



AA CAGE Code 81205

## **Supplier Procedure for Developing and Documenting Flammability Compliance Data**

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## Table of Contents

Abbreviations.....	1
Definitions .....	2
References.....	5
1. Introduction.....	6
1.1 Purpose.....	6
1.2 Document Organization .....	6
1.3 Optional Templates and Examples for Suppliers.....	8
3. Supplier Document Requirements.....	14
3.1 Determining Applicable Sub-Documents .....	14
4. Requirements for Test Plans and Test Reports.....	15
4.1 General Test Plan and Test Report Requirements .....	15
4.1.1 Cover Page .....	15
4.1.2 Supplier Contact Information.....	17
4.1.3 Revision Log .....	17
4.1.4 Definitions/Abbreviations .....	19
4.1.5 References .....	19
4.1.6 Scope .....	19
4.1.7 Part Numbers.....	20
4.1.8 Illustrations of Parts .....	20
4.1.8.1 General Requirements .....	20
4.1.8.2 Small Parts Requirements.....	26
4.1.8.3 Metallic Part Requirements .....	30
4.1.8.4 Adding Part ID Codes to Illustrations .....	30
4.1.8.5 Exceptions to Illustrations and ID Code Requirements.....	30
4.1.9 Material ID Table .....	33
4.1.9.1 Material ID Table Columns .....	33
4.1.9.2 Guidelines for Non-metallic, Metallic, and Small Parts.....	38
4.1.9.3 Similarity Data.....	41
4.1.9.4 Boeing-Supplied Parts .....	41
4.1.9.5 Sub-Components Addressed by Separate Flammability Reports .....	42
4.2 Specific Requirements for Test Plans .....	43
4.2.1 Test Specimens.....	43
4.2.2 Conformity Table .....	45
4.2.3 Example Test Data Sheets .....	46
4.2.4 Conformity Inspection Personnel and Facilities .....	46
4.2.5 Test Witnessing Personnel and Facilities.....	47

---

4.3 Specific Requirements for Test reports .....	48
4.3.1 Test Data Sheets .....	48
4.3.2 Evidence of Validity for New Test Data .....	48
4.3.3 Evidence of Previously Approved Test Data .....	49
Appendix A: Blank Templates .....	50
A.1 Sample Cover Page .....	51
A.2 Sample Revision Log .....	52
A.3 Sample Material ID Table .....	53
A.4 Sample Conformity Table .....	54
A.5 Sample Test Witness Statement Page .....	55
A.6 Sample Bunsen Burner Test Data Sheet .....	56
A.7 Sample Smoke Density (SM) Test Data Sheet .....	57
A.8 Sample OSU/Heat Release Test Data Sheet .....	58
A.9 Summary of Optional Checksheet Information .....	59
A.10 Example Supplier Checksheet .....	60
Appendix B: Example Material ID Tables .....	61
B.1 Example Material ID Table with Acceptable Entries .....	62
B.2. Example Material ID Table with Common Errors .....	71
Active Page Record .....	74
Revision Record .....	75

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## List of Figures

Figure 1.	D6-49936 Document Tree.....	7
Figure 2.	Test Plan and Test Report Decision Process .....	10
Figure 3.	General Document Preparation Process per Section 4.1 .....	11
Figure 4.	Test Plan Process per Section 4.2 .....	12
Figure 5.	Test Report Process per Section 4.3.....	13
Figure 6.	Example of a Fire Property Test Plan/Report Cover Page.....	16
Figure 7.	Example of a Revision Log.....	18
Figure 8.	Overall and Exploded View of Example Part .....	21
Figure 9.	Example of Panel with Embedded Component .....	23
Figure 10.	Example of a Fully Enclosed Unvented Metal Box (ID Code 1) with a Bonded Detail (ID Code 2) .....	23
Figure 11.	Example of Overlap Joint.....	24
Figure 12.	Examples of Ditch and Pot Joints .....	25
Figure 13.	Multiple Small Parts Located on the Same Plane .....	27
Figure 14.	Multiple Small Parts Located on Multiple Planes.....	28
Figure 15.	Small Parts Spacing.....	29
Figure 16.	Example of a Cable Assembly Sketch, Showing all Parts and their Associated ID Codes for all parts.....	31
Figure 17.	Example of a Printed Circuit Board (ID Code 1) with small electronic components attached to the surface.....	32
Figure 18.	Example views (a) and (b) show where to cut specimens from a production part .....	44

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## List of Tables

Table 1.	Summary of Information Needed in Material ID Table Columns .....	36
Table 2.	Example of Conformity Table--Summary of Specimen Sets to be Conformed and Test Witnessed .....	45

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## **Abstract**

This document is intended to be used in support of each of the sub-documents D6-49936-1 through D6-49936-9. Together, these documents outline the process for a proper showing of compliance for test plans and test reports that address FAA, FCAA, and Boeing flammability requirements for parts installed inside the fuselage on Boeing aircraft. The requirements and processes outlined in this document apply to all newly designed parts and equipment, or parts that include changes to previously approved designs.

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## Abbreviations

14CFR	Code of Federal Regulations, Title 14, Aeronautics and Space
AC	Advisory Circular
AR	Authorized Representative
BCA	Boeing Commercial Airplanes
DAR	Designated Airworthiness Representative
DE	Design Engineer
EAR	Export Administration Regulations
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
FCAA	Foreign Civil Aviation Authority
HR	Heat Release
ID	Identification
JAR	Joint Aviation Requirements
MOC	Method of Compliance
OBAR	Outside Boeing AR
ODA	Organization Designation Authorization
OEM	Original Equipment Manufacturers
OSU	Ohio State University
RFC	Request for Conformity (FAA Form 8120-10)
TWO AR	Test Witness Only AR
UNSAT	Unsatisfactory Condition



## Definitions

Authorized Representative(s)	The Regulatory Administration engineering unit members who are given the authority and responsibility of making findings of compliance (or recommending approval). Examples of AR authority include approving test plans and reports and FAA-authorized test witnessing.
Change-based Certification	Change-based certification is a certification method that allows suppliers to substantiate the changed feature(s) of a design shown compliant on a previously certified Boeing airplane. This method allows the supplier to submit a condensed report. This condensed report substantiates the changed feature(s) and references the previous substantiation. This change-based approach applies to simple changes per the definition listed in the Definitions section of this document.
Complex Change	<p>A complex change is a change to a previously certified design where <u>any</u> of the following apply: (a) the changes are so extensive that multiple part features require new substantiation, (i.e., the previously approved test report represents a significantly different design), b) the change(s) is complicated such that it results in the need for substantiating multiple new material configurations, or (c) a change to thermal/acoustic insulation. In addition, changes that involve a D6-49936-6 exempted area may be complex.</p> <p>Describing and substantiating the change(s) is either extensive, and/or complicated such that preparation, review, and analysis are similar to that required for a full test plan/report</p>
Component	A lower level part or an assembly contained within a given part. For example, a galley may have component parts such as a work deck, shelves, waste container, wall, etc.
DAR M-unit members	Independent Designated Airworthiness Representatives (DARs) which are also M-unit members. These personnel are approved by the Regulatory Administration to perform FAA conformity inspections.
FAA conformity	The activity (verifying specimen configuration matches the test plan) driven by the release of completed FAA form 8120-10.
FAA-authorized witness	An FAA employee, an AR, OBAR (Outside Boeing AR) or TWO AR (Test Witness Only AR).

Fully enclosed metal box	<p>A fully enclosed metal box shall be <b><i>unvented</i></b> (no ventilation holes) and include either six metal sides or five metal sides and one glass face.</p> <p>Electrical connectors on the metal box are acceptable.</p> <p>Metal hoses with a non-metallic liner, where the liner is fully enclosed by the metal, are considered “fully enclosed metal boxes.” For the hose to fully enclose the liner, braided hoses must be tightly braided so that the liner material is not visible through the braid.</p>
MI (Material Identifier) Number	A Boeing generated number that is created to provide traceability to the certification data of Boeing Aircraft parts requiring FAR flammability testing.
M-unit members	Regulatory Administration Manufacturing Unit members. Personnel approved by the Regulatory Administration to perform RFC inspections.
Metal part	Part is made from metal, that is not primarily a magnesium alloy
OBARs	Outside Boeing AR. Non-Boeing personnel who are ARs authorized to witness testing or find compliance on Boeing certification projects.
ODA	The Organization Designation Authorization (per FAA Order 8100.15) held by Boeing. Unless otherwise noted, the use of ODA in this document refers to the ODA held by Boeing and not other companies who may also have an ODA.
Regulatory Administration	The Boeing Company Regulatory Administration
Simple change	<p>A simple change is a change to a previously certified design where all of the following apply: (a) most of the substantiation has been previously approved, (b) the change itself is not complicated such that it does <u>not</u> result in substantiating multiple new material configurations, or (c) it does <u>not</u> involve a change to thermal/acoustic insulation.</p> <p>Describing and substantiating the change(s) requires far less preparation, review and analysis as compared to that required for a full test plan/report.</p>
Small part	See document D6-83466-1, MOC 3.1, for the definition of a Small Part.

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Surfacing materials	Spackling, fillers, and putty used to fill minor defects on surfaces of laminate and sandwich panel constructions.
Supplier M-unit member(s)	Supplier personnel that are also Regulatory Administration M-unit members. These personnel are approved by the Regulatory Administration to perform FAA conformity inspections.
TWO AR	An AR with an authorization that is limited to providing test witnessing only.
Type Design	The drawings and specifications necessary to define the configuration and the design features of the product.

---

## References

1. FAA Issue Paper Item C-2, Project # SP10755SE-T, Stage 4
2. D6-83466-1, Flammability Methods of Compliance
3. 14CFR Part 25 as amended by Amendments 25-1 through 25-123
4. D6-51377, Airplane Fireworthiness Design Criteria: Pressurized Compartments, The Boeing Company—Smoke and Toxic Gas Emissions
5. FAA Advisory Circular 25-16 Electrical Fault and Fire Prevention and Protection
6. FAA Advisory Circular 43.13-1B, Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair
7. DOT/FAA/AR-00/12, Aircraft Materials Fire Test Handbook
8. FAA Advisory Circular AC 25.856-1, Thermal/Acoustic Insulation Flame Propagation
9. FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012.

**Note:** Refer to the applicable D6-49936 sub-documents for specific regulations.

---

# 1. Introduction

## 1.1 Purpose

The purpose of this document is to provide Boeing suppliers with instructions on how to show compliance with the applicable FAA or FCAA flammability regulations for parts used on Boeing aircraft. The requirements and processes outlined in this document apply to all newly designed parts and equipment, and parts that include changes to previous designs.

**Note:** FAA Order 8110.4C, "Type Design", requires supplier type design to be shown compliant to applicable requirements. To show compliance, test plans and test reports submitted by suppliers to Boeing must be clearly representative of the type design. Suppliers have an obligation to provide a complete description of their designs when submitting illustrations and data to Boeing for review and approval. It is the responsibility of the supplier to ensure that the test plan and test report specifically and explicitly address all aspects of the supplier type design. Supplier representatives approving test plans and test reports are signifying with their signature that a thorough review of the type design has been conducted and that the test plan or test report they are approving completely addresses all aspects of the supplier type design.

## 1.2 Document Organization

This document is intended to be used in support of each of the sub-documents D6-49936-1 through D6-49936-9. Together, these documents outline the requirements for a proper showing of compliance for meeting the FAA and FCAA flammability certification requirements and additional Boeing requirements. These documents address both a showing of compliance for new designs, and simple and complex changes to previously approved designs. Refer to Figure 1 and Section 3.1 to determine the applicable sub-documents for specific part designs and flammability requirements.

# D6-49936 Document Tree

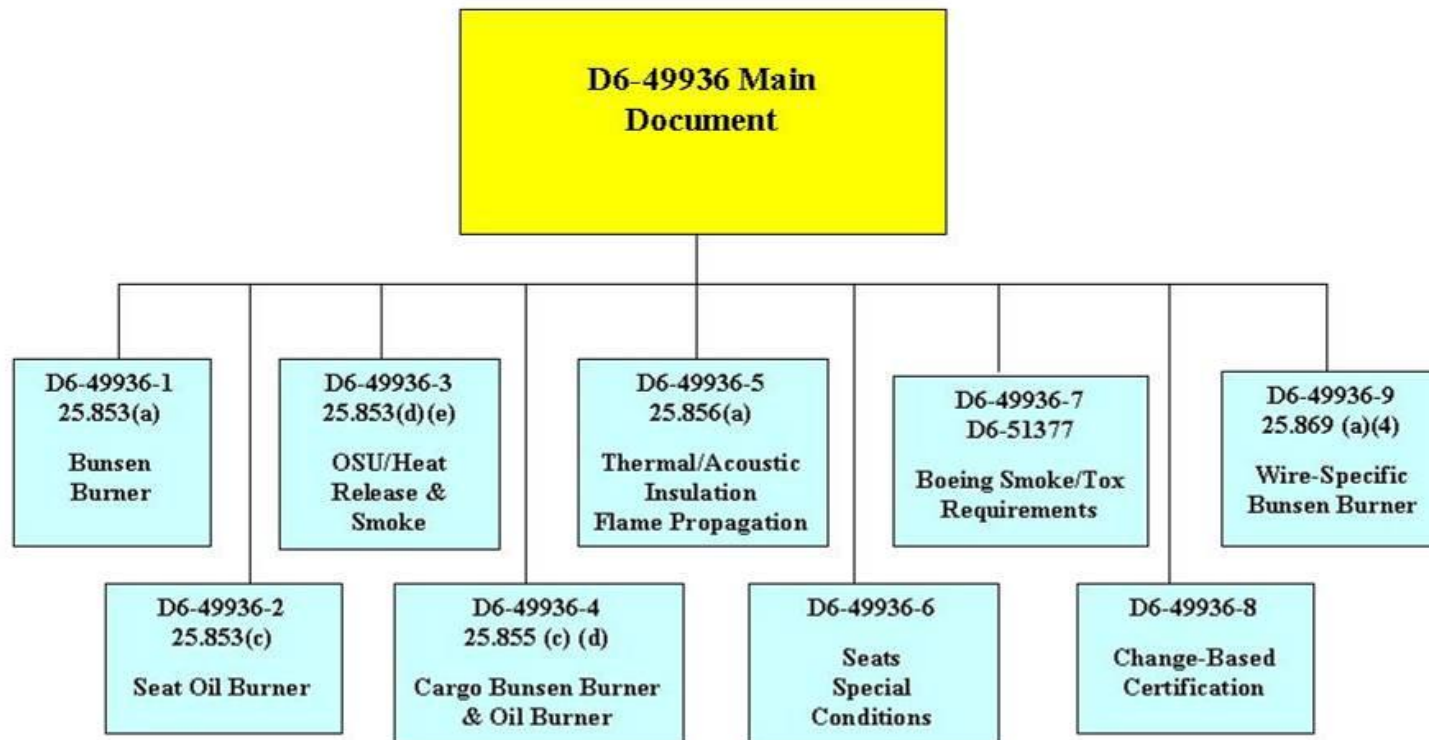


Figure 1. D6-49936 Document Tree

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## 1.3 Optional Templates and Examples for Suppliers

Appendix A provides several optional templates and examples that are intended to help suppliers prepare their test plans and test reports. The use of these templates is optional and not required. However, they are recommended to ensure the necessary information has been provided with test plans and reports.

Included in this Appendix is an example checklist template to be used by suppliers as an optional tool to prevent the outflow of common errors in their test plans and reports (refer to Appendix A.9 and A.10). The checklist, if used, is a living document that is intended to be changed over time to reflect the type of common errors that might occur frequently for a specific document. The example checklist includes only a few examples of commonly encountered errors. To use this checklist successfully, suppliers should add any item(s) deemed necessary for a specific type of application.

Appendix B provides examples of an acceptable Material ID table, as well as a Material ID Table that highlights common errors. This is intended to assist suppliers in showing the specific information needed in this table for various types of parts/materials. Refer to Section 4.1.9 for further information on Material ID Table requirements.

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## **2. Process Overview**

Figure 2, Figure 3, Figure 4, and Figure 5 provide an overview of the supplier flammability certification process for new designs/configurations, as well as changes to existing designs/configurations. Each step in this process flow is described in more details in section 4 of this document.



## Key for Figures 2, 3, 4, and 5

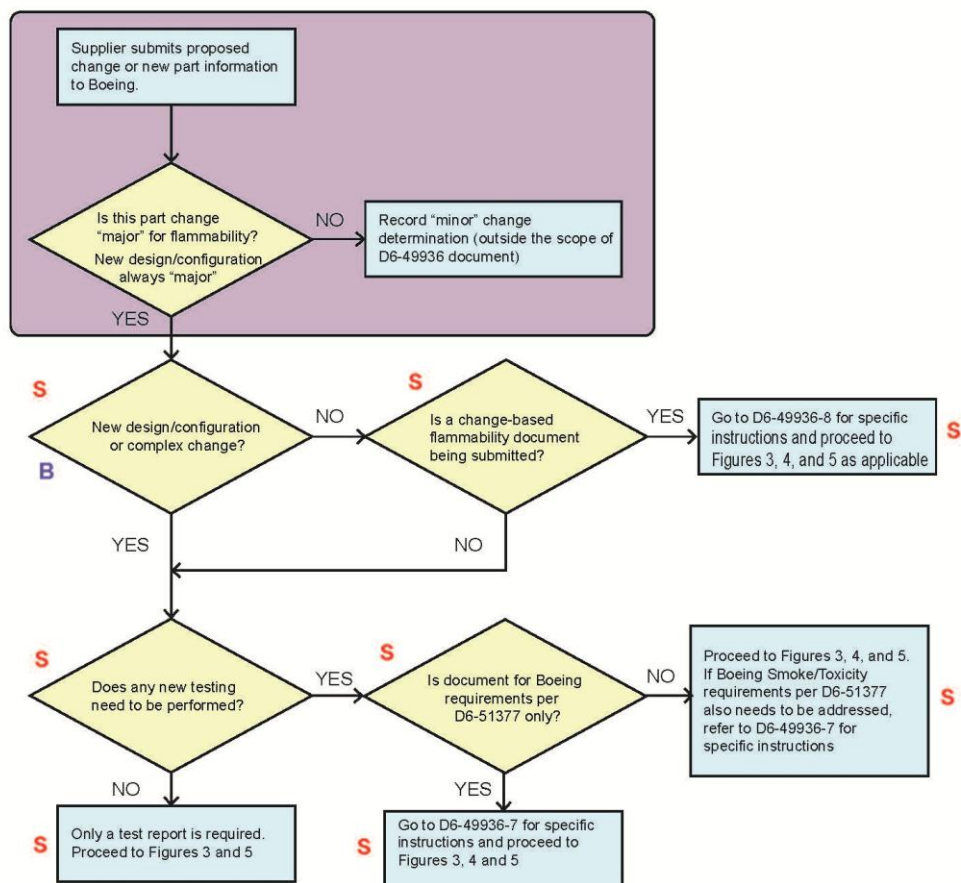
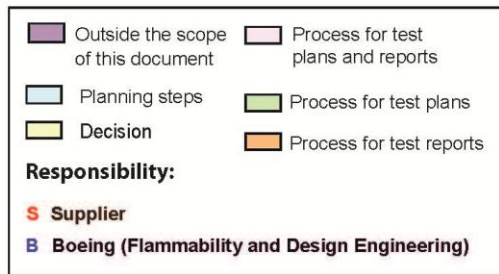


Figure 2. Test Plan and Test Report Decision Process

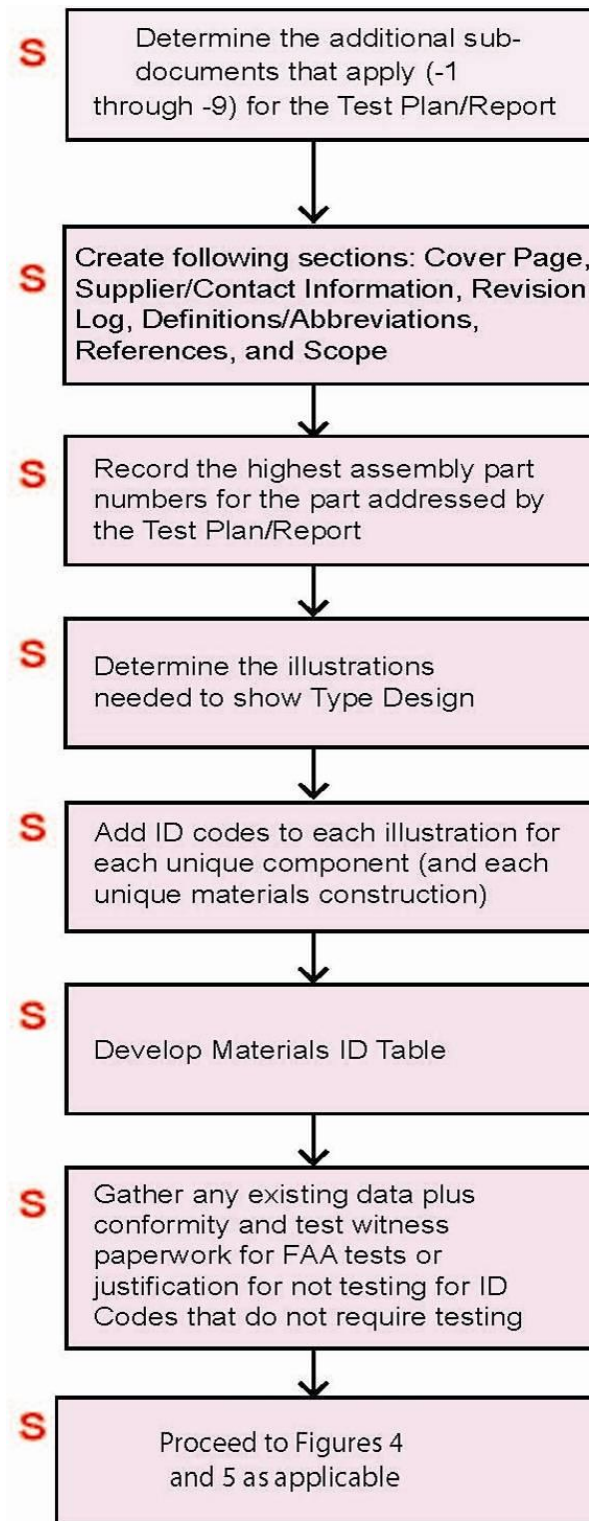


Figure 3. General Document Preparation Process per Section 4.1

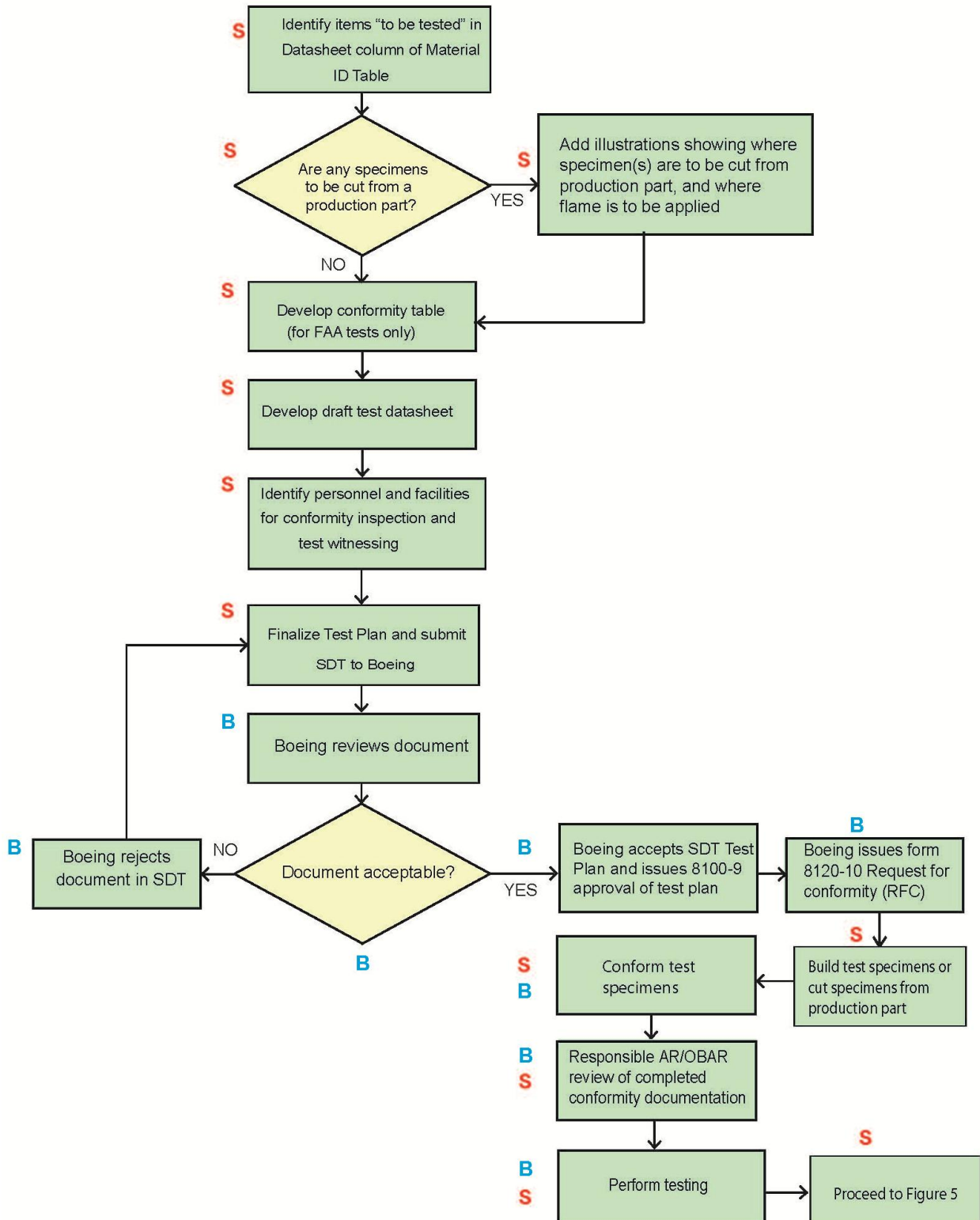


Figure 4. Test Plan Process per Section 4.2

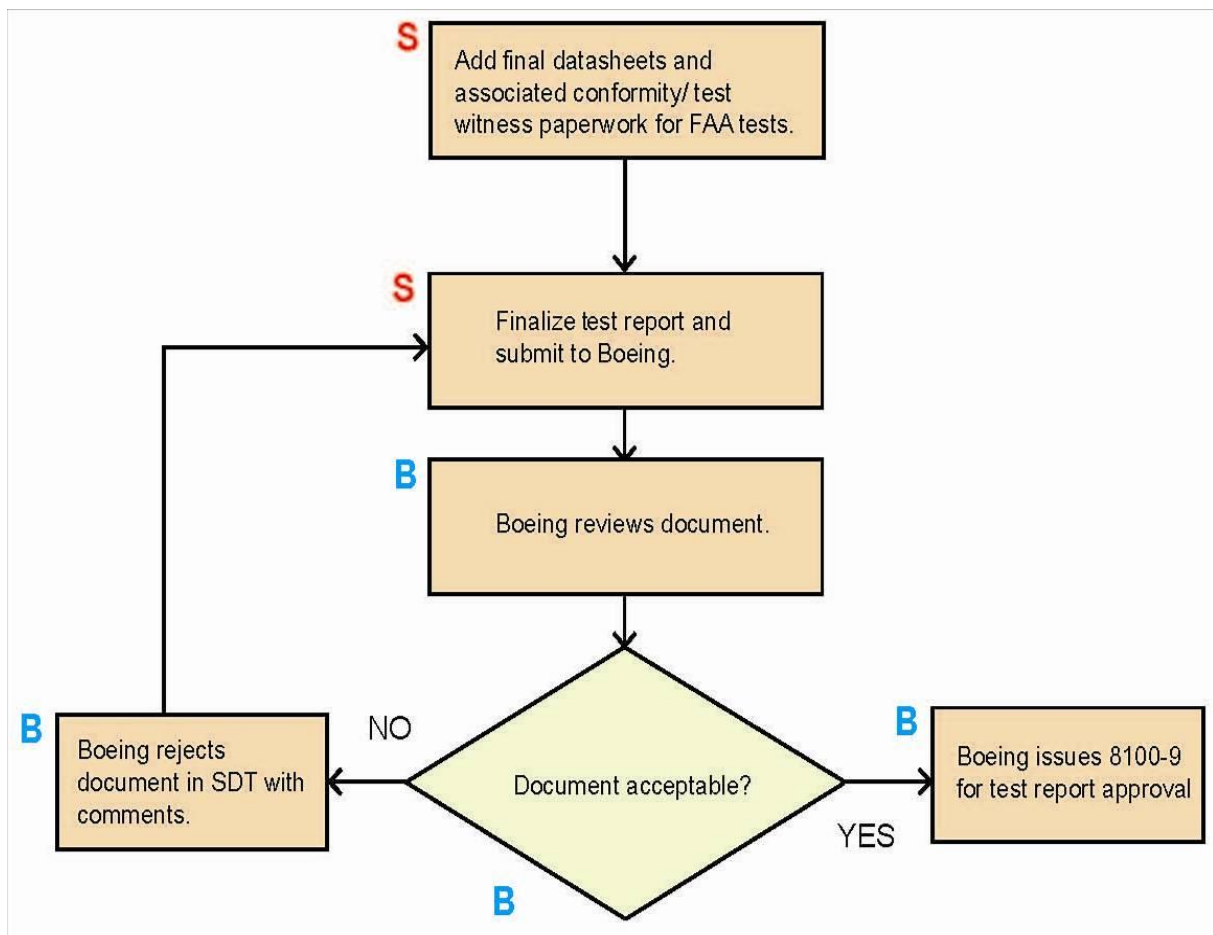


Figure 5. Test Report Process per Section 4.3

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## **3. Supplier Document Requirements**

### **3.1 Determining Applicable Sub-Documents**

Refer to Figure 1 to determine applicable sub-documents (D6-49936-1 through -9) that will be used in conjunction with this document to establish the requirements for various types of flammability test plans and reports.

All test plans and reports shall comply with the requirements of the main D6-49936 document. In addition, all test plans and test reports shall comply with one or more of the applicable D6-49936 sub-documents.

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## **4. Requirements for Test Plans and Test Reports**

### **4.1 General Test Plan and Test Report Requirements**

For each test plan and report submitted, a complete stand-alone document is required. This means that the showing of compliance to the applicable regulations for the entire part(s) addressed by the document is required. Any data obtained from a previously approved test report must therefore be included in the document.

All pages in the document shall contain (a) a header or footer with the document number, (b) the current revision level of the document, and (c) the applicable page number. In addition, all page numbers shall be sequential and no pages shall be skipped.

At a minimum, the section headings and applicable information described in Sections 4.1.1 through 4.1.9 shall be included in the test plan or test report.

#### **4.1.1 Cover Page**

A cover page shall be included for all test plans and test reports. As a minimum, the cover page shall contain the company name and address, document title, document number, airplane model and effectivity (if known), revision level, release date, and part description. See Figure 6 for an example of a cover page.

Cover Page	
Fire Property Test Plan / Test Report	
This submittal is a (check applicable one below):	
<b>Test Plan:</b> <input type="checkbox"/>	<b>Test Report:</b> <input type="checkbox"/>
Company Name:	
Company Address:	
Document No.:	
Revision No.:	
Title:	
Part Number(s):	
Airplane Model:	
Airline /Airplane Effectivity:	
Prepared by:	Date:
Checked by:	Date:
Approved by:	Date:

Figure 6. Example of a Fire Property Test Plan/Report Cover Page

---

## 4.1.2 Supplier Contact Information

Identify the name, email address, and phone number for individual(s) within the company who could be contacted for additional information. This information should be in the introductory pages of the document.

## 4.1.3 Revision Log

A Revision Log shall be included with all test plans and test reports. See Figure 7 for an example of a Revision Log. Revision signatures can be either hand written or provided electronically. The revision description within the Revision Log shall clearly state the specific changes made to the test plans and test reports. This can be done by either of the following methods:

1. A written explanation of each change to each section, page number, figure, table, etc. in the Revision Log.

**Note:** Revision descriptions such as “per Boeing comments to SDT 07-12345” are not sufficient. Unless they are visually identified on the changed page, the specific changes must be listed such as 'added HR to Item 3' and/or 'added new panels XYZ.’”

2. A visual representation of all changes within the document itself. This can be accomplished by either showing the changes in a different color font or by using other visual indications of where the changes are located in the test plans and test reports.

**Note:** An advantage of visually displaying the changes will be that the changes are more obvious to the reviewer and in this case, the supplier will not need to provide an additional detailed written record of the changes. The revision record could simply state “all changes noted in blue font” or a similar statement.



Revision Log				
Rev Level	Page Number	Date	Description of Change	Approval
New	1-58	1/15/2009	Initial Release	<u>John Doe</u> Original signed by
A	11 18 A-3, A-4, A-5	3/18/2010	Added ID Code 3 to Table 2  Added ID code 3 to Figure 5  Added data sheet, conformity and test witness paperwork to Appendix A	<u>Jane Smith</u> Original signed by
B	8 19 26	9/15/2010	Added reference 7 to sec. 2.3  Added section 4.2  Added flag note 5 to Table 2	<u>John Doe</u> Original signed by

Figure 7. Example of a Revision Log

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## 4.1.4 Definitions/Abbreviations

A Definitions/Abbreviations section shall be included in the test plan and test report to describe any terms that are not used as generally defined in common dictionary definitions. This could include materials, processes, testing, or other information that should be further clarified. For an example, see the Abbreviations and Definitions sections of this document.

## 4.1.5 References

The following list of references shall be included in the test plan and report:

1. All applicable FAA and FCAA regulations (e.g., 14CFR Part 25, section 25.853 (a) and (d)).
2. The part(s) drawing numbers (top level at a minimum), and any applicable trim and finish drawings, that represent the type design.
3. The documents for the fire property test methods.
4. All applicable Boeing documents (including D6-49936 and the associated sub-documents) that define the requirements addressed in the test plan/report. Include the wording “latest revision level” to convey that the latest revision level of the document is being used.

For an example, see the References section of this document.

## 4.1.6 Scope

As a minimum, the scope section of the test plans and test reports shall include the following information:

1. General description of part
2. Identification of the FAA or FCAA regulations (for example, FAR 14CFR Part 25, section 25.853 (a), (c) and (d)), and/or the Boeing specific requirements (that is, D6-51377 smoke and toxicity) that will be addressed in the document. **Note:** Reference to testing for other Original Equipment Manufacturers (OEMs) shall be clearly identified as “not applicable to Boeing.”

---

## 4.1.7 Part Numbers

### **General Requirements:**

1. The highest level assembly part number(s) (including dash numbers) that are covered by the document shall be listed in the cover page and the part number section.
2. If the part number has a color suffix, the color suffix shall be included. This ensures that all parts covered by the report are clearly traceable to the flammability certification data.

### **Variable Part Number Designations:**

If a part number(s) identified in the test plan/report has a variable designation after the root part number (e.g. “-xxx”), the document must clearly state why this variable represented by the “-xxx” does not impact the showing of compliance for flammability requirements.

**Example:** A given cable assembly has a “-xxx” variable denoting different cable lengths only. The test plan/report shall explain that because different lengths do not require different or additional testing, test of one cable represents all other “-xxx” cables.

## 4.1.8 Illustrations of Parts

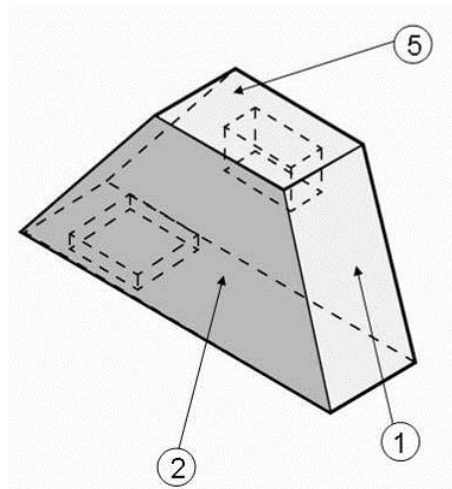
The test plan and test report shall include a sufficient number of illustrations that clearly show the type design such that compliance to the regulations can be shown and found. Figure 8 through Figure 17 provide examples of illustrations that show overall, exploded and/or detail views representing different part constructions and features.

### 4.1.8.1 General Requirements

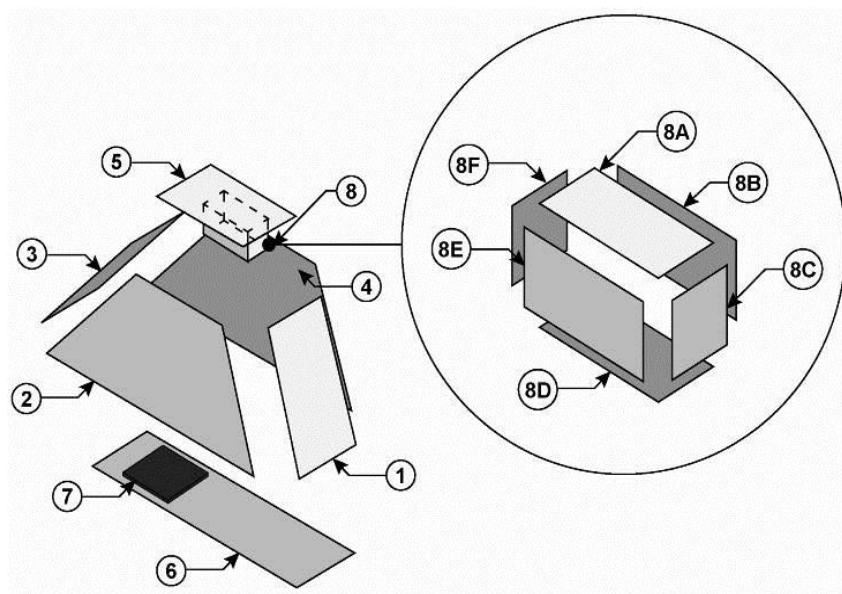
An illustration that provides a clear visual representation (such as a photo, 2-D or 3-D sketch or CAD-generated depiction, etc.) of the engineering type design is required for all test plans and reports. The following guidelines shall be followed for illustrations submitted:

- a. Overall illustration(s) of the part(s) covered by the test plan or report.

**Note:** Additional illustration(s) may be required to clarify individual parts or assemblies not obvious from the overall illustrations. Examples include enlarged views of part components, internal construction of parts, and exploded views to show part assemblies. See Figure 8 for an example illustration.



**(a) Overall View**



**(b) Exploded view(s)**

Figure 8. Overall and Exploded View of Example Part

- 
- b. Front, back, sides, top and bottom views shall be shown, except when one side is identical to an opposite side and labeled as such. **Note:** These can be shown in one or more views as needed to convey the different part features.
- c. Figure headings shall be provided for each illustration to clearly describe the part and view shown.
- d. Illustrations that show panel constructions must include the location of any unique cross-sectional material configurations, such as:
- Areas of local panel reinforcement or embedded details (for example foam or metallic blocks, or additional prepreg plies). See Figure 9 for an embedded detail example.
  - Areas of variable panel thickness
  - Additional materials applied to the part (for example, bonded details, placards, pressure sensitive tape, sealant, hook/loop tape). See Figure 10 for a bonded detail example.
  - Bonded/taped overlapping areas of adjacent parts. See Figure 11 for an overlap joint example.
  - Additional materials applied to portions of a part surface but not the entire surface (for example, paint overspray areas, or paint applied to a specific area only)

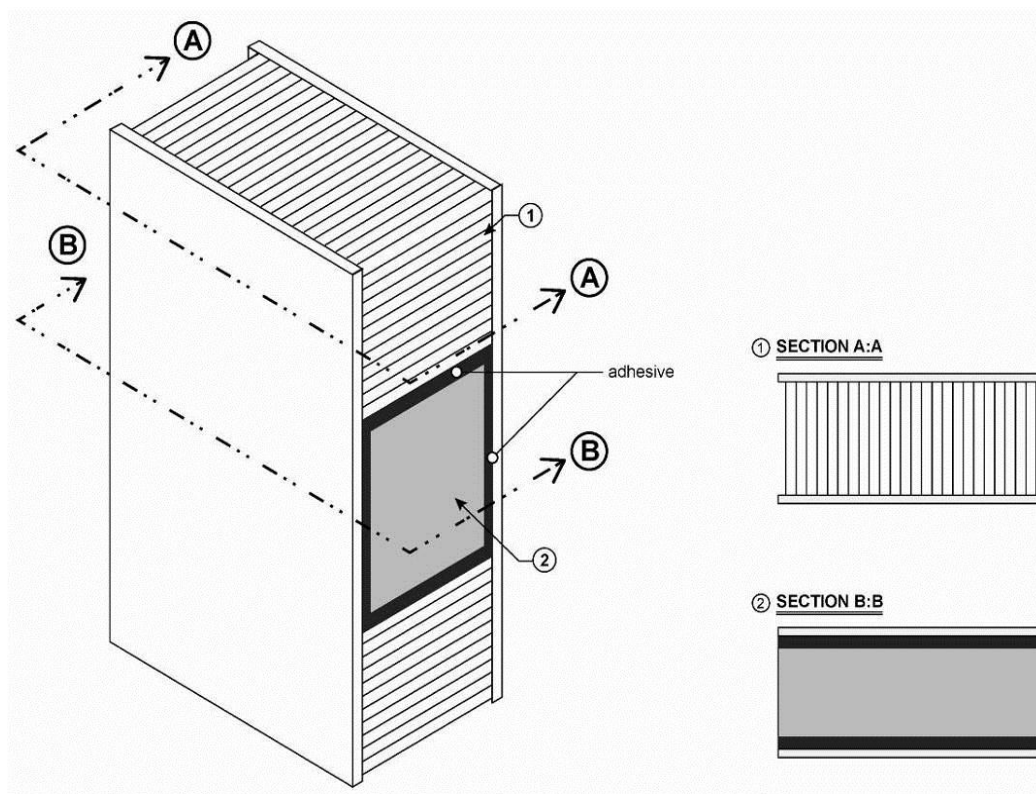


Figure 9. Example of Panel with Embedded Component

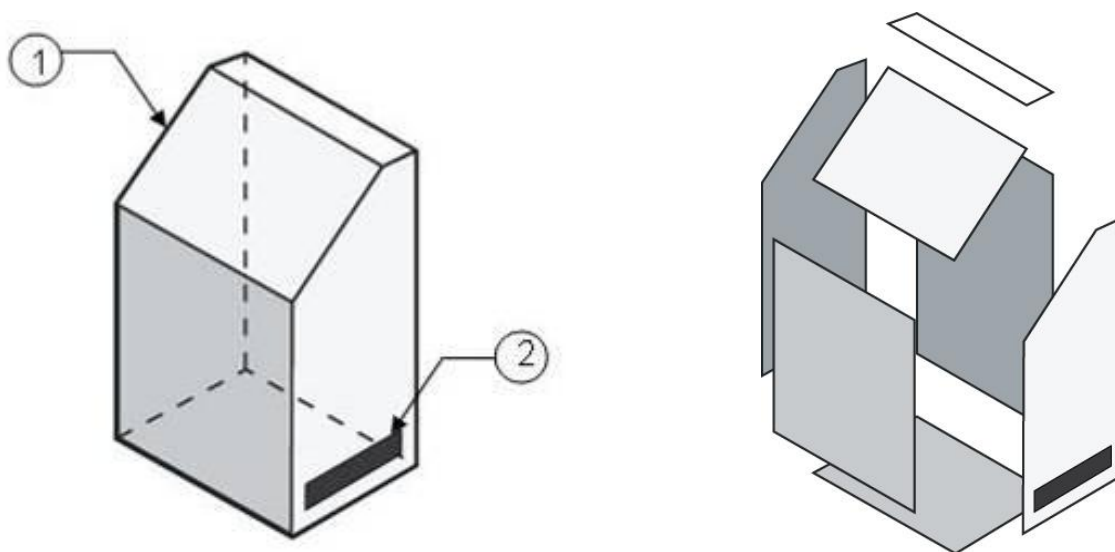


Figure 10. Example of a Fully Enclosed Unvented Metal Box (ID Code 1) with a Bonded Detail (ID Code 2)

**Note:** Wiring and other internal components of unvented metal boxes/enclosures need not be shown.

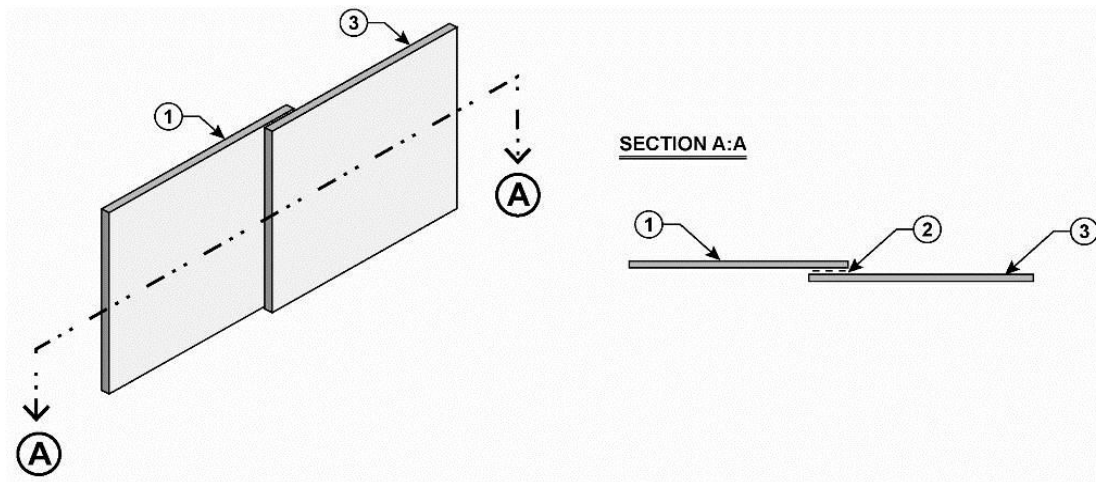
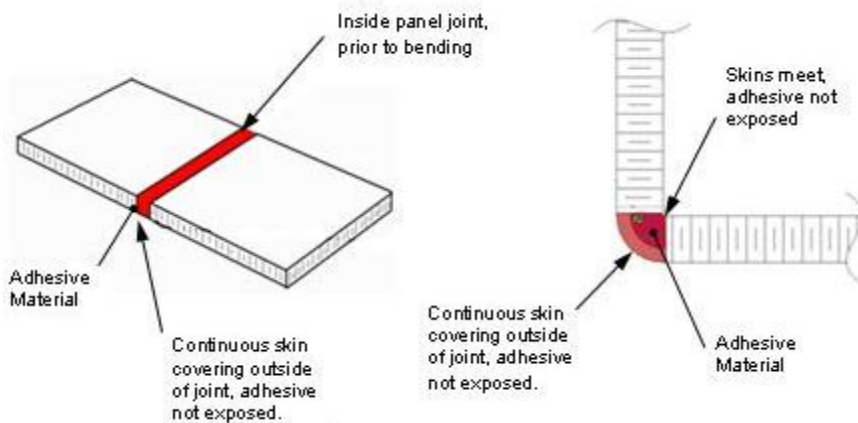


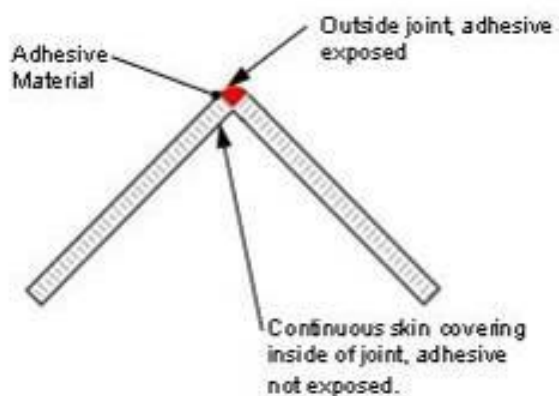
Figure 11. Example of Overlap Joint

- e. The Material ID Table shall describe the cross-sectional configuration; however, illustrations that show panel construction do not need to show the location of the following items:
- Panel edge configurations where fillers and edge treatments are used (such as foam or potted edges)
  - Potted inserts
  - Composite panel joint constructions (for example, mortise and tenon, tab and slot, pin joints, T-joints, cut and fold, ditch and pot). See Figure 12 for examples of ditch and pot joints.
  - Surface finishes applied to an entire part surface (for example, surface fillers, primer, paint, etc)

**Note:** Although these items do not need to be shown in the illustrations, the material description and the associated method of compliance must be provided in the Material ID Table. See the edge filler example in Appendix B.1 (example Material ID Table with acceptable entries).



**(a) Inside Bend—A ditch and pot joint formed by creating a ditch in a panel and folding towards the cut**



**(b) Outside Bend—A ditch and pot joint formed by creating a ditch in a panel and folding away from the cut**

**Figure 12. Examples of Ditch and Pot Joints**

- f. Illustrations of parts that are un-vented fully-enclosed metal boxes/enclosures per D6-83466-1, MOC 3.19, FAA AC 25-16, and FAA AC 43.13-1B must include illustrations showing all exterior surfaces. Internal components including electrical wiring do not need to be shown, but any materials or parts located on the exterior surface of the box (for example, labels, connectors, brackets, and finish coatings) shall be shown. See Figure 10 for an example of a fully-enclosed un-vented metal box.



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#### 4.1.8.2 Small Parts Requirements

**Illustrations are required for the following cases:**

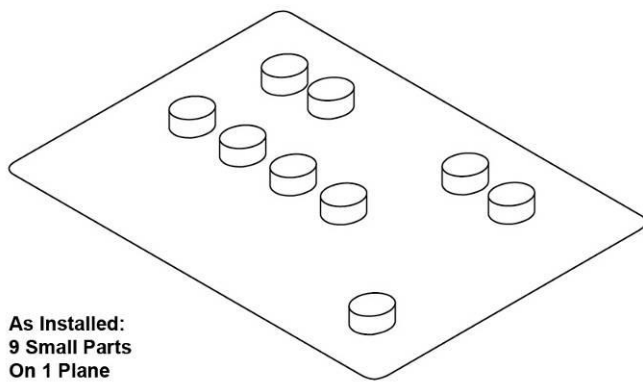
- a. The overall part to be shown compliant is itself a small part. For example a USB port covered by a flammability test plan/report and meets the size requirements of D6-83466-1, MOC 3.1.
- b. The overall part to be shown compliant is made either entirely of small parts or most of its parts are small. For example, a keyboard, a handset, or an electrical cable.
- c. Multiple small parts (of the same material) can fit within the D6-83466-1, MOC 3.1 small part criteria, but an illustration is needed to show the as-installed configuration. See Figure 13 through Figure 15 for examples of scenarios that do and do not meet the requirements of the small parts MOC.

**Illustrations are not required for the following cases:**

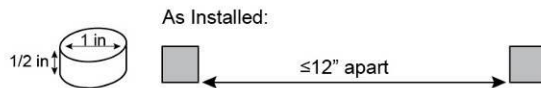
- a. Each small part is of a unique material construction and each fits within the D6-83466-1 MOC 3.1 size criteria.

**Note:** In this case the overall part to be shown compliant is **not** itself a small part.

- b. Multiple small parts are so small that an illustration is not needed to show how they fit within the D6-83466-1 MOC 3.1 size criteria.

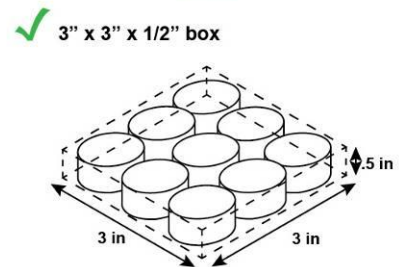
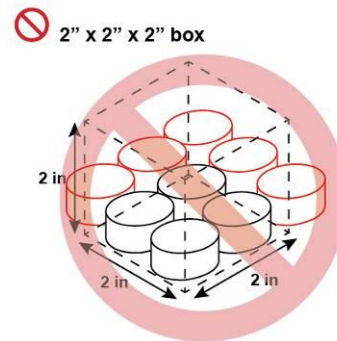


As Installed:  
9 Small Parts  
On 1 Plane

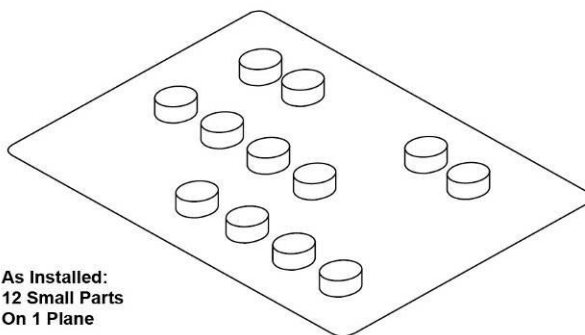
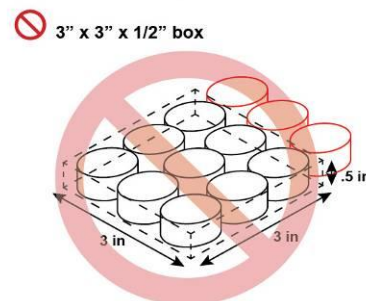
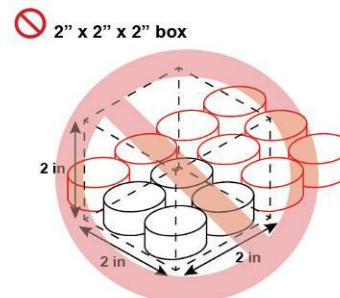


(a) Meets small parts criteria

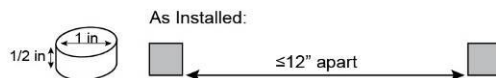
#### Small Parts: Example 1



#### Small Parts: Example 2

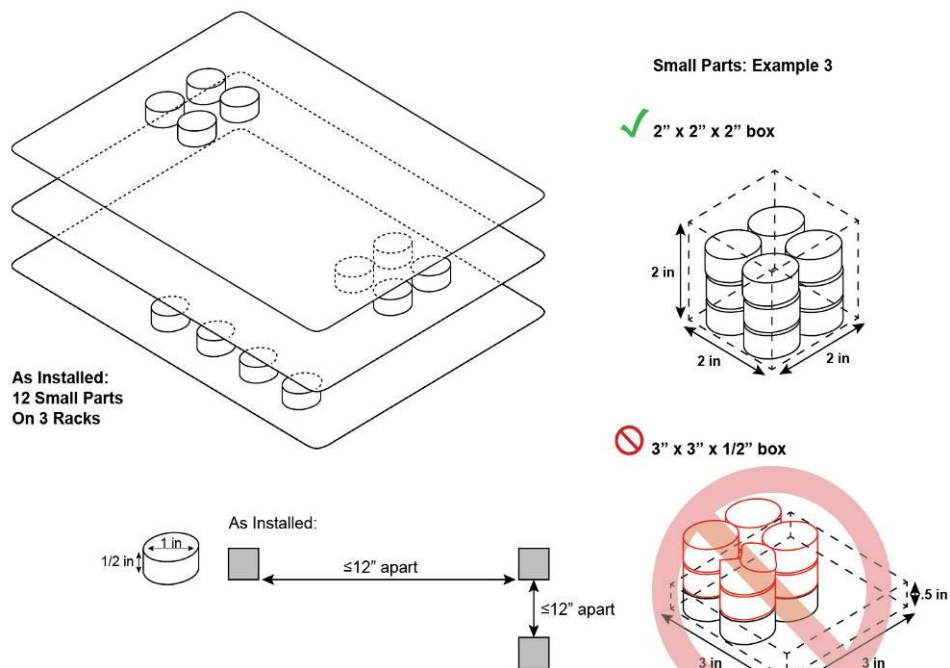


As Installed:  
12 Small Parts  
On 1 Plane

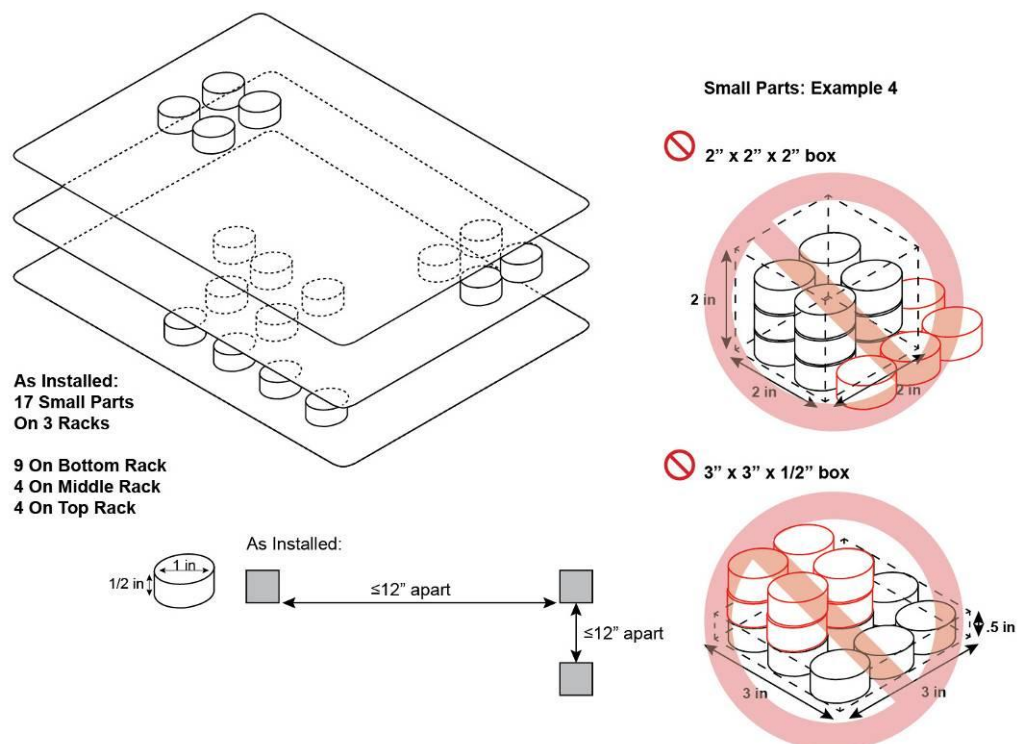


(b) Does not meet small parts criteria

Figure 13. Multiple Small Parts Located on the Same Plane

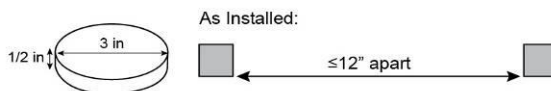
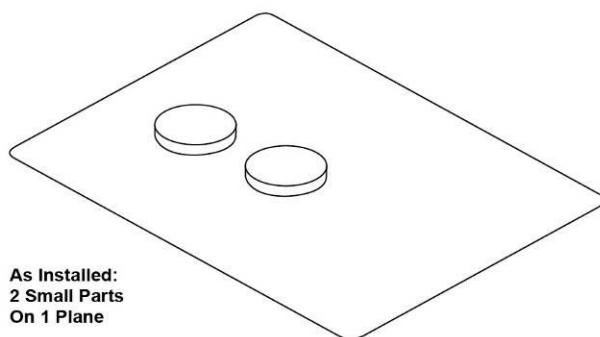


**(a) Meets small parts criteria**



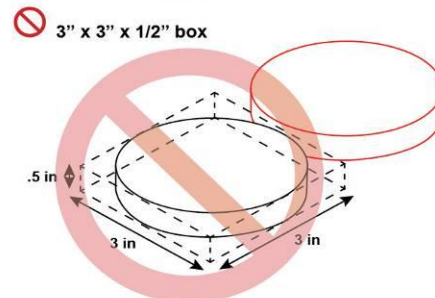
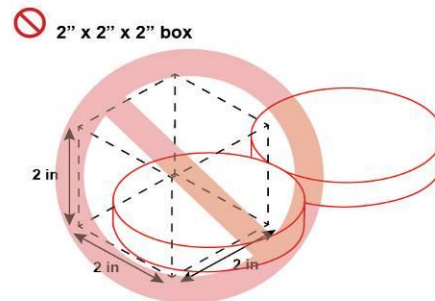
**(b) Does not meet small parts criteria**

Figure 14. Multiple Small Parts Located on Multiple Planes

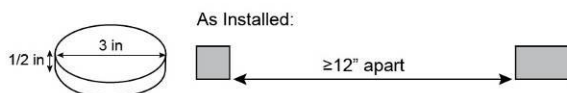
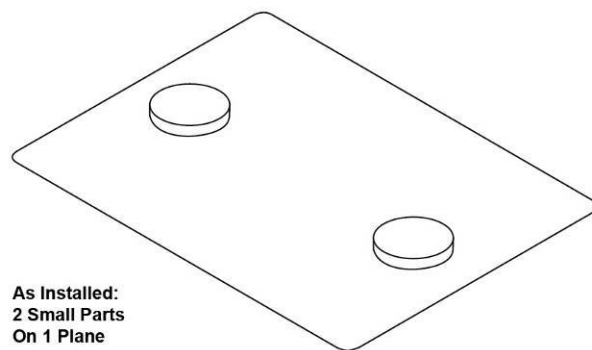
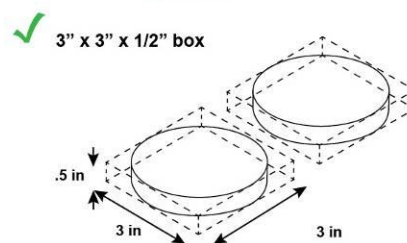
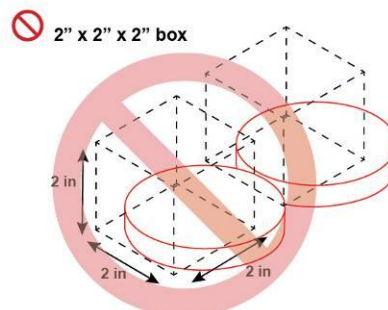


(a) Does not meet small parts criteria (part spacing less than 12" apart)

#### Small Parts: Example 5



#### Small Parts: Example 6



(b) Meets small parts criteria (part spacing greater than 12" apart)

Figure 15. Small Parts Spacing

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#### 4.1.8.3 Metallic Part Requirements

All metallic components must be shown in the illustrations unless they are being identified as small parts. If a metallic part is not considered a small part, it shall either be identified in either of the below methods:

- Assigned a unique ID code to be fully described in the Material ID Table, or
- Identified with a code such as “M” that is defined in the illustration or Figure heading to be defined as “metallic part with no finish” or “metallic part with standard finish per D6-83466-1 MOC 3.34.”

**Note:** A part that is comprised of both metallic and non-metallic components (such as an electrical connector) shall be considered a non-metallic part.

#### 4.1.8.4 Adding Part ID Codes to Illustrations

All parts and unique constructions within a part that are shown in the illustrations shall be identified with a unique ID code. This ID code shall be described in the Material ID Table (see section 4.1.9). ID codes shall not be re-numbered from one figure to the next (that is, if one figure has 10 numbered items, the next figure with different components will start with number 11). If the same part is shown in multiple illustrations, the same ID code corresponding to this part shall be kept the same for all illustrations showing the part. See Figure 8 for an example.

**Note:** If small parts are shown in the illustrations, they must be identified with unique ID codes.

#### 4.1.8.5 Exceptions to Illustrations and ID Code Requirements

The following items are exceptions to the illustration requirements described in Sections 4.1.8.1, 4.1.8.2, 4.1.8.3, and 4.1.8.4.

##### 1. Cable Assemblies

Cable assemblies are typically comprised of many small parts in addition to variable lengths of cables/wiring. These cable assemblies require illustrations and ID Codes of all components, except the entire length of the cable does not need to be shown. See

Figure 16 for a cable assembly illustration example.

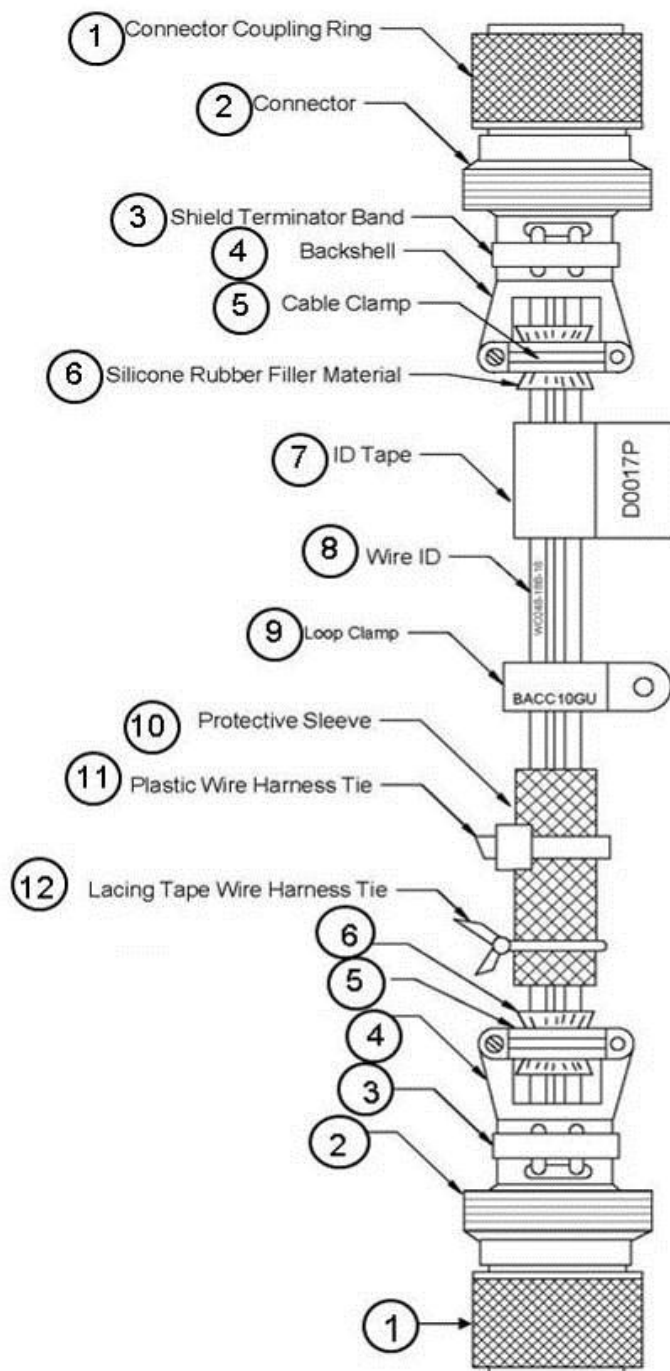


Figure 16. Example of a Cable Assembly Sketch, Showing all Parts and their Associated ID Codes for all parts

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## 2. Printed Circuit Board Assemblies

For printed circuit board assemblies, the small electronic circuit components (for example, capacitors, resistors, potentiometers, oscillators, diodes, transistors, and the glue or sealant used to mount these components) do not need to be shown in the illustrations of the part or listed in the Material ID Table. These types of components are considered small parts that do not significantly influence the flammability behavior of the printed circuit board. If the illustrations do in fact show these small parts, and do not provide an ID code for these, the test plan or report should describe what these parts are so that it can be verified that these are the small electrical components that do not need to be listed in the Material ID Table. The circuit board material itself, however, will still need to be identified in the illustration with an ID code and listed in the Material ID Table. See Figure 17 for an example of a printed circuit board.

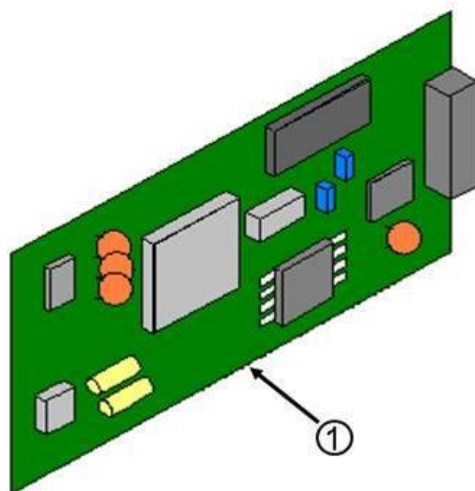


Figure 17. Example of a Printed Circuit Board (ID Code 1) with small electronic components attached to the surface

**Note:** Small electronic components attached to the printed circuit board do not need to be shown in the part illustrations or listed in the Material ID Table. If the small parts are shown as illustrated above, they do not need separate ID codes.

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## 4.1.9 Material ID Table

A Material ID Table describes the full material definition of all components used in the part, any testing needed, and reference to the applicable data within the test plan or report. Specific elements required in the Material ID Table are described below and summarized in Table 1.

A sample Material ID Table template has been included in Appendix A which can be used in test plans and test reports submitted.

**Note:** Example Material ID Tables with acceptable entries (Appendix B.1) and common errors (Appendix B.2) are shown in Appendix B.

### 4.1.9.1 Material ID Table Columns

At a minimum, the Material ID Table shall include the following columns and associated information:

#### 1. **Figure Number**

Provide a cross reference to the applicable Figure(s) for each component (ID code).

**Note:** If test specimens/articles are to be cut from a production part, include additional reference to the figure number showing the required information per Section 4.2.1.

#### 2. **ID Code**

Each ID code that has been identified in the illustrations shall be listed in ascending order.

**Note:** For small part listings that are purposely not shown in the illustrations and therefore have no ID code assigned, record “N/A” in the ID code column to indicate that the ID code is “not applicable.”

#### 3. **Part Number or Usage**

For each ID code or listing, provide either a name of the part or its intended usage or function.



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#### **4. Material Description**

For each ID code listed in the Material ID Table, the cross-sectional material construction shall be described. See section 4.1.9.2 for material information and nominal thickness guidelines.

**Note:** A visual representation of the stack up for multi-layered constructions is recommended. In addition, the test face(s) shall be identified. Common conventions used to identify test faces include Side A/Side B, Inside Face/Outside Face, Exposed Face/Non-Exposed Face). Refer to the example Material ID Table (Appendix B.1) for examples of material stack ups.

#### **5. Test Code(s)**

For each Material ID Table listing, identify the applicable flammability requirement or test code for the testing to be conducted, the data used for similarity, or the test substantiated by previous data.

If any acronyms or abbreviated terms are used to describe a particular test (such as “F1” for 60 second vertical Bunsen burner testing per 14CFR Part 25, Section 25.853(a)), add a note to the table or elsewhere in the document to describe the test code abbreviation used in the test code column.

#### **6. Data Sheet(s)**

Record one of the following in the data sheet column:

- a. The applicable page numbers within the test plan/report that contains the test data sheet(s) and, if applicable, the conformity and test witness paperwork.

**Note:** If a data sheet is comprised of multiple pages, each sheet shall reference the same data sheet ID NO and it should be clear that the multiple pages relate to the same data sheet.

**Note:** It is not acceptable to simply reference the data sheet, conformity and test witness page numbers from a different report. For example, when previously approved test data is being used, the data sheet column shall reference the specific page numbers within the test plan/report containing this information.

- b. The phrase “to be tested” if testing is planned
- c. Reference to a Boeing MI number, if applicable. Refer to Section 4.1.9.4.
- d. The abbreviation “N/A” if no test data is required.

**Note:** In this case, ensure that the MOC column (see Section 4.1.9.1 item 7) references the appropriate rationale for no testing.

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## 7. **MOCs**

If a method of compliance (MOC) is used to show compliance for a part (such as an MOC in Ref. (1) and (2)), it shall be referenced in the “MOC column” of the Material ID Table for the applicable ID code. In addition, the rationale for why the MOC is applicable shall be included.

For example, if the design uses a bond line of 1-inch or less and a total bond area is less than 288 square inches, the rationale for not testing per D6-83466-1, MOC 3.35, the adhesive would be as the following:

*“The design uses an epoxy (name of adhesive) adhesive with a bond line width of (insert bond line width per type design) with a total bonded area of (insert total surface area of the adhesive application). The substrates when tested alone (see page XX for data sheets) meet the regulatory requirements with the MOC-required margin (50%). Therefore, per D6-83466-1, MOC 3.35, the adhesive does not require testing to 14CFR Part 25, section 25.853(a) and only the substrates will be tested.”*

Table 1. Summary of Information Needed in Material ID Table Columns

Figure Number	ID Code	Part Name or Usage	Material Description	Test Code(s)*	Data Sheet (s)	MOC(s) (if applicable)
Specify the applicable figure(s) showing the ID code listed here	Specify ID code from the figure(s) to be described	Identify the part name or usage for which the ID code is applicable.	<p>Include one of the following options for each layer in the cross section:</p> <ol style="list-style-type: none"> <li>1. Supplier/material specification (along with the applicable specific type, grade, class, etc). Also include nominal thickness if not covered by specification.</li> <li>2. Manufacturer name, complete product designation and color designation (if applicable), and thickness</li> <li>3. Reference to the supplier name and specific supplier part number being tested, and thickness</li> </ol> <p>For parts deemed small per D6-83466-1 MOC 3.1 identify the following:</p> <ol style="list-style-type: none"> <li>1. Dimensions (length/width and thickness or diameter/thickness)</li> <li>2. General material description</li> <li>3. Quantity and spacing of multiple parts</li> </ol> <p><b>Recommendation:</b> Provide a visual representation of the stack up for multi-layered constructions. Examples are shown in Table B.1. Identify both faces for</p>	<p>Specify either of the following:</p> <ol style="list-style-type: none"> <li>1. The test code(s) for either test(s) to be performed for the ID code or the tests that were performed previously</li> <li>2. The indication “not applicable” or “N/A” to indicate that the test code is “not applicable” when test data is not required (for example when an MOC is to be used instead of testing)</li> </ol> <p><b>Note:</b> If a production part is being tested instead of fabricated test specimens, then reference a figure showing where the test specimen is taken from the part and where the flame is</p>	<p>Specify one of the following as applicable:</p> <ol style="list-style-type: none"> <li>1. Include page numbers of the test data sheet(s), conformity and test witness paperwork.</li> <li>2. Indicate “to be tested” if testing is planned,</li> <li>3. Leave blank if no test data is required and an MOC or Boeing MI number is being referenced.</li> </ol>	<p>Specify the following if an MOC is used:</p> <ol style="list-style-type: none"> <li>1. The specific MOC reference from either D6-83466-1 , FAA Issue Paper Item C-2, Project # SP10755SE-T, Stage 4, or FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012.</li> <li>2. The rationale for why the MOC is applicable</li> </ol>

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Figure Number	ID Code	Part Name or Usage	Material Description	Test Code(s)*	Data Sheet (s)	MOC(s) (if applicable)
			unsymmetrical constructions greater than 0.25 inches, so the data for each face can be clearly identified. Specify which face is being tested.  <b>Note:</b> When identifying the test face(s) common conventions used to identify test faces include Face A/Face B, Inside Face/Outside Face, Exposed Face/Non-Exposed Face.	applied.  <b>Note:</b> If information is necessary to explain why a specific flammability test is being conducted, this information shall be included.	<b>Note:</b> Test data sheets, conformity and test witness paperwork must be contained in the test plan or test report and not in a referenced document.	

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#### 4.1.9.2 Guidelines for Non-metallic, Metallic, and Small Parts

##### 1. Non-metallic Parts

- a. **Material Information:** The following are acceptable options for a full material description:
  - i. Part supplier's or industry material specification (along with the specific type, grade, class, or other classification that fully describes the material) for each material layer.
  - ii. Material manufacturer and manufacturer's name for the material. Include the complete product designation and color designation (if applicable). If the color definition is part of the manufacturer's complete product designation, include this information along with the name of the color.
  - iii. Reference to an identifier for the supplier's standard panel (or other item used repeatedly) defined completely elsewhere in the report
  - iv. Reference to the sub-tier supplier name and specific supplier part number being tested. For example, it might be a circuit board or video screen from a sub-tier supplier whose detailed design is not controlled by the supplier of the part being shown compliant.

**Note:** If this option (iv) is used, and no additional supplier material information is provided (as described above), future use of this data is limited to this part number.

- b. **Material Thickness:** Identify the nominal thickness of each layer in the cross-sectional material buildup. For each ID code listing, ensure that the units of measurement are provided and are consistent with the units of measurement presented in corresponding data sheet thickness reference. In addition, refer to the below information required for specific materials:
  - i. **Paint** - For painted constructions, identify how the coating thickness or application is controlled. The Material and Usage table shall identify one of the following: (a) the nominal coating thickness of the finishes applied; (b) reference to the document/specification that provides finish application instructions, or (c) a statement that the finish will be applied per the manufacturer's instructions (and the supplier has

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verified that these instructions provide sufficient information regarding how coating thickness is controlled).

- ii. **Surfacer materials** – Identify how the surfacer application is controlled per the engineering type design. Include the nominal thickness range information and specify areas to be covered (that is, specify whether only specific areas are covered or whether the surfacer is applied to the entire part). When surfacer does not cover an entire part surface, the Material ID Table shall identify two configurations: 1) without the surfacer and 2) with the maximum surfacer application.
- iii. **Tape** – For tape materials, if the product designation controls the thickness, the thickness does not need to be specified. Otherwise, provide the nominal thickness of the material used.

## 2. **Metallic Parts**

Each metallic component can be uniquely labeled with an ID code and then be fully described in the Material ID Tables. Alternatively, it is acceptable to exclude the metallic components from the Material ID Table listings, provided all of the below criteria are met:

- a. Testing is not required (such as in cases where 14CFR Part 25, section 25.853(d), section 25.855(c) and 25.856(a) do not apply)
- b. The metallic components do not contain magnesium or magnesium alloy
- c. A metal is either un-painted or is coated with a standard finish as defined per reference D6-83466-1 MOC 3.34, FAA Issue Paper, Item C-2, Project # SP10755SE-T, Stage 4, Part 1, Reference 16, or FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012.

**Note:** The standard finish shall be defined in the document (either in the illustration or another method). Any metallic component coated with a non-standard finish should be fully identified in the Material ID Table (as described for Non-metallic Parts above), unless these parts can be considered small parts.

- d. The illustrations clearly indicate which parts are metallic (either un-painted or with a standard finish per D6-83466-1, MOC 3.34).
- e. The metallic components are not bonded.

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### 3. Small Parts

#### a. **General:**

When a document is identifying the small part criteria being used, the document shall reference D6-83466-1, MOC 3.1 as the justification for no testing. **Note:** For small parts used with insulation, specify small part criteria per AC 25.856-1.

#### b. **Non-metallic Small Parts:**

All non-metallic small parts must be listed in the Materials ID Table. This listing shall identify:

- Unique ID codes, when applicable (refer to Section 4.1.8.4).
- The specific dimensions of the part (either length/width/thickness or diameter/thickness as applicable).
- The quantity of parts used
- Part spacing when multiple small parts are installed.

**Note:** Additional information/sketches may be needed to justify how small parts meet the quantity and spacing aspects of the MOC.

- Material description to address the known fire properties of the part. This can be a statement that the material passes either a recognized industry flammability test (such as UL94-V0, UL94-HB, etc.), or an FAA flammability test for one of the following:
  - 60 sec vertical (F1) test: 14CFR 25.853(a) Appendix F Part 1 (a) (1)(i)
  - 12 second vertical (F2) test: 14CFR 25.853(a) Appendix F Part 1 (a) (1)(ii)
  - 15 second horizontal (F3) test: 14CFR 25.853(a) Appendix F Part 1 (a) (1)(iv)
  - 15 second horizontal (F4) test: 14CFR 25.853(a) Appendix F Part 1 (a) (1)(v)

For any tests other than the tests per 14CFR Part 25 Appendix F and the UL94 tests, a copy of the flammability test procedure proposed shall be pre-coordinated with Boeing for review and approval.

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**c. Metallic Small Parts:**

Parts that qualify as small metallic parts are not required to be shown in the figures or individually in the table. However, if they are shown in any illustrations, refer to section 4.1.9.2, item 2 above (metallic parts).

**4.1.9.3 Similarity Data**

If the test article definition is different from the engineering design of the actual part/material/component (that is, similarity will be applied), then the test specimen shall also be fully defined in the Material ID Table as described in Section 4.1.9.1 above. The differences will need to be justified with FAA-approved MOCs.

1. Any similarity data shall follow federal regulations, FAA guidance, or the FAA-approved MOCs contained in either D6-83466-1, the FAA Issue Paper Item C-2, Project # SP10755SE-T, Stage 4, or FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012. Worst-case analyses, using engineering judgment shall not be used. This would be considered a new MOC and establishing a new means of compliance is an FAA function and cannot be delegated.
2. Justification shall be provided for each similarity analysis. For those MOCs used from D6-83466-1, FAA Issue Paper Item C-2, Project # SP10755SE-T, Stage 4, or FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012, it is sufficient to list the number of the MOC in the Material ID Table.
3. If previously approved data will be used to substantiate any part, then a copy of the original test specimen description, a copy of the test data, and proof of previous FAA or FCAA approval (per section 4.3.3) shall be included.

**4.1.9.4 Boeing-Supplied Parts**

Boeing-supplied parts for the finished assembly (For example, trim strips with a Boeing part number) shall be listed in the Material ID Table. For these items the Material ID Table shall note "Data on file at Boeing" in the data sheet column provided no additional bonding or similar processing affecting flammability certification occurs. Unless the part is a small part, a Boeing supplied Material Identifier (MI) number shall be referenced in the test data column. Contact Boeing DE for MI number information.



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#### **4.1.9.5 Sub-Components Addressed by Separate Flammability Reports**

There may be some cases where the showing of compliance for one or more sub-components of a part are addressed in a different flammability test plan/report. In these cases, the ID code applicable to this part shall be described as separately certified under a different flammability test plan/report. This information can be added either directly in the illustration or in the Material ID table.

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## 4.2 Specific Requirements for Test Plans

### 4.2.1 Test Specimens

Items to be tested shall be clearly identified in the Material ID Table.

1. Define specimens to be tested, including all dimensions with tolerances.

**Note:** The tolerance for the thickness dimension should match that of the type design. Indicate if these test specimens are to be cut from a part or are to be fabricated.

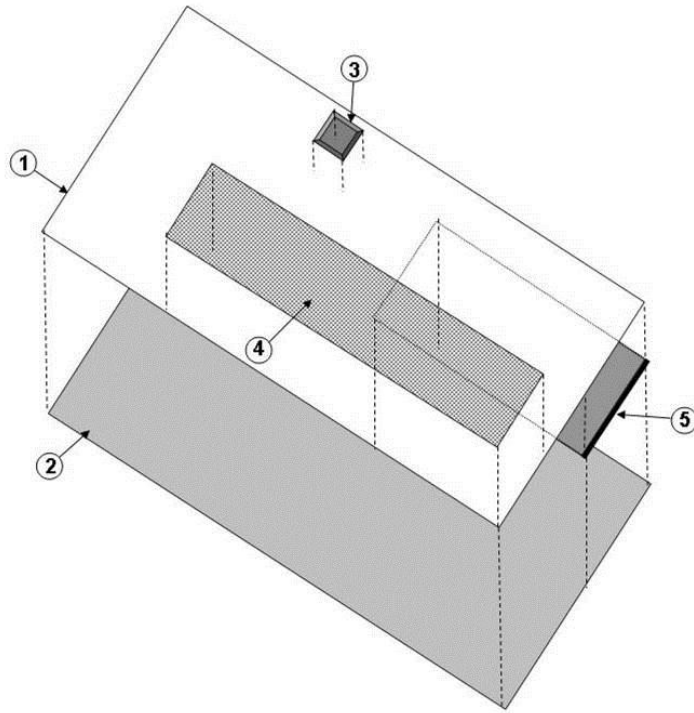
2. If a production part or a section cut from a part will be tested, a production drawing of the part shall be included in the test plan or with the test plan showing the configuration of the part. Include an illustration to show where the part will be cut, if necessary, to create the test specimen(s), and where the flame will be placed for the test(s). If a part has multiple cross-sections, multiple sets of tests may be required to certify the various cross-sections. Examples of this would be where a component is only painted or coated on a portion of the part and is bare on the rest of the part, or has a local reinforcement bonded to only a portion of the part. See Figure 18 for an example illustration.

**Note:** It may be necessary to use more than one production part to cut the required number of test specimens.

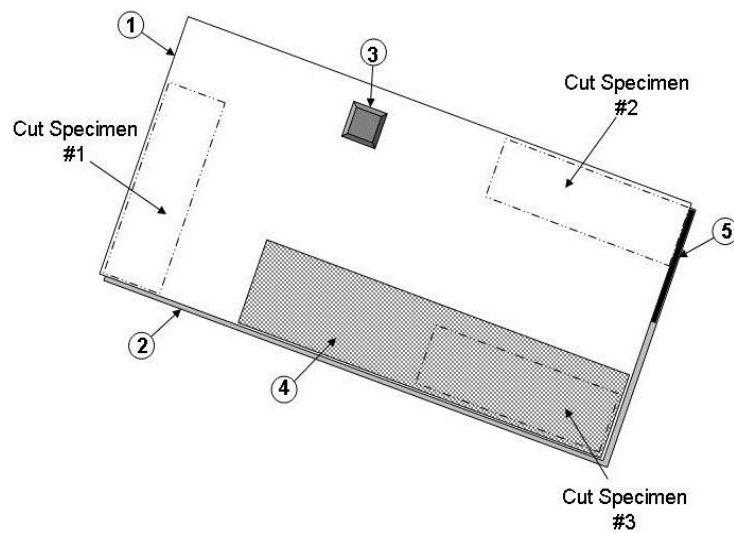
3. If specimens are to be fabricated, indicate how the specimen matches the type design material definition. Explain any differences between the part cross-section and the specimen cross-section. Indicate the face to be tested.
4. The test specimen(s) shall be identified with: the test article ID number and specimen number. The test articles must be clearly marked so that the test lab knows which articles correspond to which items in the test plan.

**Note:** The marking shall be on the opposite face from the one to be tested. In the case where the specimen consists of two or more separate parts (not bonded together) the separate parts shall be attached or bagged such that specimens will not become separated during transportation and handling.

5. When test articles are shipped from the location of conformity inspection to the test lab, they must be shipped with the required conformity paperwork (FAA Form 8130-3).



**(a) Exploded view showing unique components in part**



**(b) Specimens and flame locations for three unique material constructions requiring Bunsen burner testing**

Figure 18. Example views (a) and (b) show where to cut specimens from a production part

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## 4.2.2 Conformity Table

A conformity table shall be included with the following minimum information:

1. A title describing the table content; i.e, the “Summary of Specimen Sets to be Conformed and Test Witnessed.”
2. This table shall identify all specimens for 14CFR Part 25 certification tests as these specimens require FAA conformity inspection. This table shall not identify specimens only being tested to Boeing smoke and toxicity requirements in D6-51377 as FAA conformity inspection is not required.
3. List all the sets of test specimens that require conformity inspection for a given test.
4. Include a summary of the number of sets of specimens to be tested (a set being defined as three or more specimens/test articles).
5. Include the ID code from the Material ID Table.

Table 2 below provides an example of a conformity table. A blank form is also included in Appendix A.

Table 2. Example of Conformity Table--Summary of Specimen Sets to be Conformed and Test Witnessed

ID Code(s) (from Material ID Table)		Specimen/test article ID code*			Test Code
1		xxx-F2			F2
2		xxx-F1			F1
2		xxx-HR			HR
2		xxx-SM			SM
4		xxx-F2			F2
Summary of Specimen Sets Required to be Conformed and Tested					
60 Sec Vertical Burn (F1)	12 Sec Vertical Burn (F2)	15 Sec Horizontal Burn (F3)	OSU Heat Release (HR)	Smoke Density (SM)	Oil Burner (OB)
1	2	N/A	1	1	N/A

\* Specify the tolerance information for specimen width, length, and thickness

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### 4.2.3 Example Test Data Sheets

Example data sheets are provided in Appendix A for Bunsen Burner, OSU/Heat Release and Smoke Density/SM testing. It is recommended that these data sheets are provided in the test plan such that the material information between the data sheet and corresponding material ID table can be verified for consistency and accuracy prior to the submittal of test report.

### 4.2.4 Conformity Inspection Personnel and Facilities

#### **General Information:**

FAA conformity of the test articles is required for flammability tests conducted to demonstrate compliance with the applicable requirements of 14CFR Part 25.

**Note:** Prior to test witnessing, the responsible AR/OBAR will review the completed conformity documentation to validate that the test article and test setup are in conformity. After this step, each flammability test must be witnessed by an FAA-authorized witness (see Section 4.2.5).

Under the Regulatory Administration, FAA conformity must be performed by a Regulatory Administration M-unit member or an ODA unit member.

When a supplier's test plan is acceptable, the responsible AR will approve the test plan and submit a "Request for Conformity" (RFC) on FAA Form 8120-10 to the FAA (or their designee) for processing. Normal flow time for conformity, after the test plan is approved, is 14 days prior for U.S. suppliers and 30 days for non-U.S. suppliers.

#### **Required Information:**

The following information is required to be included in a test plan:

1. Provide a separate section with the title "Conformity Inspection."
2. Identify the location where the conformity inspection of the test articles/specimens will take place.
3. Identify the name and phone number of the contact at the supplier for coordination of the conformity inspection.
4. Provide a date when the test articles are ready for conformity inspection. As an option, the supplier may list a period of time based on the approval date of the test plan; for example, "the test configurations will be ready for conformity two weeks after the approval of the test plan."

- 
5. Identify the conformity inspector. Conformity inspections can be performed by either an internal (Boeing) Regulatory Administration M-unit member, external (supplier) Regulatory Administration M-unit member, an independent DAR (external Regulatory Administration member), or an ODA unit member. The test plan shall state which type of conformity inspector will be used. The following wording is recommended:

- a. For internal (Boeing) Regulatory Administration M-unit members, or an ODA unit member:

***“Request delegation of conformity to an internal Regulatory Administration M-unit member or an ODA unit member”***

- b. For external (supplier) Regulatory Administration M-unit member, or an ODA unit member:

***“Request delegation of conformity inspection to an external Regulatory Administration M-unit member, or an ODA unit member from [insert company name here]”***

- c. For an independent DAR who is an external M-unit member:

***“Request delegation of conformity inspection to external Regulatory Administration M-unit member, or an ODA unit member [insert name, phone number, and fax number (e-mail address is optional for fax number) here.]”***

**Note:** If pre-arrangements have been made for conformity inspections, test plans may identify the M-unit member who will be performing the conformity inspection.

## 4.2.5 Test Witnessing Personnel and Facilities

The following information shall be included:

1. The name and address of every laboratory that will be conducting tests shall be listed in the test plan along with the specific testing to be conducted (flammability, heat release, etc.) and a contact name and phone number at the laboratory. **Note:** Any laboratory used must be an FAA approved lab.
2. If any laboratory is doing more than one type of testing (e.g., heat release and smoke emission), only one listing of complete information for that laboratory is needed. The additional test location information may be listed as “same as for (heat release, flammability, etc.).”

- 
3. The name of each AR/OBAR requested to witness the certification tests shall be included in the test plan. Identify the specific tests (e.g., flammability, heat release, smoke emission) each person is requested to witness.

**Note:** A list of Boeing ODA OBAR fire property test witnesses is located for suppliers on the Boeing Supplier Portal at <https://suppliers.boeing.com/>. Select the Engineering tab and access the portlet titled, "Flammability Test Witnessing Resources (OBARs)." For Boeing personnel, this same list is located at <http://flamweb.web.boeing.com/>, under the tabs, "Authorized Reps"/"OBAR Fire Property Test Witnesses."

## 4.3 Specific Requirements for Test reports

In addition to including all the details and elements of a test plan, the test report shall contain the information listed in this section. If no test plan was submitted (that is, no new testing is being proposed and only similarity data or MOC substantiation is being presented), the information summarized in section 4.2 is not required.

### 4.3.1 Test Data Sheets

Copies of the actual test data sheets with the test technician name, witness signature/name, and date of test shall be provided. Refer to Appendix A for examples of test data sheets.

**Note:** If a data sheet is comprised of multiple pages, each sheet shall reference the same data sheet ID code and it should be clear that the multiple pages relate to the same data sheet

### 4.3.2 Evidence of Validity for New Test Data

When the certification project includes new flammability test data, the test report shall contain the following:

1. Evidence of conformity inspection shall be included for all new data. New data includes data generated in association with a project for a different airplane which has not yet completed certification (project closure). For all conformity inspections, the minimum acceptable evidence is FAA form 8130-3 or FAA form 8100-1.
2. A statement that the conformity paperwork is included for reference purposes and that authoritative conformity paperwork can be found in the DRO database.
3. The test witness statement signed by the authorized AR, OBAR, or foreign suppliers' qualified individual (per D6-84787). Boeing personnel may refer to the AR database or [http://bdco.web.boeing.com/cert\\_foreign.asp](http://bdco.web.boeing.com/cert_foreign.asp) for witness authorization. Refer to Appendix A for an example of a Test Witness Statement template.

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### 4.3.3 Evidence of Previously Approved Test Data

When the certification project includes previously approved flammability test data, the test report shall contain the following:

1. For all test data generated as part of a Boeing ODA or DOA project , a test witness statement signed by a Boeing ODA AR/OBAR or foreign supplier's qualified individual (per D6-84787). The elements required in a test witness statement are shown in an example test witness statement template in Appendix A.
2. For FAA certification projects other than Boeing ODA or DOA projects, an FAA form 8110-3, FAA form 8100-9, or other documentation specifically showing FAA approval of the data (reference BPI-3742).
3. For bilateral partner FCAA certification projects, the applicable regulatory stamp and/or signature on the data sheet or other documentation specifically showing FCAA approval of the data (reference BPI-3742). The regulatory stamp and/or signature must be from an FCAA person or organization that has design approval authority. Production approval or quality assurance approval is not acceptable.
4. When applicable, the Boeing MI for a component of the part may be referenced with a statement that the data are on file at Boeing. No evidence of regulatory approval of this data is required in the report.

**Note:** When previously approved test data is submitted with the evidence specified above, evidence of conformity inspection is not required.



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## Appendix A: Blank Templates

The blank templates included in this appendix have been provided for reference only and they outline the minimum requirements necessary.

**Note: The use of these templates is recommended but not required.**

- A.1 Sample Cover Page
- A.2 Sample Revision Log
- A.3 Sample Material ID Table
- A.4 Sample Conformity Table
- A.5 Sample Test Witness Statement Page
- A.6 Sample Bunsen Burner Test Data Sheet
- A.7 Sample Smoke Density (SM) Test Data Sheet
- A.8 Sample OSU/Heat Release Test Data Sheet
- A.9 Summary of Information Needed in the Checksheet Table Columns
- A.10 Example Supplier Checksheet

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A.1 Sample Cover Page

<b>Cover Page</b>	
<b>Fire Property Test Plan / Test Report</b>	
This submittal is a (check applicable one below):	
<b>Test Plan:</b> <input type="checkbox"/>	<b>Test Report:</b> <input type="checkbox"/>
Company Name:	
Company Address:	
Document No.:	
Revision No.:	
Title:	
Part Number(s):	
Airplane Model:	
Airline /Airplane Effectivity:	
Prepared by:	Date:
Checked by:	Date:
Approved by:	Date:

A.2      Sample Revision Log

Revision Log				
Rev Level	Page Number	Date	Description of Change	Approval

---

### A.3 Sample Material ID Table

Figure Number	ID Code	Part Name or Usage	Material Description	Test Code(s)	Data Sheet(s)	MOC(s) (if applicable)

## A.4 Sample Conformity Table

<b>Summary Specimen/Test Article Sets to be Conformed &amp; Witnessed</b>					
<b><i>FAA Certification Testing Only</i></b>					
<b>ID Code(s) (from Material ID Table)</b>		<b>Specimen/test article ID code*</b>		<b>Test Code</b>	
<b>Summary of Specimen Sets Required to be Conformed and Tested</b> <b>Note: A set is a minimum of three (3) specimens/test articles)</b>					
<b>60 Sec Vertical Burn (F1)</b>	<b>12 Sec Vertical Burn (F2)</b>	<b>15 Sec Horizontal Burn (F3)</b>	<b>OSU Heat Release (HR)</b>	<b>Smoke Density (SM)</b>	<b>Oil Burner (OB)</b>

\*Specify the tolerance information for specimen width, length, and thickness

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A.5 Sample Test Witness Statement Page

**Test Witness Statement**

I attest that:

- a. The following test results were obtained by properly following [**COMPANY NAME AND TEST PLAN NUMBER**] dated [**DATE**] associated with Regulatory Administration Project No. [**PROJECT NUMBER**].
- b. The conformity inspection results of the test articles were satisfactory, or were appropriately dispositioned by the responsible person(s) identified on FAA form 8120-10.
- c. The test record accurately reflects the test activity and test results.

**For foreign supplier's qualified individual:**

I am a staff member of [**ENTER COMPANY NAME AND ORGANIZATION APPROVAL**] and the test(s) was witnessed on behalf of Boeing ODA -300064-NM.

**For Boeing ODA AR/OBAR:**

I am an [AR/OBAR] of Boeing ODA -300064-NM.

**[INSERT SUMMARY OF SPECIMENS/TESTS WITNESSED**

**HERE]**

\*\*\* Test Witness signature

[Sign here]

[Printed NAME]

Authorized Test Witness

Date: \_\_\_\_\_

## A.6 Sample Bunsen Burner Test Data Sheet

<b>Flammability Bunsen Burner Test Data Sheet</b>						No: _____		
Test Plan No: _____		Material Description: _____						
Usage: _____		MFG / Supplier: _____				Airplane Model: _____		
Test Facility: _____		Tel: _____				Fax: _____		
Postal Address: _____								
Tested by: _____		Witnessed by: _____				Test Date: _____		
<b>Test Requirements</b>				<b>14CFR/JAR/CS 25.853(a) App. F, Part I</b>				
<b>Conditioning</b> (min 24 hrs at 70 +/- 5 °F; 50% +/- 5% rel. humidity)						<b>Conditioning:</b> _____		
<b>Flame Temp.</b> (min 1550 °F)						<b>Flame Temp:</b> _____		
Pass/ Fail	Test Method	Ignition Time - Material Orientation	Extinguish Time (sec)	Burn Length (in)	Drip Extinguish Time (sec)	Burn Rate (in/min)	Flame Penetration	After Glow (sec)
		F1. 60 sec - vertical	15	6	3	N/A	N/A	N/A
		F2. 12 sec - vertical	15	8	5	N/A	N/A	N/A
		F3. 15 sec - horizontal	N/A	N/A	N/A	2.5	N/A	N/A
		F4. 15 sec - horizontal	N/A	N/A	N/A	4.0	N/A	N/A
		F5. 30 sec - 45 degrees	15	N/A	N/A	N/A	None	10
		F6. 30 sec - 60 degrees	30	3	3	N/A	N/A	N/A
<b>Test Results (Bunsen Burner Test)</b>								
Sample No.	Test Method	Extinguish Time (sec)	Burn Length (in)	Drip Extinguish Time (sec)	Burn Rate (in/min)	Flame Penetration	After Glow (sec)	Test Specimen Sketch(s)*
1								Include test specimen sketch here or submit on a separate page(s)
2								
3								
AVG.								

**\*Test Specimen Sketch** (include material descriptions, construction, adhesives, thickness, etc.)

## A.7 Sample Smoke Density (SM) Test Data Sheet

<b>Smoke Density Test Data Sheet</b>		<i>No:</i>
Test Plan No:	Material Description:	
Usage:	MFG / Supplier:	Airplane Model:
Test Facility:	Tel:	Fax:
Postal Address:		
Tested by:	Witnessed by:	Test Date:
<b>Test Requirements</b> <span style="float: right;"><b>14CFR/JAR/CS 25.853(d) App. F, Part V</b></span>		
<b>Conditioning</b> (min 24 hrs at 70 +/- 5 °F; 50% +/- 5% rel. humidity)		Conditioning:
<b>Radiant Heat Flux</b> (W/cm <sup>2</sup> ): 2.5 +/- 0.05 W/cm <sup>2</sup> (2.2 +/- 0.04 Btu/ft <sup>2</sup> /sec)		Radiant Heat Flux:
Sample No.	Specific Optical Density after 4 minutes (D <sub>s</sub> )	Test Specimen Sketch*
1		
2		
3		
Include test specimen sketch here or submit on a separate page(s)		
Average		
Test Requirements	Maximum 200	

**\*Test Specimen Sketch** (include material descriptions, construction, adhesives, thickness, etc.)



## A.8 Sample OSU/Heat Release Test Data Sheet

<b>OSU Heat Release Data Sheet</b>				No:	
Test Plan No:		Material Description:			
Usage:	MFG / Supplier:		Airplane Model:		
Test Facility:		Tel:		Fax:	
Postal Address:					
Tested by:		Witnessed by:		Test Date:	
<b>Test Requirements</b>		<b>14CFR/JAR/CS 25.853(d) App. F, Part IV</b>			
<b>Conditioning</b> (min 24 hrs at 70 +/- 5 °F; 50% +/- 5% rel. humidity)			Conditioning:		
<b>Radiant Heat Flux:</b> 3.5 W/cm <sup>2</sup>			Radiant Heat Flux:		
<b>Test Results</b>					
Sample No.	Total Heat Release after 2 min. Q (kW-min/m <sup>2</sup> )	Peak Heat Release Rate during 5 min. DQ/DT (kW/m <sup>2</sup> )	Observations / Time (sagging, melting, delaminating, etc.)	Test Specimen Sketch*	
1				Include test specimen sketch here or submit on a separate page(s)	
2					
3					
Average					
Test Requirements	Maximum 65	Maximum 65			

**\*Test Specimen Sketch** (include material descriptions, construction, adhesives, thickness, etc.)

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## A.9 Summary of Optional Checksheet Information

Item #	Item Description	Initiator (attests to completion)	Focal (confirms completion)
Specify an item reference number	Briefly describe the D6-49936 requirement being evaluated. See Appendix A.10 for examples.	Identify the person responsible for preparing the test plan/report.	Identify the person responsible for checking the accuracy/completion of test plan/report.

## A.10 Example Supplier Checksheet

Item#	Item Description	Initiator (attests to completion)	Focal (confirms completion)
1	<b>Do all the Small Parts meet the requirements of MOC 3.1?</b> <ul style="list-style-type: none"> <li>• Three dimensions provided</li> <li>• Material description included (with known fire properties)</li> <li>• Total quantity provided</li> <li>• For more than one small part, spacing has been provided</li> </ul>		
2	<b>For all non- small parts have the following information been provided?</b> <ul style="list-style-type: none"> <li>• Full material definition</li> <li>• Full specification definition, or full vendor call outs</li> <li>• Color</li> <li>• Thickness or process specification</li> </ul>		
4	<b>Have all bonding specs been identified?</b>		
5	<b>Is surfacing material used on any parts? (Y/N)</b> <b>If yes:</b> <ul style="list-style-type: none"> <li>• Identify specification that controls thickness</li> <li>• Have minimum and maximum amounts been tested?</li> <li>• Is D6-83466-1 MOC 3.44 identified for testing minimum/maximum amounts?</li> </ul>		
6	<b>Is primer or paint used on any parts? (Y/N)</b> <b>If yes:</b> <ul style="list-style-type: none"> <li>• Identify thickness or process that controls thickness</li> </ul>		
7	<b>Do the illustrations include the following?</b> <ul style="list-style-type: none"> <li>• Complete views of the part with ID Codes</li> <li>• Identification of all components of the part(s) (except for small parts)</li> </ul>		
8	<b>Has a complete Material ID Table been included?</b>		
9	<b>Has a complete Conformity Table been included?</b>		

---

## Appendix B: Example Material ID Tables

This appendix includes examples of both acceptable entries (B.1) and common errors found in Material ID Tables (B.2).

B.1 Example Material ID Table with Acceptable Entries

B.2 Example material ID Table with Common Errors


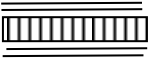
## B.1 Example Material ID Table with Acceptable Entries

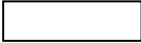
The column labeled “Type of Example” has been added to this table to explain the types of examples being presented and is for the purpose of this document only. It shall not be included in the Material ID Table submitted with test plans and test reports.

Table B.1 Example Material Identification Table

Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Single layer material w/test data	1	1	Handset cover		SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1”	F2	Pg. 25-27	
Single layer material to be tested	1	1	Handset cover		SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1”	F2	To be tested	
Single layer material referencing an MOC	1	1	Handset cover		SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1”	F2	Pg. 29-30	Per Issue paper Part 1, Ref#2  The test article thickness is less than 0.1”






Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Single layer material with paint (thickness controlled by manufacturer's instructions) w/test data	1	1	Handset cover	_____	Paint, General Paint Company, product ABCDEFG-123, color sky blue, thickness controlled by General Paint Company instructions.	F2	Pg. 25-27	
				-----	SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1"			
Single layer material with paint (thickness specified) w/test data	1	1	Handset cover	_____	Paint, General Paint Company, product ABCDEFG-123, color sky blue, thickness 0.002" + 0.0005"	F2	Pg. 25-27	
				-----	SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1"			
Bonded construction with adhesive thickness controlled by process spec w/test data	1	1	Handset cover	_____	SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1"	F2	Pg. 25-27	
				xxxxxxx	Henkel Corp Hysol EA9309.3NA applied per Supplier Name process spec XYZ-123			
				_____	SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1"			

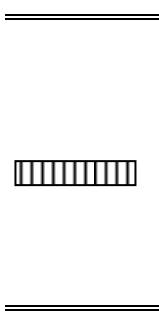
Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Bonded construction with double backed tape w/test data	1	1	Handset cover		Sabic, Lexan FST9705 Color GY5D543 grey, thickness 0.06"  Double Back Tape: 3M Y-4914  Sabic, Lexan FST9705 Color GY5D543 grey, thickness 0.06"	F2	Pg. 31-36	
Panel with surfacer and paint (thickness of surfacers and paint controlled by process spec) w/test data	5	2	Sidewall	<div>Face A</div> <div>-----</div> <div>+++++++</div> <div></div> <div>Face B</div>	Paint, General Paint Company, product ABCDEF-123, color sky blue, applied per Supplier Name Process spec PNT-123  Surfacer, General Surfacer Company product GHIJKL-123, applied per Supplier Name process spec SUR-123.  P/N MNOPQR-123, BMS 8-223 Type 20, class 2, grade B glass fiber reinforced phenolic laminate, 2 plies each side with BMS 8-124, Class 1, Type1, Grade 4, 0.5” thick core	F1 (Face A)  F1 (Face B)  HR (Face A)  SM (Face A)	Pg. 5-6  Pg.7-9  Pg.11-13  Pg.15-17	




Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Panel referencing an MOC	5	2	Sidewall	-----  xxxxxxx  	Decorative laminate, General Declam Company, Product ABC-123, color XYZ beige  Adhesive, Bostik product 7132R/Boscodur24T, applied per Boeing process spec BAC5319 method 1  P/N ABCDEFG-123, BMS 8-226 Type 2, class 3A, glass fiber reinforced phenolic laminate	F1  HR  SM	Pg. 8-10  Pg.12-15  Pg.18-20	Per D6-83466-1, MOC 3.36 (color of decorative laminate) the part construction is substantiated by test results for a different color decorative with margins met.
Single small part, with F4 engineering data available on file referencing an MOC	6	3	Washer		Polyolefin, General Washer Company, meets F4 engineering test. Data available on file at [enter supplier name here] 1.5" diameter x 0.1" thick Quantity = 1	N/A	N/A	Small part per D6-83466-1, MOC 3.1



Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Single Small Part referencing an MOC	7	3	Placard		Polycarbonate, General Placard Company, meets UL-94 V-0 rating 2" X 1.5" x 0.1" Quantity = 1	N/A	N/A	Small part per D6-83466-1, MOC 3.1
Multiple Small Parts referencing an MOC	7	3	Placard		Polycarbonate, General Placard Company, meets UL-94 V-0 rating 1.5" X 1.5" x 0.1" Qty =4 Spacing – 4 within a 12-inch diameter circle	N/A	N/A	Small part per D6-83466-1, MOC 3.1. The total area of all four small parts still fit within a 3"x3" area, without stacking.
Test of specimens cut from a production part, to be tested.	8	4	Shroud		Supplier XYZ, part number 123-ABC (thickness=0.08")  See Figure Z for sketch of where the test specimen is taken from the part and where the flame is applied	F2	To be tested	
Edge filler—tested per Issue Paper	N/A	5	Used on a class divider panel		Edge filler: Huntsman Advanced Materials Americas, Inc, Epocast 1638 A/B edge fill compound	F1	Pg.11-13	A block of edge filler tested per Ref. X Issue Paper, Part 1, Ref. 33.

Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Bonded detail referencing an MOC	9	6A	Thermoplastic detail bonded to ID 6B base panel	<div>Face A</div> <div>  </div> <div>  </div> <div>  </div> <div>  </div> <div>  </div> <div>Face B</div>	<p>Thermoplastic: Sabic, Lexan FST9705 Color GY5D543 grey, thickness 0.06"</p> <p>Adhesive, Henkel Corp Hysol EA9309.3NA applied per Company ABC process spec XYZ-123</p> <p><b>Base Panel (ID 6B):</b> Prepreg-BMS 8-226 Type 2, Class 3A (2 plies)</p> <p>Honeycomb Core, Hexcel Corp., HTP-3/16-4.0, thickness=0.5"</p> <p>Prepreg-BMS 8-226 Type 2, Class 3A (2 plies)</p>	F2	To be tested	<p>FAA Issue Paper Item C-2, Project #SP10755SE-T, Stage 4, Part 2, Ref #28 MOC. Testing of thermoplastic detail by itself (without adhesive) substantiates the bonded configuration.</p> <p><b>Note:</b> Base panel substantiated separately in ID 6B below).</p>

Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Base panel, to be tested.	9	6B	Base panel		<p>Prepreg-BMS 8-226 Type 2, Class 3A (2 plies)</p> <p>Honeycomb Core, Hexcel Corp., HTP-3/16-4.0, thickness=0.5"</p> <p>Prepreg-BMS 8-226 Type 2, Class 3A (2 plies)</p>	F1	To be tested	
Metal part, with in-organic coating referencing an MOC	10	3	Metal Plate		0.06" thick 7075-T6 aluminum, phosphoric acid anodized per BAC 5555	N/A	N/A	Per D6-83466-1 MOC 3.34 Or Issue Paper, Part1, Ref. 16
Metal part with in-organic conversion coating and organic epoxy primer, referencing an MOC	11	5	Metal Plate		0.06" thick 6061-T6 aluminum, with chromate conversion coating per MIL-DTL-5541 Type II, Class 1A, and 2 coats of BMS 10-11 Ty 1 primer applied per BAC 5736	N/A	N/A	Per D6-83466-1 MOC 3.34 Or Issue Paper, Part1, Ref. 16.

Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Metal part, bonded to a panel , with test data	12	8	Metal Cover		<p>0.02" Aluminum sheet 5052H34, phosphoric acid anodized surface treatment</p> <p>Adhesive, Henkel Corp Hysol EA9309.3NA applied per Company ABC process spec XYZ-123</p> <p>Thermoplastic: Sabic, Lexan FST9705 Color GY5D543 grey, thickness 0.079"</p>	F2	Pg. 8-9	
Powder coated metal, referencing an MOC	13	9	Metal Shroud		<p>0.06" 6061-T6 aluminum</p> <p>Tiger Draylac, powder coat P/N 249/76590, color BAC 70375 Grey, applied per Supplier Name process spec XYZ-123</p> <p>Size: 10 inch x 6 inch</p>	N/A	N/A	Per D6-83466-1 MOC 3.34 or Issue Paper, Part1, Ref. 17
Boeing-supplied part, where MI number has been obtained from Boeing design engineer.	14	11	End Cap mechanically fastened on a galley wall		<p>Molded Plastic: Boeing part# 432W7101-6H</p>	F2	<p>MI # C2631-102-2S</p> <p>Data on file at Boeing</p>	

Type of Example	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
The trim is mechanically attached to the panel, therefore tested by itself., referencing an MOC	15	12	Painted Trim	+++++++  =====	Paint - BMS 10-83 Type VII Color - BAC 67890  Trim - BMS 8-400 Type II Form A, BAC 70913 .060"	F2	Pg. 33-35	D6-83466-1, MOC 3.7--The test data has sufficient margin to show compliance with a different color of BMS 10-83
Seal is mechanically attached to the panel, therefore tested by itself, referencing an MOC	17	21	Seal		BMS 1-72 Class 1 Grade A Form C BAC 70913 0.040" – Color 67890	F3	Pg. 35-37	D6-83466-1, MOC 3.9. Testing for 0.030" cross section of a single material shows compliance for 0.040" cross section.  D6-83466-1, MOC 3.38 Test data of BMS 1-72 has sufficient margin to show compliance with a different color of thermoplastic.

**\* Example Test Code References:**

F1- 60 sec. vertical. [14CFR25.853(a) Appendix F Part I (a)(1)(i)]

F2- 12 sec. vertical. [14CFR25.853(a) Appendix F Part I (a)(1)(ii)]

F3- 15 sec. horizontal. [14CFR25.853(a) Appendix F Part I (a)(1)(iv)]

HR-OSU/Heat Release [14CFR25.853(d) Appendix F Part IV]

F4- 15 sec. horizontal. [14CFR25.853(a) Appendix F Part I (a)(1)(v)]

F5- 30 sec. 45 degree [14CFR25.853(a) Appendix F Part I (a)(2)(ii)]

F6- 30 sec. 60 degree [14CFR25.869(a)(4)]

SM- Smoke Density [14CFR25.853(d) Appendix F Part V]

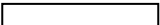
## B2. Example Material ID Table with Common Errors

The areas in Table B.2, highlighted in blue, are common error examples.

**Note:** This is not a comprehensive list.

Table B.2. Examples of Common Errors in Material ID Table Entries

Error	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Incomplete material description	3	1	Handset cover		Thermoplastic sheet, color gray, thickness: 0.1”	F2	Pg. 25-27	
Data sheets not contained in report. Data sheet reference is for another document	3	1	Handset cover		SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1”	F2	See test report xyz123-55, Rev. F	
Small part: missing quantity and dimensions	4	2	Placard		Polycarbonate, General Placard Company, meets UL-94 V-0 rating	N/A	N/A	Small part per D6-83466-1, MOC 3.1

Error	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
Small part: known fire properties not identified and incomplete material description	5	3	Placard		<b>Plastic, 2" X 1.5" x 0.1"</b> Quantity=1	N/A	N/A	Small part per D6-83466-1, MOC 3.1
Tubing: diameter specified instead of wall thickness, to be tested	8	15	Tubing		<b>General Tubing Company, product TB123-ABC, color black, 0.25" diameter</b>	F2	Pg.18-21	
PWB: incomplete material definition: missing solder mask and conformal coating information referencing an MOC	11	18	PWB		<b>Fiber reinforced epoxy laminate, PWB Laminate Company, product PWB-123, 0.079" thick</b>	F2	Pg. 1-3	Ref. X Issue Paper, Part 1, ref #26, thinner laminate (0.063") tested but same material construction

Error	Figure Number	ID Code	Part Name or Usage	Material Description		Test Code(s)*	Data Sheet (s)	MOCs (if applicable)
No reference to control the paint thickness	5	1	Handset cover	_____	Paint, General Paint Company, product ABCDEFG-123, color sky blue	F2	Pg. 25-27	
				-----	SABIC, Lexan 940-GY5D360, color gray, thickness: 0.1”			

**\* Example Test Code References:**

F1- 60 sec. vertical. [14CFR25.853(a) Appendix F Part I (a)(1)(i)]

F2- 12 sec. vertical. [14CFR25.853(a) Appendix F Part I (a)(1)(ii)]

F3- 15 sec. horizontal. [14CFR25.853(a) Appendix F Part I (a)(1)(iv)]

HR-OSU Heat Release [14CFR25.853(d) Appendix F Part IV]

F4- 15 sec. horizontal. [14CFR25.853(a) Appendix F Part I (a)(1)(v)]

F5- 30 sec. 45 degree [14CFR25.853(a) Appendix F Part I (a)(2)(ii)]

F6- 30 sec. 60 degree [14CFR25.869(a)(4)]

SM- Smoke Release [14CFR25.853(d) Appendix F Part V]



[illegible][illegible]

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## Revision Record

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**Revision Letter****A****Changes in this Revision**

Page 7 – Added the paragraphs 10 and 11 to clarify the flammability requirements  
Page 8 – Added a reference to OSU test procedure and editorial change  
Page 12 – Added a new test code “HR” for OSU test  
Page 14 – Added a new flammability test format for OSU test  
Pages 2,3,3,A-1, and A-5 – Editorial changes

**Signatures**

AUTHOR:	(Signature on file) Ju H. Kim	Org. Number	3/25/87 Date
APPROVAL:	(Signature on file) Clive. S. Carter	Org. Number	3/25/87 Date

---

**Revision Letter****B****Changes in this Revision**

Pages 2,3,4,5 – Editorial Changes, extended paragraph 1 and Section 3.  
Pages 6,7 – Section 4 – Expanded and reordered Preparation Instructions  
Page 8 – Added references 14CFR121-198 and BSS7238; moved expanded Test Laboratory information section to Page 10  
Pages 8 and 9 thru 14 – Renumbered to 9 and 11 thru 16. Added Test Code “SM” for smoke to new page 14.  
Page 17 – Added page for Smoke Data Reporting Format  
Page 18 – Added Checklist page to aid in preparation review.  
Appendix A-1 thru A-13 – Expanded to 21 pages and revised for clarity and the addition of smoke requirements.

**Signatures**

AUTHOR:	(Signature on file) Ray R. Rydberg	Org. Number	7/6/89 Date
APPROVAL:	(Signature on file) Clive S. Carter	Org. Number	7/7/89 Date

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## Revision Record

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**Revision Letter****C****Changes in this Revision**

General Document Update

Added details regarding small part definition, inclusion of heat release data sheets and conformity inspection paperwork, 14CFR and JAR references, part number details included in report, details regarding test witnessing and conformity inspection, similarity information

Changed Appendix number to alpha character per document standards

Previous Appendix 1 (Example of Test Plan) was completely revised and became Appendix C

Appendix A includes the Forms for standard fire property test plan/report that were previously part of the general document text

Appendix B is the checklist previously included in the body of the text. Checklist was

**Signatures**

AUTHOR:	<u>Ray R. Rydberg</u>	<u>6-20P3</u> Org. Number	<u>January 24, 2005</u> Date
APPROVAL:	<u>Richard G. Struve</u>	<u>6-20P3</u> Org. Number	<u>January 24, 2005</u> Date
DOCUMENT RELEASE:	<u>Scott Pace</u>	<u>G-8823P</u> Org. Number	<u>February 1, 2005</u> Date

---

**Revision Letter****D****Changes in this Revision**

Added the Export Control Classification Number (ECCN) to the front page.

**Signatures**

AUTHOR:	<u>Ray R. Rydberg</u>	<u>6-20P3</u> Org. Number	<u>July 24, 2007</u> Date
APPROVAL:	<u>G. Hostbjoer for JW Peterson</u>	<u>6-20P0</u> Org. Number	<u>July 23, 2007</u> Date
DOCUMENT RELEASE:	<u>Ngoc H. Bui</u>	<u>G-8310</u>	<u>July 24, 2007</u>

Org. Number      Date

---

## Revision Record

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**Revision Letter****E****Changes in this Revision**

Revised the Appendix D Similarity Guidelines, Appendix E Certification Test Configuration Guidelines, Appendix C Example and Glossary to reflect the flammability methods of compliance per D6-83466 Rev New.

Corrected typographical and grammatical errors, updated document to reflect the language and processes of an FAA Delegation Option Authorization (DOA) holder, updated 14CFR 25 references, standardized phrases of fire certification, added Supplier option to specify DMIR/DAR for conformity inspections; clarified definitions.

**Signatures**

AUTHOR:	<u>Barbara L. Haynes</u>	<u>6-20P3</u> Org. Number	<u>August 16, 2007</u> Date
APPROVAL:	<u>JW Peterson</u>	<u>6-20P0</u> Org. Number	<u>August 17, 2007</u> Date
DOCUMENT RELEASE:	<u>Ngoc Bui</u>	<u>G-8310</u> Org. Number	<u>August 20, 2007</u> Date

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# Revision Record

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**Revision Letter**  
**Changes in this Revision**

**F**

General Document Requirements: added requirement for references to include certification basis, design data, and test methods as reflected in Appendix A

Test Plan Preparation: added requirement for test specimen summary

Statement of Similarity: added requirement for reference to Boeing-approved report for similar part

Glossary: added definitions of surfacing materials and edge treatment

Appendix B: added items to Test Plan Information regarding previously approved data; deleted requirement in Test Plan Information for blank data pages supporting each item to be tested

Appendix C (Example Fire Property Test Plan/Report): deleted example of fire property test plan and test report; left intentionally blank

Appendix D (Similarity Guidelines): incorporated FAA-approved flammability MOCs from D6-83466 Rev B and clarifying guidance.

Appendix E (Certification Test Configuration Guidelines): deleted insignificant bonding, kickstrips and rubstrips, and unvented LCD monitors as these items are addressed in Appendix D; added items for color-specific materials and hook and loop fasteners.

Added editorial clarifications to all sections and corrected typographical errors.

## Signatures

AUTHOR:	<u>Barbara L. Haynes</u>	<u>6-20P3</u> Org. Number	<u>September 28, 2008</u> Date
APPROVAL:	<u>JW Peterson</u>	<u>6-20P0</u> Org. Number	<u>October 3, 2008</u> Date
DOCUMENT RELEASE:	<u>Ngoc H. Bui</u>	<u>G-823A</u> Org. Number	<u>October 6, 2008</u> Date

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## Revision Record

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**Revision Letter**  
**Changes in this**  
**Revision**

**G**

Correct the export compliance statement on the title page.

**Signatures**

AUTHOR:	<u>Barbara L. Haynes</u>	<u>6-20P3</u> Org. Number	<u>October 14, 2008</u> Date
APPROVAL:	<u>JW Peterson</u>	<u>6-20P0</u> Org. Number	<u>October 14, 2008</u> Date
DOCUMENT RELEASE:	<u>Ngoc H. Bui</u>	<u>G-823A</u> Org. Number	<u>October 14, 2008</u> Date

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**Revision Letter**  
**Changes in this**  
**Revision**

**H**

Updated document format.

Complete revision. This revision clarifies existing requirements for supplier submittals of flammability documents. This revision also incorporates change-based certification for simple change(s) to a previously Boeing-certified design. This method allows the supplier to submit a condensed document that substantiates the change feature(s) and references the previously approved substantiation.

Incorporated ADNRN 1G.

**Signatures**

AUTHOR:	<u>Heather C. Allen-Lilly</u>	<u>66-ZB-7008</u> Org. Number	<u>January 28, 2010</u> Date
APPROVAL:	<u>JW Peterson</u>	<u>66-ZB-7003</u> Org. Number	<u>January 27, 2010</u> Date
APPROVAL:	<u>D. Freeman</u>	<u>66-ZB-7003</u> Org. Number	<u>January 27, 2010</u> Date
DOCUMENT RELEASE:	<u>Scott B. Pace</u>	<u>9M-ST-EUB0</u> Org. Number	<u>January 29, 2010</u> Date

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**Revision Letter**  
**Changes in this Revision**

**J**

Revised the document to provide additional clarification of the content and to eliminate general inaccuracies.

Removed the "description of change" document requirements previously listed in Rev H, sections 2.1, 3.2, 4.2, and Appendix A.

Added a new section 4.1.5 that includes the requirements for test plans and reports for parts located below the passenger floor.

Added an example of a conformity table in Appendix C.

Section 4.3.1: Updated the FAA conformity and test witnessing section to reflect FAA & BDCO requirements.

Glossary: 1) Added definitions related to BDCO terminology. 2) added an "Acronyms and Abbreviations" table.

Incorporated FAA-approved flammability MOCs from D6-83466 into Appendix D as follows: added MOC 3.2 (core thickness options), revised MOC 3.33 (interior panels) per ADNR 4C, and added 3.45 (testing seats w/fabrics) per ADNR 3C.

Transferred Document Ownership: The ownership of this document has been transferred from the Boeing Research and Technology (BR&T) organization to the BCA Flammability organization.

**Signatures**

AUTHOR:	<u>Elana Shippen</u>	<u>66-ZB-7007</u> Org. Number	<u>September 3, 2010</u> Date
REVIEW	<u>Ken Young</u>	<u>66-ZB-7008</u> Org. Number	<u>September 3, 2010</u> Date
APPROVAL:	<u>Roger Lawrence</u>	<u>66-ZB-7003</u> Org. Number	<u>September 3, 2010</u> Date
DOCUMENT RELEASE:	<u>Scott B Pace</u>	<u>9M-ST-EUB0</u> Org. Number	<u>September 8, 2010</u> Date

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**Revision Letter**  
**Changes in this**  
**Revision**

**K**

Revised section 3.2.2, Item 2 (Simple Change with No Testing Required) to fix a typo, which could result in misunderstanding the requirements. Replaced "Item 2" with "Item1" in this section to correct the typo.

**Signatures**

AUTHOR:	<u>Elana Shippen</u>	<u>66-ZB-7007</u> Org. Number	<u>September 28, 2010</u> Date
REVIEW	<u>Ken Young</u>	<u>66-ZB-7008</u> Org. Number	<u>September 28, 2010</u> Date
APPROVAL:	<u>Roger Lawrence</u>	<u>66-ZB-7003</u> Org. Number	<u>September 28, 2010</u> Date
DOCUMENT RELEASE:	<u>Scott B Pace</u>	<u>9M-ST-EUB0</u> Org. Number	<u>September 29, 2010</u> Date



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**Revision Letter**  
**Changes in this**  
**Revision**

**L**

This document has been completely re-written and re-organized to clarify requirements. This includes addition of process flow charts, templates, examples and more illustrations.

This newly revised document is now referred to as “the Main Document”, see Figure 1 in section 3).

This new main document is to be used in conjunction with new sub-documents D6-49936-1 through D6-49936-9 as applicable (refer to section 3 of this document for details).

**Signatures**

AUTHOR:	<u>Elana Shippen</u>	<u>66-CB-7007</u> Org. Number	<u>June 10, 2011</u> Date
REVIEW:	<u>Ken Young</u>	<u>66-CB-7008</u> Org. Number	<u>June 10, 2011</u> Date
APPROVAL:	<u>Roger Lawrence</u>	<u>66-CB-7003</u> Org. Number	<u>June 10, 2011</u> Date
DOCUMENT RELEASE:	<u>Rebecca A. Byers</u>	<u>9M-ST-EUB0</u> Org. Number	<u>June 10, 2011</u> Date

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**Revision Letter**  
**Changes in this**  
**Revision**

**M**

Incorporated ADRN 1L.

Deleted abbreviations that were not referenced in the document, Cleaned up minor typos and errors, clarified wording/definitions when necessary, Corrected examples in Table B-1 and B-2.

Added new wording regarding supplier responsibility to show that the type design is compliant to all applicable requirements.

Clarified sections 4.2.4 (conformity inspection personnel and facilities) and 4.2.5 (test witnessing personnel and facilities).

**Signatures**

AUTHOR:	Elana Shippen	66-CB-7007	December 5, 2011
		Org. Number	Date
REVIEW:	Ken Young	66-CB-7008	December 5, 2011
		Org. Number	Date
APPROVAL:	Roger Lawrence	66-CB-7003	December 5, 2011
		Org. Number	Date
DOCUMENT RELEASE:	Rebecca A. Byers	9M-ST-EUB0	December 5, 2011
		Org. Number	Date

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**Revision Letter**  
**Changes in this**  
**Revision**

**N**

Incorporated ADRN 1M.  
Revised the Definitions section.  
Added reference 9 (FAA Final Policy No. PS-ANM-25.853.1, Flammability Testing of Interior Materials, dated August 16, 2012, where applicable throughout the document.  
Revised sections 4.2.2, 4.3.2, 4.3.3, and Appendix A.5

**Signatures**

AUTHOR:	<u>Elana Shippen</u>	<u>66-CB-7007</u> Org. Number	<u>April 15, 2013</u> Date
REVIEW:	<u>Michael Jensen</u>	<u>66-CB-7008</u> Org. Number	<u>April 15, 2013</u> Date
APPROVAL:	<u>Todd Child</u>	<u>66-CB-7003</u> Org. Number	<u>April 15, 2013</u> Date
DOCUMENT RELEASE:	<u>Scott B. Pace</u>	<u>9M-ST-EUB0</u> Org. Number	<u>April 15, 2013</u> Date