

1 SCOPE

- a. This specification covers the requirements for polyester resin compounds for surface filling of interior sandwich panels and laminates.
- b. This specification requires Qualified Products.

2 CLASSIFICATION

2.1 TYPES

Types are based on coloring of surface filler:

- | | | |
|---------|---|--|
| Type I | – | Obsolete – Use Type II |
| Type II | – | Two part system–resin base and hardener. |

2.2 CLASS

- | | | |
|---------|---|--------------------------|
| Class 1 | – | Flow: 1.0 inches maximum |
| Class 2 | – | Flow: 0.2 inches maximum |

3 REFERENCES

The issue of the following references in effect on the date of invitation for bid shall form a part of this specification to the extent herein indicated.

- | | | |
|-------------|---|--|
| ASTM D792 | – | Standard Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement |
| BAC5010 | – | Application of Adhesives |
| BAC5319 | – | Application of Decorative Surfaces to Interior Panels |
| BAC5564 | – | Fabrication of Crushed Core Sandwich Panels |
| BAC5565 | – | Manufacture of Glass/Phenolic Laminates and Sandwich Panels Using 260F Cure |
| BAC5596 | – | Engineering Requirements for Positive Pressure Lamination of Interior Decorative Laminates |
| BAC5755 | – | Application of Interior Decorative Finishes |
| BSS7230 | – | Flammability Properties of Aircraft Materials, Determination of |
| BSS7238 | – | Smoke Generation by Materials on Combustion, Test Method for |
| BSS7239 | – | Test Method for Toxic Gas Generation by Materials on Combustion |
| BSS7304 | – | Determination of Surface Flammability of Materials Using a Radiant Energy Heat Source |
| BSS7322 | – | Ohio State University Colorimeter Heat Release, Determination of |
| MIL–STD–401 | – | Sandwich Construction and Core Materials, General Test Methods |

SURFACE FILLERS FOR INTERIOR
APPLICATIONS

BOEING MATERIAL SPECIFICATION

BMS

5–136A

PAGE 1 OF 19

4 DEFINITIONS

Batch – A homogeneous quantity of filler manufactured under controlled conditions at one time.

5 MATERIAL REQUIREMENTS

5.1 BLENDING

Vendors shall supply blending information with the qualification samples of two-component materials. The mixing ratio of Parts A (resin base) and B (hardener) shall be expressed as the number of parts, by weight, of component B required to be mixed with 100 parts of component A. Parts A and B shall blend readily with one minute of hand mixing to produce a uniform product.

5.2 APPEARANCE

5.2.1 UNIFORMITY

Each component of the compound shall be a uniform homogeneous material and shall be free from foreign material, lumps, and coarse particles.

5.2.2 COLOR

Type II – The color of Part A (resin base) shall contrast with Part B (hardener) to aid in mixing to provide a uniform product.

5.3 STABILITY

Type I and II component parts shall be stable at 40 to 80F for a minimum of 6 months. The stability or storage life for each Type shall be determined from the date of receipt at the purchaser's facility. The fillers shall not settle severely or separate from the resin and shall not cake or crystallize in a manner that will prohibit further use of the material.

5.4 PROPERTIES

- a. The products shall conform to the applicable requirements in Table I when tested in accordance with Section 8 of this specification. A minimum of three specimens shall be tested in each case unless otherwise specified.

5.4

PROPERTIES (Continued)

TABLE I SURFACE FILLER PROPERTIES

PROPERTY	REQUIREMENT		TEST METHOD OR SECTION
	CLASS 1	CLASS 2	
Spreadability a. Thin Layer b. Feather Edge	Acceptable Acceptable		8.5.1a 8.5.2a
Sandability a. Thin Layer b. Feather Edge	Acceptable Acceptable		8.5.1b 8.5.2b
Gel Time, minutes, minimum	4		8.6
Sanding Time, minutes, maximum	3		8.7
Flow, inches, maximum	1.0	0.2	8.8
Specific Gravity, max	1.4		ASTM D792
Adhesion (Decorative Laminates) a. Unaged, psi, minimum b. Aged at 160F, psi, minimum c. Aged at 100 percent R.H., psi, minimum	100 100 100		8.9
Flammability a. 60 second vertical (1) 0.020 inch layer (2) 0.125 inch layer b. 30 second, 45 degree (1) 0.020 inch layer (2) 0.125 inch layer	Avg. self-extinguish time: 15 seconds max. Avg. burn length: 4 inches max. Avg. drip extinguish time: No drips Avg. self-extinguish time: 5 seconds max. Avg. afterglow: 0 seconds max. Flame penetration: None		8.10
Heat Resistance	Acceptable		8.11
Compatibility <u>1/</u>	Same as standard adhesion and 60 second flammability above		8.12

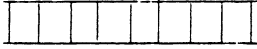
1/ With materials from other suppliers on the QPL.

- b. For qualification of materials after initial release of this specification, candidate materials shall demonstrate equivalency to the material originally qualified to this specification when tested in accordance with BSS7238, BSS7239 (both test methods using the flaming mode at 2.5 watts/sq cm), and BSS7304. Specimens shall be prepared from panels fabricated in accordance with Section 8.4 and covered with filler material to a thickness of 0.020 inch in accordance with Section 8.2.

5.5

HEAT RELEASE

For qualification purposes, candidate materials shall demonstrate equivalency to other Qualified Sources when tested in accordance with BSS7322. Test specimens shall be prepared from panels described in Figures 1 through 6.

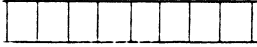
-----	BMS 8-222, Type I, Class 181
-----	BMS 8-222, Type I, Class 181
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.50 inch thick
-----	BMS 8-222, Type I, Class 181
-----	BMS 8-222, Type I, Class 181
- - - - -	BMS 5-127, Type II, Class 2
-----	BMS 8-98, Type III, Class 2, Grade A
-----	BMS 8-254, Type III
-----	BMS 8-98, Type III, Class 2, Grade A

Base panel shall be fabricated in accordance with BAC 5564, Method A. Crush panels to 0.50 inch.

Decorative laminate shall be fabricated in accordance with BAC 5596, Type IV without ink.

Decorative laminate shall be applied to base panel in accordance with BAC 5319, Method II.

Figure 1 OSU PANEL NO. 1

-----	BMS 8-222, Type I, Class 181
-----	BMS 8-222, Type I, Class 181
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.50 inch thick
-----	BMS 8-222, Type I, Class 181
-----	BMS 8-222, Type I, Class 181
.....	BMS 5-136, 5 mils
- - - - -	BMS 5-127, Type II, Class 2
-----	BMS 8-98, Type III, Class 2, Grade A
-----	BMS 8-254, Type III
-----	BMS 8-98, Type III, Class 2, Grade A

Base panel shall be fabricated in accordance with BAC 5564, Method A. Crush panels to 0.50 inch.

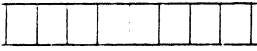
Decorative laminate shall be fabricated in accordance with BAC 5596, Type IV without ink.

Decorative laminate shall be applied to base panel in accordance with BAC 5319, Method II.

Figure 2 OSU PANEL NO. 2

5.5

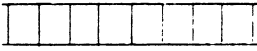
HEAT RELEASE (Continued)

_____	BMS 8-226, Type I, Class 2
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type II, Class 2
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.25 inch thick
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type I, Class 2
- - - - -	BMS 10-83

Base panel shall be fabricated in accordance with BAC 5565.

BMS 10-83 shall be applied in accordance with BAC 5755.

Figure 3 OSU PANEL NO. 3

_____	BMS 8-226, Type I, Class 2
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type II, Class 2
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.25 inch thick
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type II, Class 2
_____	BMS 8-226, Type I, Class 2
.....	BMS 5-136, 10 mils
- - - - -	BMS 10-83

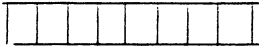
Base panel shall be fabricated in accordance with BAC 5565.

BMS 10-83 shall be applied in accordance with BAC 5755.

Figure 4 OSU PANEL NO. 4

5.5

HEAT RELEASE (Continued)

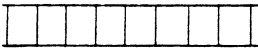
_____	BMS 8-226, Type I, Class 1
_____	BMS 8-226, Type II, Class 1
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.95 inch thick
_____	BMS 8-226, Type II, Class 1
_____	BMS 8-226, Type I, Class 1
- - - - -	BMS 5-126, Type II, Class 1
_____	BMS 8-143, Type 181, Class 1
_____	BMS 8-98, Type III, Class 1, Grade A
_____	BMS 8-98, Type IIA, Class 1, Grade A

Base panel shall be fabricated in accordance with BAC 5565.

Decorative laminate shall be fabricated in accordance with BAC 5596, Type II.

Decorative laminate shall be applied to base panel in accordance with BAC 5319, Method IV.

Figure 5 OSU PANEL NO. 5

_____	BMS 8-226, Type I, Class 1
_____	BMS 8-226, Type II, Class 1
	BMS 8-124, Type V, Class IV, Grade 3.0, 0.95 inch thick
_____	BMS 8-226, Type II, Class 1
_____	BMS 8-226, Type I, Class 1
- - - - -	BMS 5-136, 16 mils
.....	BMS 5-126, Type II, Class 1
_____	BMS 8-143, Type 181, Class 1
_____	BMS 8-98, Type III, Class 1, Grade A
_____	BMS 8-98, Type IIA, Class 1, Grade A

Base panel shall be fabricated in accordance with BAC 5565.

Decorative laminate shall be fabricated in accordance with BAC 5596, Type II.

Decorative laminate shall be applied to base panel in accordance with BAC 5319, Method IV.

Figure 6 OSU PANEL NO. 6

6

QUALIFICATION

- a. All requests for qualification shall be directed to a Materiel Department of The Boeing Company. Materiel will forward the request to the appropriate Engineering Department for evaluation. After receiving written authorization from Materiel, the manufacturer shall submit the data and samples required for qualification purposes.
The qualification sample shall consist of five 1 gallon production samples for each specific Class and color for which qualification is sought.
- b. The qualification samples submitted for approval shall be accompanied by a test report in duplicate including actual test data which shows that the samples supplied meet the requirements of this specification. All suppliers shall either have test facilities required to test in accordance with this specification, or shall utilize the services of a commercial laboratory to accomplish such tests. The adequacy of test facilities may be verified, as deemed necessary, by representatives of The Boeing Company by a survey of such facilities.
- c. Qualification testing at The Boeing Company shall consist of a demonstration of the conformance of the samples supplied to all the requirements of this specification and a report from Manufacturing indicating acceptance or rejection of the material with respect to its in-process handling characteristics. If the material is rejected for handling, Manufacturing shall note specific reasons for rejecting the material.
- d. No changes in approved product formulation, critical raw materials, basic methods of manufacture or plant site shall be made without notification and prior approval in writing. Requalification of the revised material may be required and a revised supplier designation may be requested. Qualified Products will be listed in the QPL.
- e. Production materials shall be capable of meeting all qualification requirements.

7.

QUALITY CONTROL

7.1

SUPPLIER QUALITY CONTROL

Suppliers shall furnish and keep on file actual test data showing conformance with Section 5, Table I, for gel time, flow, and specific gravity and the flammability requirements in Section 5.5 for each batch of each shipment of material, and shall identify such data with the specification revision letter in effect.

7.2

PURCHASER QUALITY CONTROL

- a. Purchaser Quality Control shall review all supplier test data submitted with shipment and perform any additional inspection or testing necessary to assure that the production material meets all the requirements specified herein.
- b. Purchaser Quality Control shall perform the gel time, flow, and flammability tests of Table I on each batch of each shipment.
- c. When consistent conformance to specification acceptance (receiving) requirements has been demonstrated, Purchaser Quality Control may implement reduced testing in accordance with a suitable sampling plan. Authorization of a reduced testing plan shall be on a Boeing Company basis and shall be documented on Boeing Company documentation (e.g., Receiving Inspection Plan, Block memo, etc.).

8 MATERIAL TEST METHODS

8.1 WEIGHING AND MIXING OF FILLER MATERIALS

- a. Materials from which specimens are to be made shall be blended in accordance with the manufacturer's instructions (Section 5.1).
- b. Weigh the required amount for all specimens and add 10 percent excess of resin (Part A). Add hardener (Part B) in the same ratio as recommended by the manufacturer. Carefully mix the materials one minute \pm 10 seconds at $72 \pm 2F$ or until the mixture is homogeneous. Calculate the total amount required from:

$$M = 16.4 (S.G.) (L \times W \times T)$$

where:

M	–	Required amount of filler, in grams
L,W,T	–	Length, width and thickness of filler layer, in inches
S.G.	–	Specific gravity (ASTM D792)

8.2 APPLICATION OF FILLER LAYER TO TEST PANEL

- a. Secure test panel to a flat, smooth surface with double-back tape with desired test face up. Prepare surface for bonding by sanding with 100 grit sandpaper **FL 1** to remove gloss.
- b. Secure two shims of the required length and thickness to the surface of the panel, separated by the desired width of the filler layer. Use a removable adhesive such as masking tape. The width of the shims should be approximately 0.5 inch.
- c. Calculate, weigh out and mix the required amounts of Parts A and B in accordance with Section 8.1.
- d. Spread the material between the shims. Use a piece of sheet stock approximately 3 inches wide and longer than the distance between shims, with a straight, smooth edge in the long dimension, to sweep the material into a smooth, even layer of the same thickness as the shims. To obtain a smooth surface, spreading must be completed before material begins to stiffen.
- e. Allow material to harden before removing shims. Be careful not to break material off of panel when removing shims. Shims may be coated with a parting agent to aid in removal.

FL 1 Norton Garnet finishing paper or equivalent.

8.3

FABRICATION OF FIBERGLASS SANDWICH TEST PANELS

a. Fiberglass sandwich panels are to be used as the substrate for the following tests:

- (1) Spreadability (Section 8.5)
- (2) Adhesion (Section 8.9)
- (3) Flammability (Section 8.10)
- (4) Heat Resistance (Section 8.11)

In all cases, filler shall be applied to tool side of panel.

b. Lay up sandwich panel to the construction shown in Figure 7

c. Cure the test panel for a minimum of 1 hour at 250 to 275F under a minimum vacuum of 20 inches of mercury. One layer of release film **FL 1** and bleeder **FL 2** shall be placed over the bag face of the test panel. The release film and bleeder shall be in direct contact with the vacuum line.

FL 1 100SG30TR Tedlar release film pricked on 3/8 inch centers, or equivalent

FL 2 Osnaburg cloth (unbleached), CCC-C-429 or equivalent

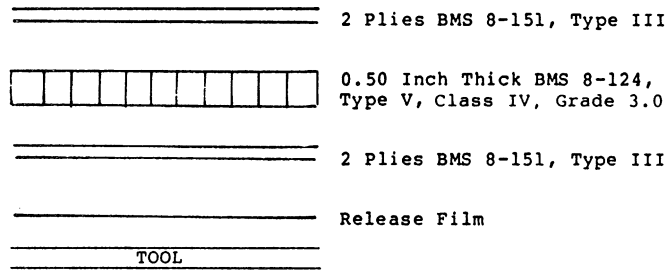


Figure 7 SANDWICH PANEL CONSTRUCTION

8.4

FABRICATION OF CRUSHED CORE TEST PANELS

- a. Crushed core sandwich panels are to be used as the substrate for qualifying new materials (Section 5.4b).
- b. Fabricate sandwich panel according to the construction shown in Figure 8.

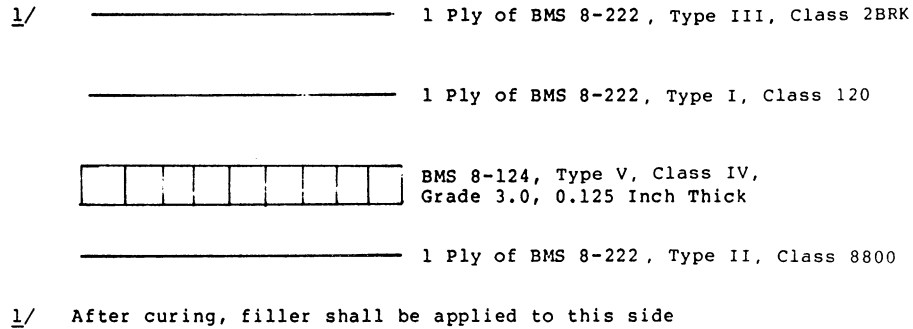


Figure 8 CRUSHED CORE PANEL CONSTRUCTION

- c. Use a metal picture frame or spacers 0.080 ± 0.003 inch thick to control panel thickness. Place the layup between two 0.125 inch thick preheated sheet stock caul plates with the 8800 prepreg side down. (Preheat caul plates to 320 ± 10 F and maintain above 200F while performing the placing operation). Immediately place the plate assembly in a press preheated to 320 ± 10 F. Apply sufficient pressure to bottom the press platens onto the frame or spacers (approximately 300 psi), crushing the layup to 0.080 inch nominal thickness. Cure at 320 ± 10 F for $7 \pm 1/4$ minutes. Release pressure and immediately remove the assembly from the press and disassemble panel from plates and frame.

8.5 THIN LAYER SPREADABILITY AND SANDABILITY

8.5.1 THIN LAYER

a. Spreadability

All material shall demonstrate acceptable spreadability when applied in layers of various thicknesses to sandwich panels for tests listed in Section 8.3a. Spreadability shall be deemed acceptable if the material can be spread into a smooth, even layer relatively free from pits, tears and crumbling. In no case shall such deformations penetrate the entire thickness of the layer. If after several attempts to sweep the material smooth, such irregularities are still present over more than one fourth of the panel surface and/or penetrate the entire layer (for layers of 0.020 inch or less) or have heights or depths greater than 0.020 inch (for thicker layers), then the thin layer spreadability shall be reported as unacceptable. All attempts to sweep the surface smooth shall be completed before the material begins to stiffen and gel.

b. Sandability

Thin Layer Sandability is determined in the course of the Sanding Time test (Section 8.7), and shall be deemed acceptable if a Sanding Time as defined in Table I is reported for the material.

8.5.2 FEATHER EDGE

a. Spreadability

- (1) Mix approximately 50 grams total of parts A and B in accordance with Section 8.1.
- (2) Immediately place three masses of approximately 15 grams each on the tool side of a sandwich panel approximately 8 x 10 inches fabricated in accordance with Section 8.3.
- (3) With a putty knife having a blade width of 1.5 ± 0.5 inches, spread each mass into a band of material the width of the blade and approximately 6 inches long, gradually tapering from an initial thickness of 0.02 to 0.06 inch down to a feather edge (essentially zero thickness). Use a single sweep of the blade for each mass of material.
- (4) Feather Edge spreadability shall be deemed acceptable if the material spreads smoothly down to zero thickness without breaking, tearing, or peeling away from the substrate.

b. Sandability

Allow material to harden until the material can be sanded using moderate pressure to produce fine filler powder without crumbling, cracking, balling or deforming the material and, additionally, without excessive clogging of the sandpaper. Sand the feather edge of the material with 100 grit sandpaper
FL 1. Feather Edge Sandability shall be deemed acceptable if material can be sanded without breaking off in pieces from the substrate.

FL 1 Norton Garnet Finishing Paper or equivalent.

8.6

GEL TIME

- a. Weigh out and mix 50 grams total of parts A and B in an 8 ounce paper cup, in accordance with Section 8.1. Begin timing when mixing is started.
- b. Scrape all material into a single mass at the bottom of the cup. Let stand at $72 \pm 2F$. Probe the material every 15 to 30 seconds.
- c. The gel time shall be reported as time elapsed from start of mixing to the initial formation of a nonfluid mass. Report to nearest 1/2 minute.

8.7

SANDING TIME

- a. Secure a flat 12 x 20 x 0.25 inch aluminum plate to a table using 3 inch wide double-back masking tape with desired test face up. Prepare surface for bonding by sanding with 100 grit sandpaper **FL 1** to remove gloss.
- b. Secure two shims, 0.5 inch wide by 0.010 inch thick, to the surface of the plate as shown in Figure 9 to form an area of 6 x 12 inches.
- c. Calculate, weigh out and mix the required amounts of Parts A and B, in accordance with Section 8.1.
- d. Spread the material between the shims. Use a 6 x 8 x 0.080 inch spreader bar (a piece of sheet stock with rounded tapered edges) to sweep the material into a smooth, even layer of the same thickness as the shims. To obtain a smooth surface, spreading shall be completed before material begins to stiffen.
- e. Cure for 25 minutes at room temperature. Remove the masking tape and shims.
- f. Using an air powered vibrating sander having at least a 3.5 x 6.5 inch pad base, sand the filler with 80 grit sandpaper **FL 1**. Hold the sander flat against the filler and move in a uniform back and forth motion along the length of the specimen. Apply the necessary downward hand pressure on the sander to achieve uniform sanding with no jumping or skipping. Continue sanding to remove at least 90 percent of the filler material with predominately aluminum showing.
- g. Report time required to remove the filler film, number of sandpaper changes required and sandpaper loading if encountered.

FL 1 Norton Nofile Adolox A259 (Aluminum Oxide) or equivalent.

8.7

SANDING TIME (Continued)

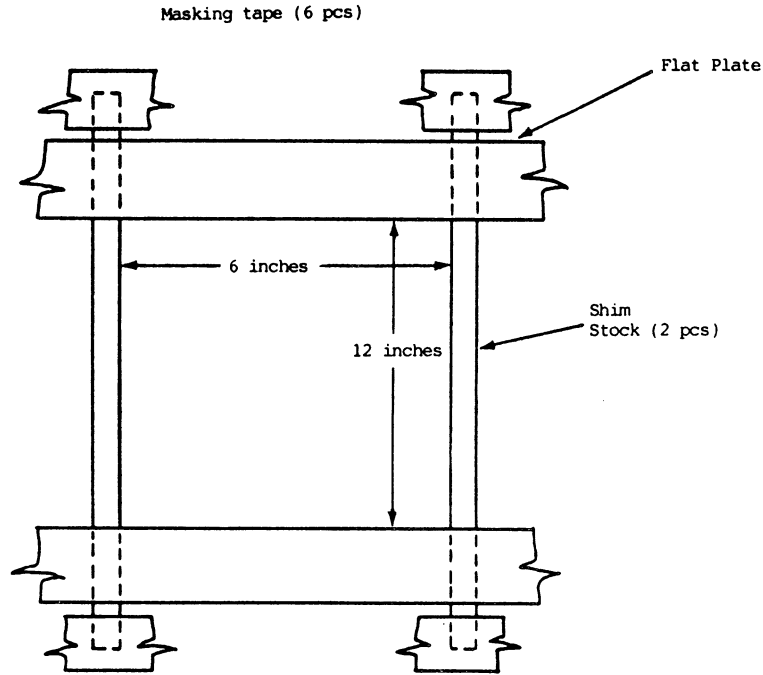


Figure 9 SANDING TIME SPECIMEN

8.8

FLOW

- Mix a total of 50 grams of Part A and Part B in accordance with Section 8.1. Complete filling operation in accordance with Section 8.8 within 2 minutes after mixing is started.
- With the test fixture in a horizontal position, insert the mixed compound so that the recess is filled flush with the surface of the fixture (see Figure 10).
- At a time of 2 minutes \pm 10 seconds after mixing was started, place the fixture in a vertical position and push out the compound with a plunger. The fixture shall remain in this position at $72 \pm 2F$, for 5 minutes longer than the gel time as determined in Section 8.6.
- At the end of the period, measure the maximum movement, in inches, of the compound from the lip of the recess to the final position. If the lowest point is not in contact with the surface of the fixture, the horizontal projection of the lowest point, onto the plane of the fixture, shall be measured. The test fixture may be coated with a parting agent to aid in removal of the cured compound.

NOTE: Material may exhibit a tendency to slide down the surface of the plunger, giving flow values that are improperly high. This can be avoided by covering the plunger surface with a single layer of masking tape to give a more grippable surface. The tape should be carefully and smoothly trimmed around the edge to allow the plunger to slide in and out freely. Replace tape for each test.

8.8

FLOW (Continued)

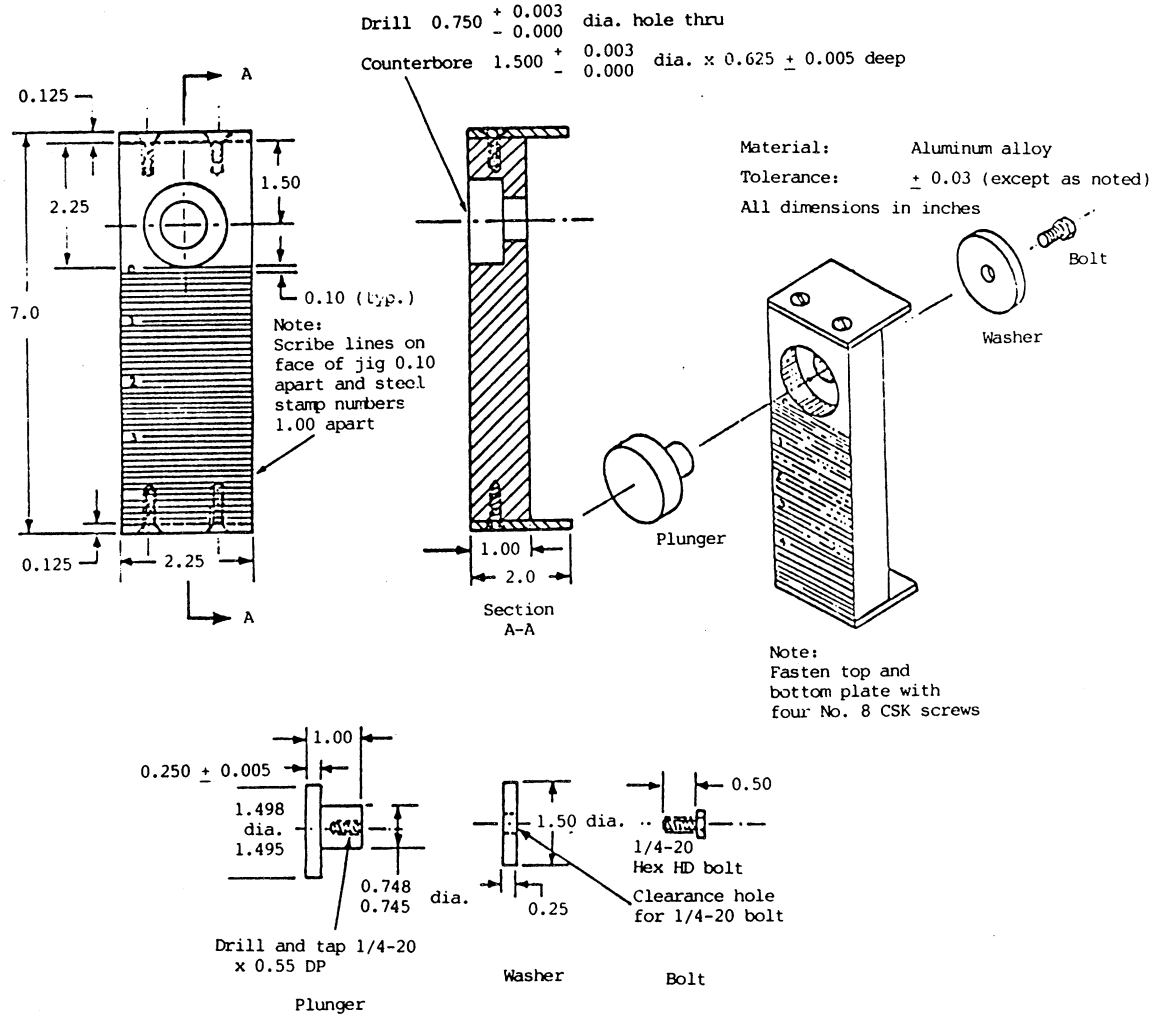


Figure 10 FLOW TEST JIG

8.9 ADHESION

8.9.1 DECORATIVE LAMINATE/FILLER/SUBSTRATE ADHESION

- a. Preparation of Specimens
- b. Use a sandwich panel fabricated in accordance with Section 8.3, at least 12 x 12 inches.
 - (1) Apply a layer of filler 0.020 inch thick, in accordance with Section 8.2. Allow to harden 60 ± 5 minutes.
 - (2) Lightly sand filler surface and apply a second layer of filler, 0.020 inch thick, over the first layer in accordance with Section 8.2. Allow to harden at least 2 hours.
- c. Bonding of Decorative Laminate
 - (1) Sand the filler to a smooth, flat surface. Use 320 grit sandpaper or finer for final sanding.
 - (2) Clean surface with a lint free cloth dampened slightly with MEK. Allow to dry.
 - (3) Apply BMS5-127, Type II, Class 2 adhesive in accordance with BAC5010, Type 92. Use spray or brush method of applications; apply coating of 3 to 4 grams per square foot. Complete Sections 8.9.1c.(4), (5) and (6) before adhesive becomes tack free.
 - (4) Lay decorative laminate (BAC5596, Type II, to be supplied by The Boeing Company) textured face down on caul plate. Lay panel adhesive side down on top of laminate.
 - (5) Cover with vacuum bag material and seal to the tool surface beyond the vacuum ports.
 - (6) Apply vacuum to a minimum of 20 inches of mercury.
 - (7) Cure for a minimum of 12 hours at room temperature.
 - (8) After initial curing, release vacuum and remove part. Allow to continue curing at room temperature a minimum of 7 days prior to testing.

8.9.1 DECORATIVE LAMINATE/FILLER/SUBSTRATE ADHESION (Continued)

d. Testing

- (1) If specimens are not tested within 8 hours of preparation dry for 4.5 hours at 120F. Seal specimens in a plastic bag ready for testing.
- (2) Determine the flatwise tensile strength in accordance with MIL-STD-401. Specimen size shall be 2 x 2 inches. Test a minimum of five specimens. Report individual and average test results, and location of failure. Test the following:
 - (a) Unaged (five specimens minimum).
 - (b) Age a minimum of 7 days at $160 \pm 5F$ and test at $160 + 5F$ after removal from conditioning chamber (five specimens minimum).
- (3) If a sample fails to meet the minimum individual requirement of Section 5.4, Table I for Adhesion, and if failure occurs in the bond between sample and test block, or the bond between a face skin and the honeycomb core, or within the honeycomb core, do not include the strength determined in the results, and substitute another sample. A minimum of 5 valid tests shall be reported.

8.10 FLAMMABILITY

a. Preparation of Specimen

Use six 3 x 12 inch panels fabricated in accordance with Section 8.3.

b. Application of Filler

- (1) Apply a layer of filler 0.020 inch thick to three panels and a layer 0.125 inch thick to the other three panels in accordance with Section 8.2.
- (2) Allow the material to set in a ventilated hood for 16 to 24 hours. Cure at 200F for 2 hours.

c. Testing

Run 60 second vertical and 30 second, 45 degree flammability, (in accordance with BSS7230) on the tool side of specimens fabricated in accordance with Sections 8.10a and 8.10b.

8.11

HEAT RESISTANCE

- a. Use a sandwich panel fabricated in accordance with Section 8.3, at least 10 x 10 inches.
- b. Apply a layer of filler 1/8 inch thick in accordance with Section 8.2. Size of filler layer shall be at least 8 x 8 inches. Allow to harden a minimum of 24 hours. If panel is trimmed prior to heat testing, final size shall be at least 6 x 6 inches.
- c. Place the panel filler side up on a caul plate. Seal over the panel with vacuum bag material with a thermocouple inside the bag in contact with the filler face of the panel.
- d. Draw vacuum to a minimum of 20 inches of mercury.
- e. Heat panel to $300 + 20F/-0F$ as determined by thermocouple in contact with surface. Heatup time from room temperature shall be 10 minutes maximum.
- f. Maintain temperature of $300 + 20F/-0F$ for a minimum of 5 minutes.
- g. Cool panel to 150F or less before releasing vacuum and removing panel from bag.
- h. Examine panel and report Heat Resistance as acceptable or unacceptable. A filler is unacceptable if it exhibits cracks, blisters, debonding from panel, depressions, ripples, flow at edges, or other visible deformations not present prior to heating.

8.12 COMPATIBILITY

8.12.1 ADHESION

a. Preparation of Panel

Fabricate a panel no smaller than 6 x 8 inches in accordance with Section 8.3 and prepared in accordance with Section 8.12.1b. Cut a minimum of five 2 x 2 inch test specimens.

b. Application of Filler

(1) Apply a layer of filler 0.02 inch thick, in accordance with Section 8.2. Allow to harden at least one hour.

(2) Lightly sand filler surface.

(3) Apply a 0.02 inch thick layer of another filler which has already been qualified. Allow to harden for a minimum of 12 hours at room temperature.

c. Repeat Sections 8.12.1a and b for each of the fillers listed in the QPL.

d. Perform flatwise tensile test in accordance with MIL-STD-401.

8.12.2 FLAMMABILITY

a. Preparation of Panel

Fabricate a panel no smaller than 9 x 12.5 inches in accordance with Section 8.3. Cut a minimum of three 3 x 12 inch test specimens.

b. Application of Filler

Repeat Section 8.12.1b.

c. Perform Sections 8.12.2a. and b. for each of the fillers listed in the QPL.

d. Test in accordance with BSS7230 for 60 second vertical.

9 MATERIAL IDENTIFICATION

Each container of a component of BMS5-136 material shall be legibly and durably marked with the following information:

- a. BMS5-136 (including the latest revision letter), Type, Class, and color (for Type II materials), including BAC Color Number
- b. Supplier's name, his code identification number in accordance with Federal Cataloguing Handbook H 4-1, and his material designation
- c. Manufacturer's batch or lot number
- d. Blending proportions (not required for single component materials)
- e. Date of manufacture
- f. Purchase order number
- g. Quantity

10 PACKAGING AND MARKING

10.1 PACKAGING

- a. BMS5-136 material shall be furnished in one to three gallon kits unless otherwise specified.
- b. Each component of each kit shall be packaged in clean, airtight containers of a type that will not contaminate the contents.
- c. The exterior packaging shall be of such a nature as to assure safe delivery.

10.2 MARKING

When containers are shipped in a package, each package shall be durably and legibly marked with the following information:

- a. BMS5-136 (including the latest revision letter), Type, Class, and color (for Type II materials), including BAC Color Number
- b. Supplier's name and product designation
- c. Batch or lot number
- d. Purchase order number
- e. Quantity
- f. Recommended storage temperature