major repair or major alteration.
- (3) Descriptive data for the test articles and the major repair or major alteration are complete.
- (4) The test plan clearly identifies all calibration requirements, equipment, apparatus, and instrumentation required for testing in the test plan. The test plan may incorporate these items by reference if it explicitly cites the applicable regulatory requirements.
- (5) The test plan clearly defines the flammability requirements that the test supports.

**b. Conformity Inspections.** Before you, as an ACO or a DER, may witness a flammability test, each specimen/coupon must conform to the descriptive data for the test articles defined by the approved test plan and/or descriptive data. Before the applicant presents any test article to you for a flammability test, ensure the applicant performs conformity inspections on all test specimens/coupons. You *must*:

- (1) Ensure the applicant provides a completed FAA Form 8130-9, *Statement of Conformity*, for each test article presented for testing. You may accept the applicant’s conformity of the test articles without additional FAA conformity inspection. This supersedes the requirement for FAA conformity in Order 8110.37, *Designated Engineering Representative (DER) Handbook*, and Order 8110.4, *Type Certification*.
- (2) Ensure any unsatisfactory conditions identified by the applicant in the test article/coupon are acceptable. If the unsatisfactory conditions are acceptable, you must clearly identify them and provide justification for accepting them in the test report that you approve.
- (3) Contact the geographic ACO if you determine, due to reasons such as: the complexity of the test article, the complexity of the design, the complexity of the required testing, or concerns over the applicant’s statement of conformity, that an FAA conformity inspection may be necessary. The geographic ACO will be responsible for making the final determination as to whether an FAA conformity inspection is required.

**Note:** The DER is not responsible for ensuring conformity of parts or installation of those parts on the aircraft.

**c. Witnessing of Flammability Testing.** When you witness a flammability test, you must adhere to the applicable regulations and the most recent applicable technical published policy and guidance. When you witness a test, you *must* ensure:

(1) All test equipment, apparatus, and instrumentation, regardless of location (that is, test facility) or level of certification, meets all applicable regulatory requirements and the most recent applicable technical published policy and guidance before you witness any flammability test.

(2) The test facility is capable of generating accurate, reliable, and complete test data. You must ensure you've addressed all aspects of the regulations applicable to the test to be performed (for example, Title 14 of the Code of Federal Regulations (14 CFR) part 25, Appendix F), including any necessary calibration (or recalibration) requirements. You also must ensure the test facility satisfies the requirements of all applicable policy and guidance for flammability testing.

**Note:** The FAA doesn't approve test facilities. You are responsible, as described above, even if evidence of previous FAA "approval" of the facility is provided.

**d. ACO Approval of Flammability Data.** As an ACO, you approve technical data such as test plans, test reports, and descriptive data associated with flammability testing of major repairs or major alterations *only* in support of a request by an FAA office and only by issuing an FAA memorandum. When doing that, you *must* follow all applicable requirements of this order. The ACO or the appropriate federal records center must maintain a copy of all related records.

**Note:** If you as an ACO delegate the witnessing of a flammability test to support a major repair or major alteration to a DER, the DER must meet the qualifications defined in this order.

**e. DER Approval of Flammability Data.** As a DER, you approve technical data such as test plans, test reports, and descriptive data associated with flammability testing of major repairs or major alterations *only* by issuing FAA Form 8110-3, *Statement of Compliance with the Federal Aviation Regulations*. When doing that, you *must* follow all applicable requirements of FAA Order 8110.37 and this order.

(1) DER Authorization. As a DER, you *must* obtain authorization from the managing ACO before you witness any test or approve any technical data for major repairs or major alterations. (See FAA Order 8110.37, Paragraph 4-12.c.)

(2) Test Plan. For approval of test plans, you *must* include:

(a) A note in the "Purpose of Data" block indicating "Test plan approval only, in support of a major repair or major alteration."

(b) A note in the "Title" block indicating "Approval of test results is required."

(c) Notations required by FAA Order 8110.37, Paragraph 4-12.f. for data submittals associated with a major repair or major alteration.

(3) Test Reports. For approval of test reports, you *must* include:

(a) A listing of the descriptive data for the major alteration or major repair for which the data supports compliance, including either revision level, revision date, or other method of configuration control.

(b) Notations required by FAA Order 8110.37, Paragraph 4-12.f. for data submittals associated with a major repair or major alteration.

(c) An indication of whether or not compliance with additional regulations is required, following the guidance in FAA Order 8110.37, Paragraph 4-12.h.

(4) Record Keeping. You must keep a copy of the records associated with your approvals for the duration of your authorization. This includes records of the following:

(a) Requests for conformity (if issued).

(b) Associated conformity documents including the applicant's completed FAA Form 8130-9.

(c) Disposition of any non-conformities.

(d) Technical data, including test plans, test reports, descriptive data, and specifications, approved by FAA Form 8110-3.

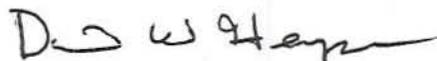
(e) Completed FAA Form 8110-3.

(5) Distribution of Form 8110-3 and accompanying data and records. You *must* submit:

(a) A copy of FAA Form 8110-3 and the approved data to the owner/operator or repair station that requested the approval.

(b) The original FAA Form 8110-3 to your appointing ACO.

(c) A copy of the approved data and conformity records listed in paragraphs 7.e.(4)(a) to 7.e.(4)(c) above to your appointing ACO, *but only* if your appointing ACO specifically requests it. This supports oversight of your appointment.



David W. Hempe  
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Aircraft Certification Service

## Appendix A. Administrative Information

**1. Distribution.** Distribute this order to the following: The Washington headquarters branch levels of the Aircraft Certification Service, Flight Standards Service, the Regulatory Support Division in Oklahoma City, and the Aviation System Standards Office. The branch level in the Aircraft Certification Service directorates and regional Flight Standards Service divisions. All aircraft certification offices, manufacturing inspection district and satellite offices, and all flight standards district offices. The Aircraft Certification Branch and Flight Standards Branch at the FAA Academy, the International Policy Branch in Brussels, Belgium (AIR-BRU) and Flight Standards staff. Applicable representatives of the Administrator and all international field offices.

**2. Referenced Paragraph from FAA Order 8110.37D (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. 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 compliance with 14 CFR § XX.853 or other material flammability test to support lot or quality control testing or in support of TSO authorizations.”

**3. Authority to Change This Order.** The issuance, revision, or cancellation of the material in this order is the responsibility of the Aircraft Engineering Division (AIR-100).

**4. Suggestions for Improvement.** If you find deficiencies, need clarification or want to suggest improvements to this order, send FAA Form 1320-19, Directive Feedback Information, (written or electronically) to the Aircraft Certification Service, Administrative Services Branch, AIR-510, Attention: Directives Management Officer. You can also send a copy to the Aircraft Engineering Division, AIR-100, Attention: Comments to Order 8110.113. If you urgently need an interpretation, you can contact the Certification Procedures Branch (AIR-110) at 202-385-6312. Always use Form 1320-19, in appendix B, to follow up each verbal conversation.

**5. Records Management.** Refer to Orders 0000.1, FAA Standard Subject Classification System; 1350.14, Records Management; and 1350.15, Records, Organization, Transfer, and Destruction Standards; or your office Records Management Officer or Directives Management Officer for guidance regarding retention or disposition of records.

### Appendix B. Directive Feedback



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

### Directive Feedback Information

Please submit any written comments or recommendations for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it.

Subject: Order 8110.113

To: Directive Management Officer, 510

*(Please check all appropriate line items)*

An error (procedural or typographical) has been noted in paragraph \_\_\_\_\_ on page \_\_\_\_\_.

Recommend paragraph \_\_\_\_\_ on page \_\_\_\_\_ be changed as follows:  
*(attach separate sheet if necessary)*

In a future change to this directive, please include coverage on the following subject:  
*(briefly describe what you want added)*

Other comments:

I would like to discuss the above. Please contact me.

Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_

FTS Telephone Number: \_\_\_\_\_ Routing Symbol: \_\_\_\_\_