EQUIPMENT/FURNISHINGS - REPAIR

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to repair the aircraft interior components.

   B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
25-00-00-300-801-A	FILLING AND FAIRING PROCESS - REPAIR	ALL
25-00-00-300-802-A	DECORATIVE MATERIALS - REPAIR	ALL
25-00-00-300-804-A	EDGE FILL AND EDGE CAST PROCESSES - REPAIR	ALL
25-00-00-300-805-A	SEALING OF JOINTS - REPAIR	ALL
25-00-00-300-806-A	GENERAL BONDING AND SEALING - REPAIR	ALL
25-00-00-300-807-A	NUTPLATES AND RIVNUTS - REWORK	ALL
25-00-00-300-808-A	PAINTING AND PRIMING OF COMPOSITE MATERIAL PARTS	ALL
25-00-00-300-809-A	COMPOSITE MATERIAL - REPAIR	ALL
25-00-00-300-810-A	METAL - FACED LAMINATE REPAIRS	ALL
25-00-00-300-811-A	INSERT - REWORK	ALL
25-00-00-300-812-A	FINISHING SOLID-LAMINATE PARTS - REPAIR	ALL

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TASK 25-00-00-300-801-A
EFFECTIVITY: ALL

2. FILLING AND FAIRING PROCESS - REPAIR

A. General

(1) This task gives the filling and fairing procedures to repair the surfaces of parts and panels made from aluminum and composite material.

NOTE: These procedures are not applicable to the interior of the waste compartment installed in the forward and aft galleys, and in the lavatory. Also, they are not applicable to the baggage compartment linings and areas near the attachment points.

(2) The filling repair is a process to seal small cells or craters in the surface of a part and minor part voids caused by solvent evaporation during the manufacture process.

CAUTION: THIS TASK CONTAINS REPAIR PROCEDURES FOR CLASS 1 AND CLASS 2 DAMAGE.

(3) The filling and fairing process is applicable for these kind of class damages:

(a) Dents (class 1);

(b) Scratches (class 1);

(c) Resin erosion (class 1);

(d) Scars (class 1);

(e) Surface Abrasion (class 1) and;

(f) Punctures (class 2).

(4) To repair the surfaces of parts or panels for damage class 1, there is no limits size for each damage.

NOTE: The amount of the total damage acceptable is according tables 801 and 802.

(5) To repair the surfaces of parts or panels for damages (class 2), you must obey the conditions given below:

(a) Punctures in areas not visible in the cabin (non-decor side) the damage must not be larger than 38. cm ^{2} (6 in^2) or (3" x 2").

(b) Punctures in areas visible in the cabin (decor side) the damage must not be larger than or 25.8 cm ^{2} (4 in^2) or (2" x 2").

NOTE:
- The amount of the total damage acceptable is according tables 801 and 802, just the size of the puncture to repair is limited.
- In depth, the limit of the damage must be only one-surface penetration.

(6) For class 1 (delamination and/or erosion) or damage class 2 larger than specified, use the general composite repair procedures (AMM TASK 25-00-00-300-809-A/800).

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(7) To repair the surfaces of parts and panels, you can use the filler compounds listed below:

(a) polyester-base - used on décor or non-décor surfaces;

(b) epoxy-base - used on décor or non-décor surfaces, and;

(c) silicone-base - used only on non-décor surfaces.

NOTE: • Repair on part or panel with non-décor surface is not required, but you can seal the voids to prevent core contamination from moisture.

• Decor surface is a panel or part that receives some decorative material.

(8) To repair the surfaces of parts or panels, you must obey the conditions given below (see Tables 801 and 802):

Table 801 - FILLING REPAIR - DAMAGE LIMITS

FILLING REPAIR (DAMAGE LIMITS)			
MATERIAL	DAMAGE ON DECOR SIDE	DAMAGE ON NON-DECOR SIDE	PANEL (DECOR OR NON DECOR) THAT WILL RE-CEIVE A FINISHING AFTER REPAIR
EPOXY	0.15 m^2 (244 in^2)	Not required	unlimited
POLYESTER	unlimited	Not required	unlimited
SILICON	Not applicable	unlimited	unlimited

Table 802 - FAIRING REPAIR - DAMAGE LIMITS

FAIRING REPAIR (DAMAGE LIMITS)			
MATERIAL	DAMAGE ON DECOR SIDE	DAMAGE ON NON-DECOR SIDE	PANEL (DECOR OR NON DECOR) THAT WILL RE-CEIVE A FINISHING AFTER REPAIR
EPOXY	103 cm^2 (16 in^2)	Not required	unlimited
POLYESTER	103 cm^2 (16 in^2)	Not required	unlimited
SILICON	Not applicable	unlimited	unlimited

(a) To prepare and restore panel (decor or non decor part) that receives a finishing material after repair, you can use unlimited the filling and/or fairing process with polyester-base, epoxy-base and silicone-base.

(b) For damages on non-décor surface, you can use unlimited the filling and/or fairing process with silicone-base.

(c) For damages on décor surface, you can use unlimited the filling repairs process with polyester-base filler compounds.

(d) The filling repairs process on a décor surface of the panel using epoxy-base filler compounds, the total damage area in the same construction (that is, in total sidewall

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panel, in total skirting panel, in total ceiling panel, in the bulkhead, in the windscreen, in total component of the wardrobe, in total component of the galley, etc.) can not be larger than 0.15 m^2 (244 in^2).

NOTE: This process is limited for décor surfaces that do not receive a finishing after repair.

(e) The fairing repairs procedures on a décor surface of the panel using polyester-base filler compounds, the total damage area in the same construction (that is, in total sidewall panel, in total skirting panel, in total ceiling panel, in the bulkhead, in the windscreen, in total component of the wardrobe, in total component of the galley, etc.) can not be larger than 103.0 cm^2 (16 in^2).

NOTE: This process is limited for décor surfaces that do not receive a finishing after repair.

(f) The fairing repairs procedures on a decor side of the panel using epoxy-base filler compounds, the total damage area in the same panel (that is, in total sidewall panel, in total skirting panel, in total ceiling panel, in the bulkhead, in the windscreen, in total component of the wardrobe, in total component of the galley, etc.) can not be larger than 103 cm^2 (16 in^2).

NOTE: This process is limited because the décor side do not receive a finishing after repair.

(g) For fairing process the measure warp or bow of the part must not exceed 0.063 mm (0.0025 in) per linear foot in either length or width.

(h) NOTE:
- The operator must control the total area of repair on each panel. Embraer suggests that you have a form where to control all repairs made on each panel. See an example of such a form in Table 803.
- The operator must control the total area of filling or fairing process repair used on each panel.

Table 803 - DAMAGE AREAS CONTROL

COMPO-NENTS	DAMAGE AREA	DATE OF REPAIR	IS THE PROCEDURE USED TO REPAIR DAMAGE UNLIMITED?	TOTAL DAMAGE AREA (FAIRING PROCESS)	REPAIR MATERIAL
Sidewall Panel (231 ALW)	38.7 cm^2 (6 in^2)	May/25/99	No	38.7 cm^2 (6 in^2)	POLYEST-ER
Sidewall Panel (231 ALW)	51.6 cm^2 (8 in^2)	Dec/12/99	Yes[1]	38.7 cm^2 (6 in^2)	SILICON
Sidewall Panel (231 ALW)	64.5 cm^2 (10 in^2)	Jul/01/00	No	103.0 cm^2 (16 in^2)	POLYEST-ER
Sidewall Panel (231 ALW)	3.2 cm^2 (0.5 in^2)	Jul/15/00	No	106.2 cm^2 (16.2 in^2)[2]	POLYEST-ER

[1] In the answer YES, the data is not input in the total amount.

[2] This repair is more than the allowable for polyester-base filler compounds (103.0 cm^2 (16 in^2)). Then, you must replace the panel.

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(i) If same panel (on a décor surface) had already repaired damages totaling (0.90 cm^2 (14 in^2)) using polyester-based filler, in next repair if it is a fairing repair, you can use:

- 0.13 cm^2 (2 in^2) of polyester-based filler or;
- 0.13 cm^2 (2 in^2) of epoxy-based filler.

(j) If same panel (on a décor surface) had already repaired damages totaling (0.90 cm^2 (14 in^2)) using polyester-based filler, in next repair, if it is a filling repair, you can use:

- unlimited for polyester-based filler or;
- 0.14 m^2 (230 in^2) of epoxy-based filler or.

(k) If the amount of damage is greater than specified, you must replace the part or panel.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-809-A/800	COMPOSITE MATERIAL - REPAIR

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper, 100-400 grit	To break surface gloss	AR
Commercially available	Sandpaper, 200-400 grit	To remove excess material	AR
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Shop Wipes	For cleaning	AR
Commercially available	Spatula	To apply fairing compound to the surface	1
Commercially available	Dust mask	To prevent skin irritations and excessive inhalation	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-680	Cleaning Solvent - Commercial grade	AR
Commercially available	Rhodiasolve E-23 - Commercial grade	AR

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(Continued)

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
Commercially available	Akemi No. 4, Faster Version	AR
Commercially available	Akemi No. 7, Standard Version	AR
Commercially available	Micro Ultra Filler No. 15-3	AR
Commercially available	Fire Retardant Reducer 15-3	AR
Commercially available	Scotchweld Brand DP-110	AR
Commercially available	Scotchweld Brand DP-190 Gray	AR
Commercially available	Vantico (Ciba-Geigy) Redux 252	AR
Commercially available	Ciba-Geigy Araldite 252	AR
Commercially available	Epibond 1568 A/B	AR
Commercially available	GE 100 series RTV Adhesives	AR
Commercially available	GE 200 series RTV Adhesives	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

I. Filling and Fairing Process (Figure 801) (Figure 802)

SUBTASK 340-002-A

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL SHOULD SPLASH INTO EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL AID. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN WORKING IN A CONFINED SPACE ON AREA.**

(1) Wipe panel with a shop wipe soaked with clean solvent, isopropyl alcohol or Rhodiasolve E - 23 to remove dirt, oil and debris.

NOTE:
- Part or panel will be considered clean when a clean, dry shop wipe can be swiped over the surface and show no indications of dirt, oil or debris.
- Do not touch the cleaned surfaces.

WARNING: WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES WHEN SANDING COMPOSITE MATERIALS.

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(2) Lightly sand the surface with 100-400 grit sandpaper to break surface gloss.

NOTE:
- Take care not to go through the first layer when you sand the area.
- Clean all visible surface. Do not use force to sand the surface of the part or panel. Sand only the resin on the surface.
- Do not sand the reinforcement material.

(3) Do the steps below to repair on the surface of the part or panel with polyester-base filler compound (Figure 801).

NOTE: Obey the manufacturer's instructions to mix quantities of the polyester-base filler compound.

(a) On a mixing tray, container or a cardboard palette, put some polyester-base filler compound (1). Use one of the types of Part-A polyester-base filler compound (1) listed in the Table 804.

NOTE: Akemi No. 4 and No. 7 have the same handling and filling characteristics. The difference between them is that the Akemi No. 4 has a faster cure time.

(b) Put some Part-B hardener (2) straight from the tube onto the palette. The Part-B hardener (2) is white and has the same consistency as toothpaste. Use the corresponding Part-B hardener (2) listed on the Table 804.

Table 804 - POLYESTER-BASE FILLER COMPOUND

PART-A POLYESTER COMPOUNDS	PART-B HARDENER
APF Akemi No. 4 Part-A	Akemi Part-B hardener
APF Akemi No. 7 Part-A	Akemi Part-B hardener
Adtech 15-3 Micro-ultra filler Part-A	Adtech 15-3 micro ultra filler Part-B

(c) Mix the putty with a large spatula or putty knife.

NOTE: Use the blade to make a path through the putty, lift this section, and fold it into the remaining filler on the palette.

(d) Continue the process until the putty has a uniform color and consistency.

(e) To make the filler thinner, use one of this kind of Thinner (3):

1 Adtech 15-3 reducer, if you used Adtech micro ultra filler Parts A and B.

NOTE: You can add thinner (3) depending on the desired consistency. The thinned mixture will fill the surface porosity completely and will reduce the time necessary to sand the part or panel.

(4) Do the steps below to repair the surfaces of parts and panels with an epoxy-base filler compound (Figure 802):

(a) You can use these epoxy compounds (1):

1 DP-110 or;

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2 DP-190 or;

3 Vantico (Ciba-Geigy) Redux 252 or;

4 Ciba-Geigy Araldite 252 or;

5 Epibond 1568 A/B.

NOTE: These components are to be used for field repair where rapid turn around is required.

(b) The epoxy-base filler compounds are provided with two components in side by side cylinders. A dispenser gun (2) is used with a baffled tube to mix the materials.

(5) To apply the fairing compounds (epoxy or polyester) on surfaces, do the steps below (Figure 801) (Figure 802):

(a) Mask the areas of the panel as necessary.

(b) Wet a spatula and slide fairing compound along the void on the surfaces of part or panel.

NOTE: Spread it as thinly as possible over the surface of the part or panel.

(c) Hold the spreader normal to the surface or slightly angled so that the material is splined into the panel.

NOTE: Excessive compound application only increases the time necessary to sand the part.

(d) Allow the fairing compound enough time to set before sanding. Obey the manufacturer's information about the cure time for each material.

(e) Do a visual check on the fairing compound for correct cure.

(f) Apply light pressure with a fingernail. The filler must be cured without a depression in the shape of a crescent.

WARNING:
- **SANDING OF COMPOSITE MATERIAL GIVES OFF A FINE DUST WHICH MAY CAUSE SKIN IRRITATIONS. EXCESSIVE INHALATION OF THIS DUST IS A POTENTIAL HEALTH HAZARD.**
- **WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES.**

(6) To sand and contour the filler (epoxy or polyester), do the steps below:

(a) Apply the filler and let it dry completely.

(b) Remove the excess material with 200-400 grit sandpaper.

NOTE:
- Use a light even stroke by hand or jitterbug sander.
- Remove only gray/white filler. Do not grind into the reinforcement layers of material.

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- If you restore loft or radius on a part with filler compound, do not apply it too thickly.
- Restore a corner or radius only if the fabric is evident in the corner. A part laid up or pressed correctly will have at least some fabric in the corners, but it is possible that it does not have enough resin fill.
- Use a radius gauge or similar tool when you restore a curved loft.
- Make sure that the part or panel was examined correctly from the start of the process.

(7) To seal a non-décor side to prevent core contamination from moisture, use one of the silicone-base filler compound listed below:

(a) GE 100 series RTV Adhesives - any color or;

(b) GE 1200 series RTV Adhesives - any color;

(c) To apply the silicone-base filler compound on a non décor side surface, use the tapered dispensing tip or applicator gun to inject the filler into the void.

NOTE:
- Remove the excess material with a spatula.
- Obey the manufacturer's information about the cure time.

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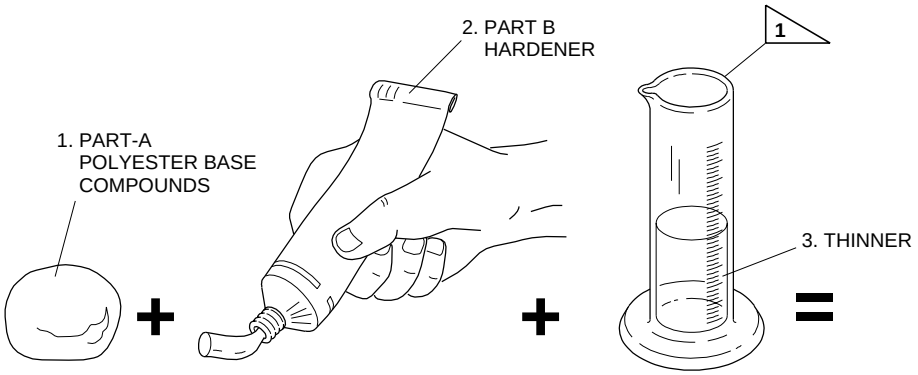
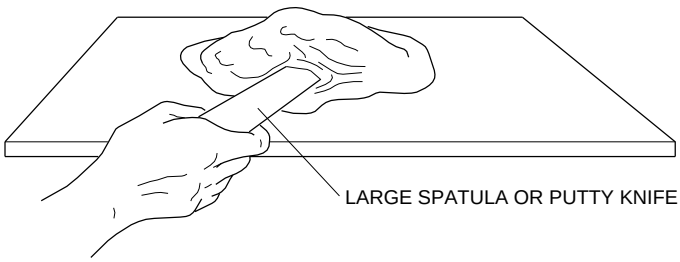
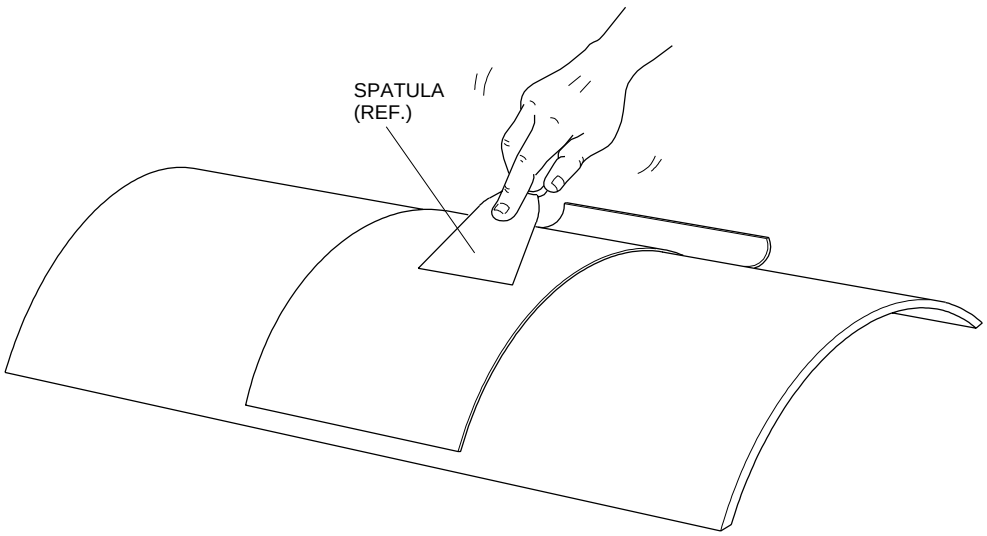
EFFECTIVITY: REPAIR WITH POLYESTER-BASE FILLER COMPOUND
Filling and Fairing Process - Repair
Figure 801







1 TO THIN THE FILLER

145AMM250618.MCE

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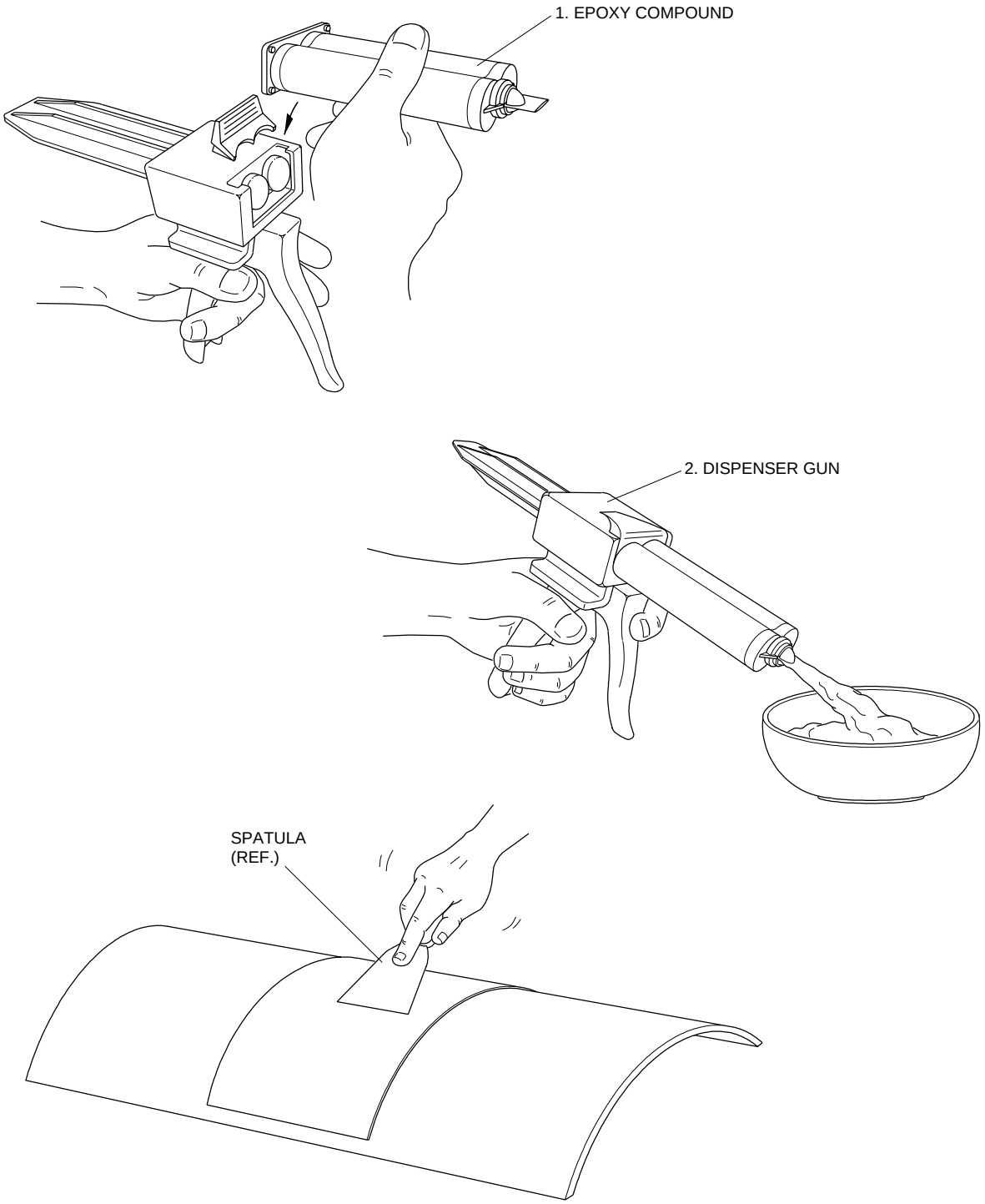
EFFECTIVITY: REPAIR WITH EPOXY-BASE FILLER COMPOUND
Filling and Fairing Process - Repair
Figure 802



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TASK 25-00-00-300-802-A
EFFECTIVITY: ALL

3. DECORATIVE MATERIALS - REPAIR

A. General

(1) This task gives the procedures to repair the Tedlar or tapestry laminated surface.

NOTE: These procedures are not applicable to the baggage compartment linings.

(2) Tedlar and tapestry are installed on the composite panels such as those of galleys, wardrobes, bulkheads, windscreen, sidewalls, skirtings, ceiling panels, PSU's, overhead bins, etc.

(3) To repair the decorative material (Tedlar or tapestry) you must obey the conditions given below:

(a) For repairs with the original adhesives, decorative laminate (Tedlar or tapestry), and processes as defined in this task, the repairs have no limitations.

(b) For repairs with other adhesives and decorative laminate, the total damage area in the same panel (that is, in each sidewall panel, in each skirting panel, in each ceiling panel, in the bulkhead, in the windscreen, in each component of the wardrobe, in each component of the galley, etc.) can not be larger than 103.0 cm^2 (16 in^2).

NOTE: The operator must control the total area of repair on each panel. Embraer suggests that you have a form where to control all repairs made on each panel. See an example of such a form in Table 805.

Table 805 - DAMAGE AREAS CONTROL

COMPONENTS	DAMAGE AREA	DATE OF REPAIR	IS THE PROCEDURE USED TO REPAIR DAMAGE UNLIMITED?	TOTAL DAMAGE AREA
Sidewall Panel (231 ALW)	38.7 cm^2 (6 in^2)	May 25/99	No	38.7 cm^2 (6 in^2)
Sidewall Panel (231 ALW)	51.6 cm^2 (8 in^2)	Dec 12/99	Yes[1]	38.7 cm^2 (6 in^2)
Sidewall Panel (231 ALW)	64.5 cm^2 (10 in^2)	Jul 01/00	No	103.0 cm^2 (16 in^2)
Sidewall Panel (231 ALW)	3.2 cm^2 (0.5 in^2)	Jul 15/00	No	106.2 cm^2 (16.2 in^2)[2]

[1] In the answer YES, the data is not input in the total amount.

[2] This repair is more than the allowable amount of limited repairs. Then, you must replace the panel or repair with original adhesive.

(c) If the amount of damage is greater than 103.0 cm^2 (16 in^2), you must replace the panel or repair with original adhesive.

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B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Steam Cleaner	To help to loosen the adhesive grip	
Commercially available	Shaker table	To stir the adhesives	
Commercially available	Heat gun	To smooth the surfaces	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Pliers	To grip the decorative material	AR
Commercially available	Razor-blade scraper	To strip the decorative material	1
Commercially available	Spatula	To strip the tapestry	1
Commercially available	Sandpaper, 120-320 grit and 400-600 grit	To make the surface smooth	AR
Commercially available	Scotchbrite	To make the surface smooth	AR
Commercially available	Kraft paper	To do the adhesive check	1
Commercially available	Paint stirrer	To stir the adhesives	AR
Commercially available	Gauging Syringe needles	To remove air	AR

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-680	Cleaning Solvent - Commercial grade	AR
Commercially available	Rhodiasolve E-23 - Commercial grade	AR

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(Continued)

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
Commercially available	AMT Aquabind	AR
Commercially available	Fastbond #30-NF	AR
Commercially available	Fastbond #5	AR
Commercially available	Polyken-108 double-side tape	AR
Commercially available	Peerco 321 Adhesive Remover	AR
Commercially available	Bostik #7132	AR
Commercially available	Boscodur #4	AR
Commercially available	Aerobond 1600	AR
Commercially available	Dupont TWH20BE3 whitebond (Tedlar)	AR
Commercially available	Super 77 adhesive - 3M	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
2	Do the task	Passenger cabin

I. Repair Small Damage with Original Materials (Figure 803)

SUBTASK 340-003-A

(1) NOTE: The procedures in the steps below are applicable to these conditions:

- Repair in areas of less than 102 mm^2 (4 in^2).
- If there is a bubble or void visible in the film.
- Repairs only on Tedlar laminate surface.

Use gauging syringe needles (recommended) or sewing needles to remove all air from the bubbles or voids in the film.

NOTE: If you use sewing needles, two or more small holes are necessary to remove the air.

(2) Inject the gauging syringe needles directly into the film and pull the plunger to remove the air.

(3) Force the air from the void or bubbles. Use light pressure and cotton rags or gloves to make the surface smooth.

(4) Use a heat gun set to 82°C - 99°C (180°F - 210°F) to make the removal and smoothing process faster and reactivate the adhesive that bonds the Tedlar.

(5) Smooth the adhesive primer down to the surface.

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J. Repair with Original Materials (Figure 804) (Figure 805)

SUBTASK 340-004-A

(1) NOTE: The procedures in the steps below are applicable to these conditions:

- Repair in areas greater than 102 mm^2 (4 in^2).
- Repairs on Tedlar or tapestry laminate surface.
- You can replace all the Tedlar or only the section around the damage. But a sectioning cannot be done without a visible seam.

Lay out the section to be removed and mask the surrounding panel.

(2) Put a blanket or mat over the panel to protect it from scratching or cuts while you work on the repair area.

(3) Strip off the tapestry from the panel as follows:

(a) Use a steam cleaner to help loosen the adhesive grip. This equipment will force moisture into tightly woven mat, and will not cause damage to the honeycomb panel.

(b) Tightly hold the edge of the tapestry with the pliers and strip it off.

(c) Use the razor-blade scraper or spatula to help strip the tapestry from the panel.

NOTE: Be careful not to pierce the panel with the razor-blade scrapper or spatula.

(d) Apply solvent such as lacquer thinner to strip off the tapestry more easily.

(4) Strip off the Tedlar from the panel as follows:

(a) Use a blade or safety razor to carefully cut the section of the Tedlar from the panel:

NOTE:
- It will be necessary to remove and replace a section of Tedlar in a panel. It can also be necessary to strip and replace the complete Tedlar.
- Cut only the Tedlar. Do not cut into the composite panel skin.
- Examine the panel carefully to reduce or eliminate the cosmetic defects.

(b) Use a heat gun and razor to lift an edge of the Tedlar.

(c) Use pliers to hold the material as it is heated, and lightly strip the section of Tedlar.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(5) Clean up the surfaces as follows:

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(a) In the case of surfaces with tapestry, clean them with a clean lint-free cheesecloth moist with isopropyl alcohol.

(b) In the case of surfaces with Tedlar, clean with Peerco 321 to remove excess of adhesive, dirt, oil, and debris.

(6) In the case of surfaces with Tedlar, smooth the panel surface with a filler compound.

NOTE: Obey the requirements of Filling and Fairing Process (AMM TASK 25-00-00-300-801-A/800).

(7) Remove all solvent with a dry shop wipe before it dries with a clean dry cheesecloth. Make sure that there is no remaining contamination on it.

NOTE:
- The surface will be clean when it is rubbed with a clean dry cloth and shows no indication of dirt, oil, or debris. Some pink adhesive is permitted.
- Do not touch the cleaned surfaces.

(8) Cut the sheet of Tedlar or tapestry to a dimension larger than the panel that will be covered.

(9) Pre-fit the Tedlar or tapestry to the panel, and tailor it to the corners of the panel.

(10) To continue the repair you must check the Table 806 that contents the three classes of decorative material (Tapestry or Tedlar) installed in the panels.

NOTE: The procedures for each class are specific, and not interchangeable or alternative.

Table 806 - CLASSES OF DECORATIVE MATERIALS

DECORATIVE MATERIALS	
Tedlar	Decorative laminate with and without a dry film adhesive
	Decorative laminate with pressure-sensitive adhesive
Tapestry	Decorative laminate without a film adhesive

WARNING: WEAR GLOVES AND GOGGLES AND PREVENT CONTACT WITH SOLVENT VAPORS DURING THE CLEANING.

(11) NOTE: For Tedlar with and without a dry film adhesive, follow the steps below (Figure 804):

Surface preparation for priming:

(a) Non-Acoustic Surfaces:

NOTE: Non-Acoustic surfaces are PSU's, overhead bins, galleys, wardrobes, windscreens, and other panels.

1 With a 400-600 grit sandpaper, sand the panel to remove rough areas.

2 Wipe the surface with a clean shop wipe soaked with clean solvent or isopropyl alcohol. The panel will be clean and residue-free when no signs of

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contaminates can be seen on a clean dry shop wipe that is applied to the surface.

3 Dry the panel surfaces with a clean shop wipe to distribute the solvent over the panel surface.

4 Spread the solvent out. This will assure complete evaporation.

5 You can use clean filtered compressed air to drive off excess solvent.

(b) Acoustic Surfaces:

NOTE: Acoustic surfaces are a backside of ceiling panels and sidewalls.

1 With a 400-600 grit sandpaper, sand the panel to remove rough areas.

2 To remove sanding residues, first turn the panel over and tap out excess dust and dirt from the sanding process. You can also remove excess dust with a shop vacuum.

3 Wipe the surface with a clean, shop wipe soaked with clean solvent or isopropyl alcohol. The panel will be clean and residue-free when no signs of contaminates can be seen on a clean dry shop wipe that is applied to the surface.

4 Dry the panel surfaces with a clean shop wipe to distribute the solvent over the panel surface.

5 Spread the solvent out. This will assure complete evaporation.

6 You can use clean filtered compressed air to drive off excess solvent.

(c) Aluminum Surfaces:

NOTE: The forward partition is an aluminum surface.

1 Wipe the surface with a clean shop wipe soaked with clean solvent or isopropyl alcohol. The panel will be clean and residue-free when no sign of contaminates can be seen on a clean dry shop wipe that is applied to the surface.

2 It is not necessary to prime aluminum before it is bonded.

3 Cross abrade the aluminum bonding surface with a 400-600 grit sandpaper. Do step 1 again.

(12) Obey the manufacturer's instructions to prepare the primers.

NOTE: Table 807 shows the primers available for use and their related catalysts.

Table 807 - PRIMERS

TRADE NAME	SHELF LIFE	STORAGE
Bostik #7132 Part A	6 Months	5°C-38°C (40°F-100°F)
Boscodur #4 Part B	6 Months	5°C-38°C (40°F-100°F)

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Table 807 - PRIMERS (Continued)

TRADE NAME	SHELF LIFE	STORAGE
Aerobond 1600 Part A	12 Months	5°C-38°C (40°F-100°F)
Aerobond 1600 Part B	12 Months	5°C-38°C (40°F-100°F)

(13) Primer application:

(a) Spray method:

1 Spray one to two uniform coats of the primer on the panel to which the Tedlar will be applied. Do not apply more than 4.3 grams per 10 m^2 - wet (0.14 oz./$ft.^2$), 1.3 grams per 10 m^2 - dry (0.04 oz./$ft.^2$), of primer.

If the total of both coats exceed these limits, strip the primer from the panel and start again.

2 If a second coat of Bostik is necessary, before it is applied, let the primer dry for a minimum of 15 minutes.

3 If a second coat of Aerobond 1600 is necessary (not typical), air-dry the first coat for 60 minutes, or put the panel in a warm 38°C - 46°C (100°F - 115°F), air-circulating oven or in a drying room 38°C ± 5°C (100°F ± 10°F) with dry air for a minimum of 20 minutes.

4 Air-dry the primed panel at room temperature for a minimum of 1 hour for Bostik and 8 hours for Aerobond primers.

5 The drying time may be decreased by 30 minutes for Bostik if you put the panel in an air-circulating oven at 71°C ± 5°C (160°F ± 10°F).

6 Aerobond can be heated at 40°C ± 5°C (104°F ± 10°F) for 30 minutes to accelerate the set-up.

Do not permit a temperature of more than 50°C or a time of more than 30 minutes. Do a check panel surface for tack. Low/no tack is necessary for bonding.

(b) Brush or roller method:

1 Apply a smooth, uniform brush or roller coat of primer on the panel surface.

2 Air-dry the primed panel at room temperature for a minimum of 1 hour for Bostik and Aerobond primers.

The drying time can be decreased by 30 minutes for Bostik if you put the panel in an air-circulating oven at 71°C ± 5°C (160°F ± 10°F).

(14) With a 400-600 grit sandpaper, smooth the surfaces primed. Be careful not to remove more than a minimum amount of primer.

(15) Contact adhesive application:

(a) Clean up the surface with clean solvent or isopropyl alcohol.

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(b) With a brush or nap roller, apply a uniform coat of Fastbond #30-NF to the bonding surface and Tedlar.

NOTE:
- Do not apply more than 4.3 grams per 10 m^2 - wet (0.14 oz./$ft.^2$), 1.3 grams per 10 m^2 - dry (0.04 oz./$ft.^2$), of the Fastbond #30-NF adhesive to the two surfaces to be bonded.
- On porous surfaces, two coats are possibly necessary.

(c) Touch Fastbond #30-NF adhesive with Kraft paper for the tack test. If the paper does not stick, the adhesive is ready.

NOTE: If the adhesive becomes too dry, apply one thin coat to reactivate it.

(16) Start from one edge and push the Tedlar to the panel.

NOTE: You can use a heat gun to form the decorative laminate and remove bubbles.

(17) Smooth out all wrinkles in the decorative laminate.

(18) Apply the Fastbond #5 adhesive along the border-edges with a roller, brush, or adhesive spreader (recommended) before you wrap them.

(19) Heat the decorative laminate around the edges of the panel with a heat gun held 150.0 mm (6 in) away for 5 to 10 seconds.

(20) Hold one end of the Tedlar tightly and start at the edges of the panels.

(21) Rub the decorative laminate down progressively with a clean cloth or cotton glove.

(22) NOTE: For Tedlar with pressure-sensitive adhesive, follow the steps below:

Remove the Tedlar backing paper.

(23) Start from one edge and push the Tedlar in small increments to the bonding surface of the panel, until bonding.

NOTE:
- Do not permit the remaining Tedlar to touch the bonding surface.
- Be very careful during this step to prevent wrinkling and bubbling of the Tedlar.
- You can use a heat gun to form the decorative laminate and remove bubbles.
- You must use heat guns moderately, at low setting, 90°C ± 10°C (200°F ± 20°F).

(24) Wipe the Tedlar with a dry cloth to make sure that it is completely bonded to the panel.

(25) NOTE: For tapestry without a film adhesive, follow the steps below (Figure 805):

To bond the tapestry, use the adhesives that are given in Table 808.

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Table 808 - ADHESIVES

APPLICATION	TRADE NAME	SHELF LIFE	STORAGE	SOLVENT/ THINNER
Tapestry	AMT Aquabind	6 Months	15.6°C-26.7° C (60°F-80°F)	Distilled water
Edge wrap tapestry	Fastbond #30-NF	6 Months	15.6°C-26.7° C (60°F-80°F)	Distilled water
Tapestry	Polyken-108 double-side tape	12 Months	Room Temperature	N/A

NOTE:
- You must use Aquabind adhesive on the panel interior, for tapestry.
- You must use Fastbond #30-NF and double-side tape adhesives for edge wrapping and bonding of the perimeter edge.
- See the adhesive shelf life before use.

(26) Prepare the AMT aquabind adhesive as follows:

NOTE: The aquabind adhesive is a thick, pink colored paste. The flame retardant and heavier weight endothermic filler usually settles to the bottom of the can.

(a) Open the can and use a paint stirrer to make sure that all solids are suspended through the material and that the material is homogeneous.

(b) Mix vigorously by hand for 2-3 minutes minimum and/or on a paint shaker table for 5-10 minutes.

(c) The adhesive will be ready to apply when it becomes uniform in color and texture.

(27) Make sure that the panel is clean.

(28) Mask the edges with 19-mm (¾-in) wide masking tape.

(29) Apply the AMT adhesive to the panel except 19 mm (¾-in) along the border-edges with a roller, brush, or adhesive spreader (recommended).

NOTE: Adhesive spreader must be a 40-mm (1/16-in) wide slotted comb spreader.

(30) Comb the adhesive or coat all the surface.

(31) Start from one edge and push the tapestry to the bonding surface of the panel.

NOTE: Do not permit the remaining tapestry to touch the bonding surface.

(32) The tapestry must be pushed into the adhesive quickly. You can use a roller to help distribute the fabric and apply even pressure.

NOTE:
- The adhesive starts to set in 5 minutes.
- Seat the tapestry and make it smooth as necessary.

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- Be very careful during this step to prevent wrinkles and bubbles of the tapestry.

(33) Let the material cure for 4 hours at 15°C - 25°C (60°F - 80°F).

NOTE:
- To accelerate the cure, heat the panels to 65°C - 74°C (150°F - 165°F) for 2 hours.
- Do not disturb bond until the cure is complete.

(34) Lift the edges of the tapestry to apply the edge adhesives on the panel. Bond the edges with Fastbond #30-NF or Polyken-108.

(35) NOTE: The steps below are applicable when the edges are bonded with Fastbond #30-NF.

Prepare the Fastbond #30-NF adhesive as follows:

NOTE: The Fastbond #30-NF adhesive is 1-part system (no mix is necessary).

(a) Stir the adhesive fully before use.

(b) Use it directly for brush application or thin one part adhesive with water as necessary.

(36) With a brush or nap roller, apply a uniform coat of 19-mm (¾-in) (or less) wide Fastbond #30-NF to the periphery of the tapestry and bonding surface.

NOTE:
- Do not apply more than 4.3 grams per 10 m^2 - wet (0.14 oz./$ft.^2$), 1.3 grams per 10 m^2 - dry (0.04 oz./$ft.^2$), of the Fastbond #30-NF adhesive to the two surfaces to be bonded.
- On porous surfaces, two coats are possibly necessary.

(37) Touch Fastbond #30-NF adhesive with Kraft paper to test the tack. If the paper does not stick, the adhesive is ready.

NOTE: If the adhesive becomes too dry, apply one thin coat to reactivate it.

(38) Push the tapestry down on one corner and smooth all edges.

(39) NOTE: The steps below are applicable when the edges are bonded with Polyken-108 double-sided tape.

Tightly attach the edges of tapestry with a double-sided Polyken-108 tape or mechanically block the material to the panel for permanent bonding (i.e. with a channel to hold the panel tapestry in position).

(40) Make sure that the edge treatment is like in the original installation and complete.

(41) Wipe the Tedlar or tapestry with a dry cloth to make sure that them are completely bonded to the panel.

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K. Repair Minor Defect without Original Materials

SUBTASK 340-005-A

(1) NOTE: The procedures in the steps below are applicable to these conditions:

- Repairs only on Tedlar laminate surface.
- The total damage area in the same panel (that is, in each sidewall panel, in each skirting panel, in each ceiling panel, in the bulkhead, in the windscreen, in each component of the wardrobe, in each component of the galley, etc.) can not be larger than 103.0 cm^2 (16 in^2).
- The operator must control the total area of repair on each panel. Embraer suggests that you have a form where to control all repairs made on each panel. See an example of such a form in Table 805.
- If the amount of damage is greater than 103.0 cm^2 (16 in^2), you must replace the panel or repair with original adhesive.

Obey the requirements of Filling and Fairing Process (AMM TASK 25-00-00-300-801-A/800) to correct the minors defects.

(2) Apply polyurethane or paint over the whole area to finish the repair.

To paint the overhead bin, use the paints listed below:

(a) Alexi FST Strukturlack 346-65, color DA2.8 Cloud White with Alexit FST Hartner (catalyst) or;

(b) WLS 982-1428 or;

(c) WLS 412 (1 part) -109.

L. Repair to White Bondable Tedlar (Figure 806)

SUBTASK 340-006-A

(1) NOTE: The procedures in the steps below are applicable to these conditions:

- Repairs only on Tedlar laminate surface in the interior of overhead bins.
- To upgrade the appearance or repair damage, you can use one of two methods: to paint or bond the surface of the component.
- The total damage area in the same overhead bin can not be larger than 103.0 cm^2 (16 in^2).
- The operator must control the total area of repair on each panel. Embraer suggests that you have a form where to control all repairs made on each panel. See an example of such a form in Table 805.
- If the amount of damage is greater than 103.0 cm^2 (16 in^2), you must replace the panel or repair with original adhesive.

Mask the other areas.

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WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(2) NOTE: The steps below are applicable to the painting method:

Clean the surface with solvents such as isopropyl alcohol.

(3) Scuff/abrade the surface with 120-320 grit sandpaper.

NOTE: Thin gauge white bond Tedlar cannot be easily reworked.

(4) Obey the requirements of Filling and Fairing Process (AMM TASK 25-00-00-300-801-A/800) to feather out the edge created by the sharp end of the Tedlar on the bare panel face.

NOTE: To feather out the 2 mil thickness, taper the filler from the bare panel to the White bond Facing.

(5) Carefully sand flush and make sure that the sanded area is kept to a minimum.

(6) Clean the surface with a clean lint-free cheesecloth moist with isopropyl alcohol.

(7) Remove all solvent with a dry shop wipe before it dries with a clean dry cheesecloth. Make sure that there is no remaining contamination on it.

NOTE:
- The surface will be clean when it is rubbed with a clean dry cloth and shows no indication of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(8) Spray over the prepared area with a color matched polyurethane based paint.

To paint the overhead bin, use the paints listed below:

(a) Alexi FST Strukturlack 346-65, color DA2.8 Cloud White with Alexit FST Hartner (catalyst) or;

(b) WLS 982-1428 or;

(c) WLS 412 (1 part) -109.

(9) Touch-up can also be done with a brush.

(10) NOTE: Do the step below only if necessary.

Smooth the surface with a fine scouring material such as Scotchbrite very fine scouring pad.

NOTE: Do not abrade the adjacent Tedlar.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(11) NOTE: The steps below are applicable to the bonding method:

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Clean the surface with solvents such as isopropyl alcohol.

(12) Scuff/abrade the surface with 120-320 grit sandpaper.

NOTE: Thin gauge white bond Tedlar cannot be easily reworked.

(13) Clean the surface with a clean lint-free cheesecloth moist with isopropyl alcohol.

(14) Remove all solvent with a dry shop wipe before it dries with a clean dry cheesecloth. Make sure that there is no remaining contamination on it.

NOTE:
- The surface will be clean when it is rubbed with a clean dry cloth and shows no indication of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(15) Cut the sheet of Dupont TWH20BE3 whitebond (Tedlar) to a dimension larger than the panel that will be covered.

(16) Spray Super 77 adhesive on the panel and Dupont TWH20BE3 whitebond (Tedlar) surfaces.

(17) Allow 30 seconds - 1 minute to dry.

(18) Carefully position and bond the Dupont TWH20BE3 whitebond (Tedlar) in place.

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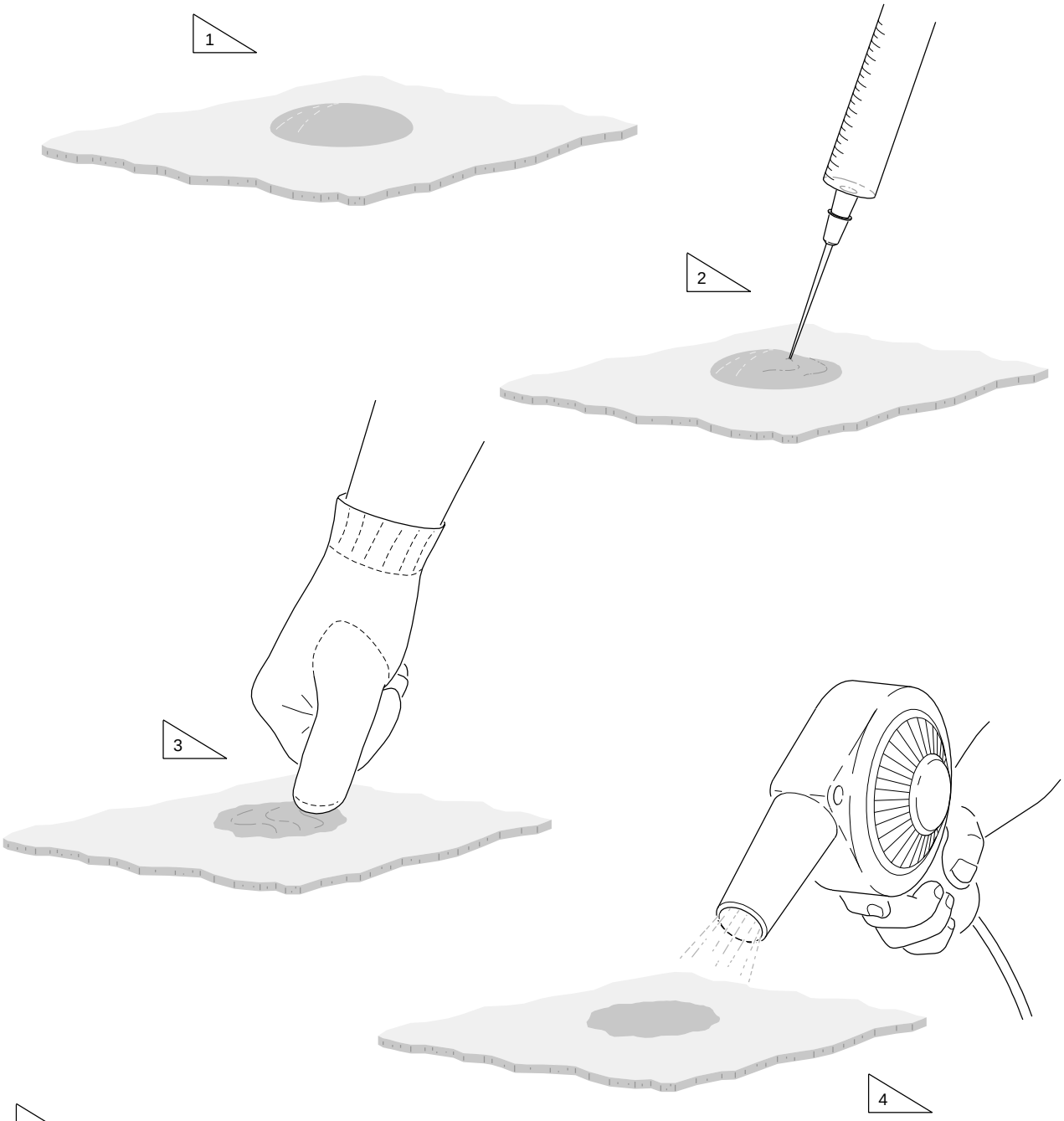
EFFECTIVITY: ALL

Repair Small Damage with Original Materials
Figure 803



1 DAMAGED AREAS LESS THAN 102 MILLIMETERS2 (4 INCHES2).

2 REMOVE ALL AIR WITH A GAUGING SYRINGE NEEDLE.

3 FORCE THE AIR FROM THE VOID OR BUBBLES.

4 USE A HEAT GUN TO MAKE REMOVAL AND SMOOTHING PROCESS FASTER AND REACTIVATE THE ADHESIVE PRIMER.

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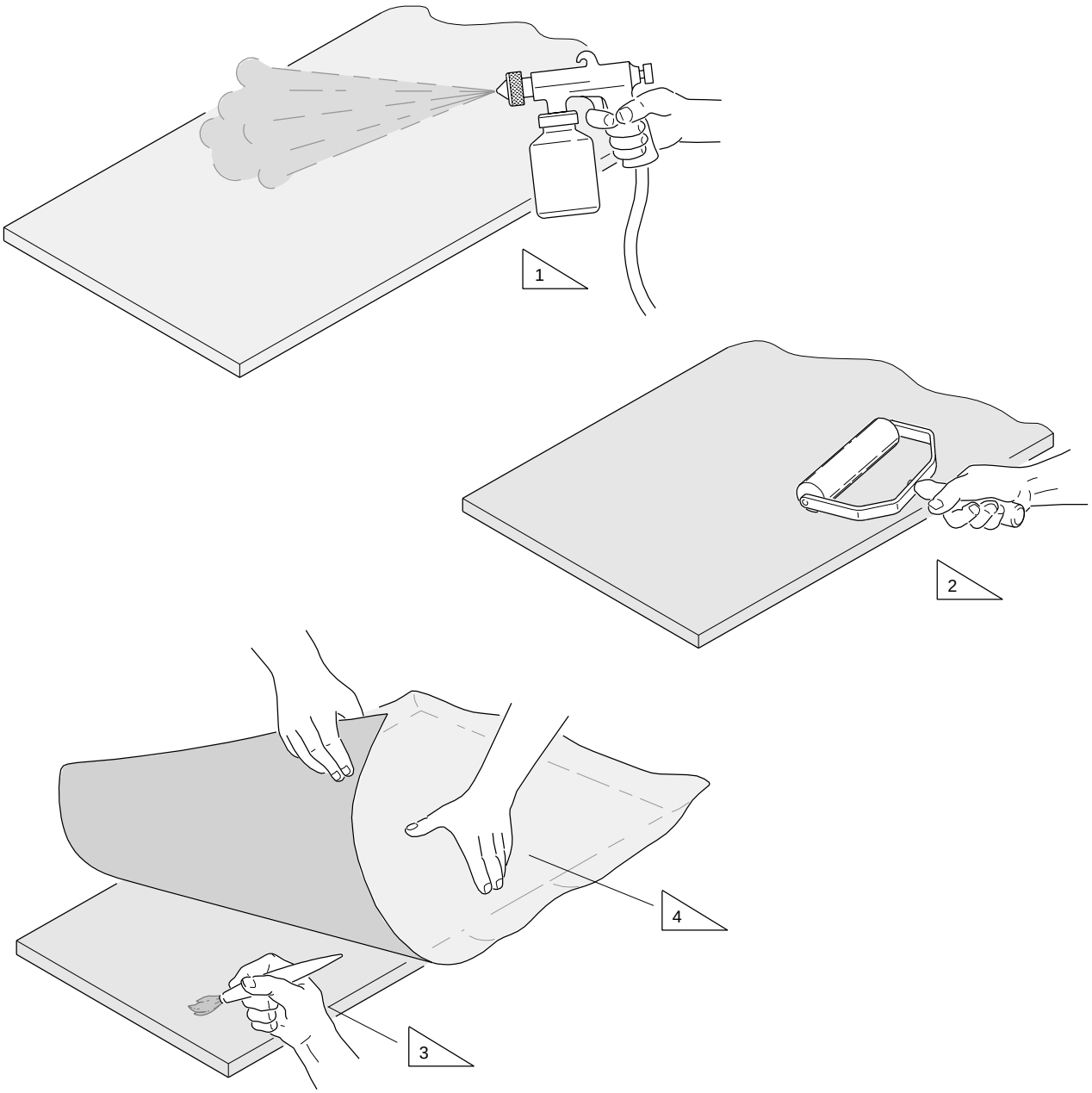
EFFECTIVITY: ALL

Repair with Original Materials - Tedlar with and without a Dry Film Adhesive
Figure 804 - Sheet 1



1 SPRAY ONE TO TWO COATS OF THE PRIMER ON THE PANEL.

2 APPLY A SMOOTH, UNIFORM BRUSH COAT OF PRIMER ON THE PANEL.

3 APPLY FASTBOND#30-NF TO THE BONDING SURFACE AND TEDLAR.

4 START FROM ONE EDGE AND PUSH THE TEDLAR TO THE PANEL.

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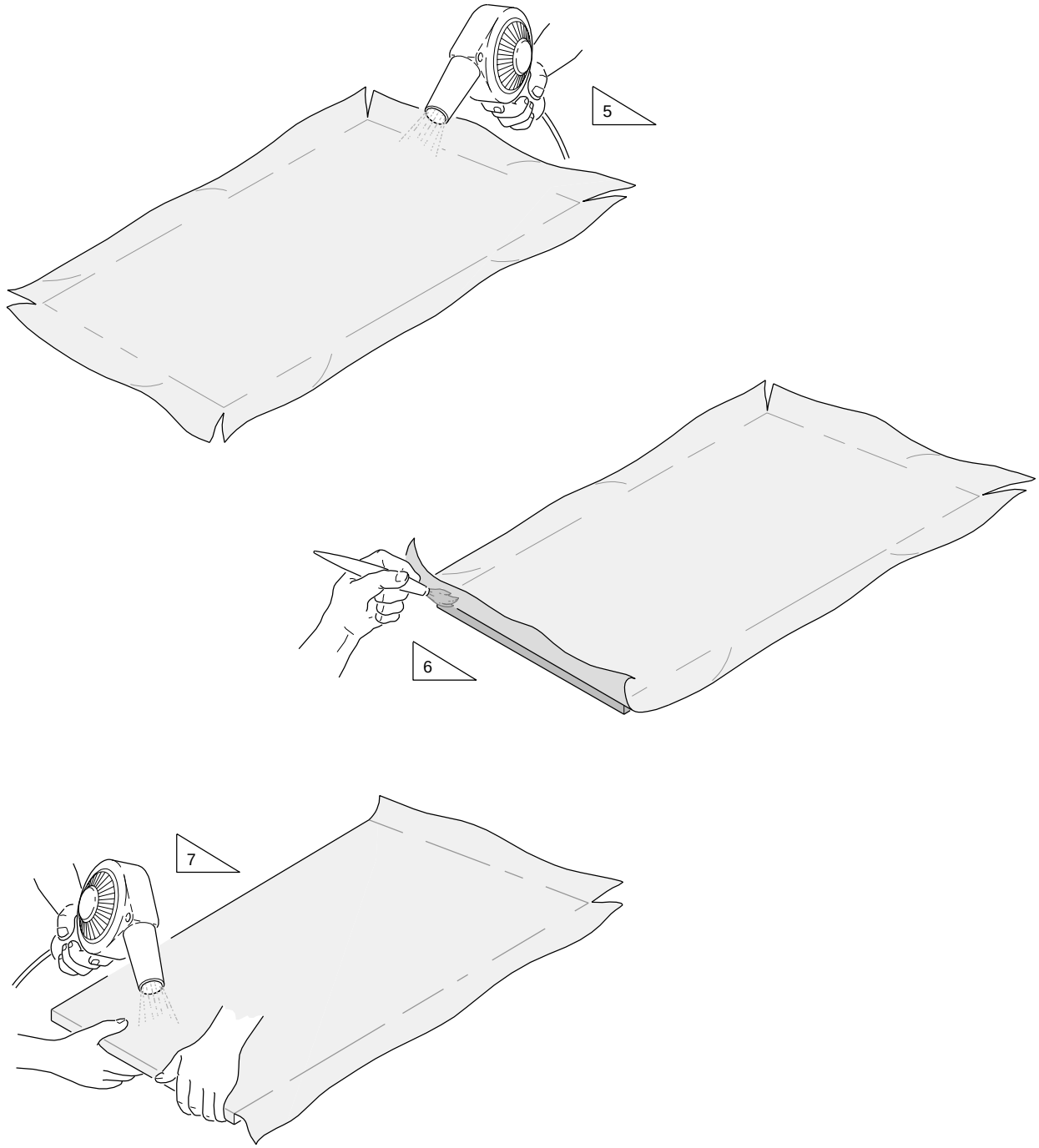
EFFECTIVITY: ALL

Repair with Original Materials - Tedlar with and without a Dry Film Adhesive
Figure 804 - Sheet 2



5 USE A HEAT GUN TO FORM THE DECORATIVE LAMINATE AND REMOVE BUBBLES.

6 APPLY THE FASTBOND#5 ADHESIVE ALONG THE BORDER-EDGES.

7 WRAP THE BORDER-EDGES AND HEAT THEM.

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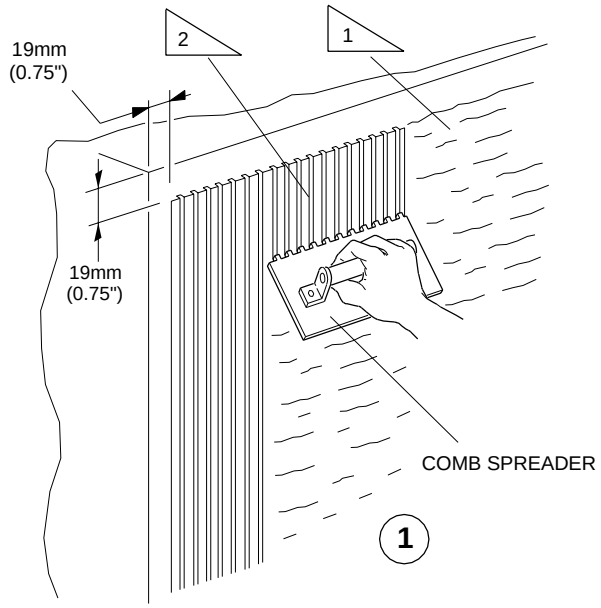
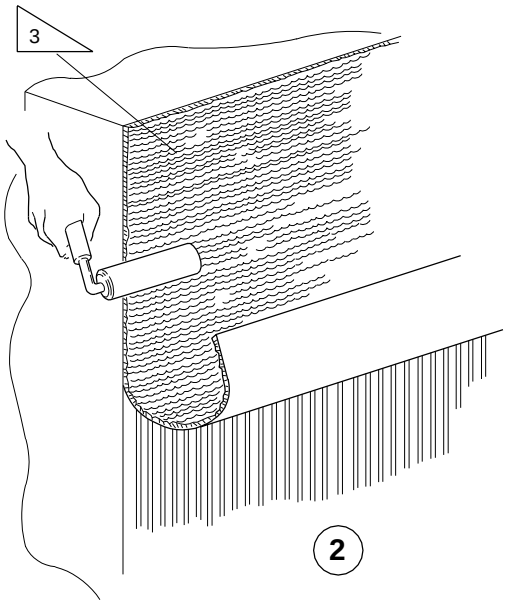
EFFECTIVITY: ALL

Repair with Original Materials - Tapestry without a Film Adhesive
Figure 805

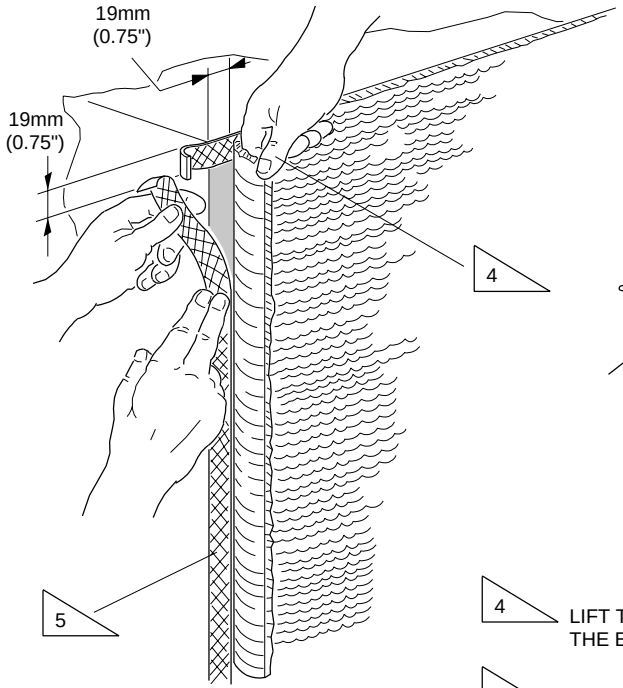


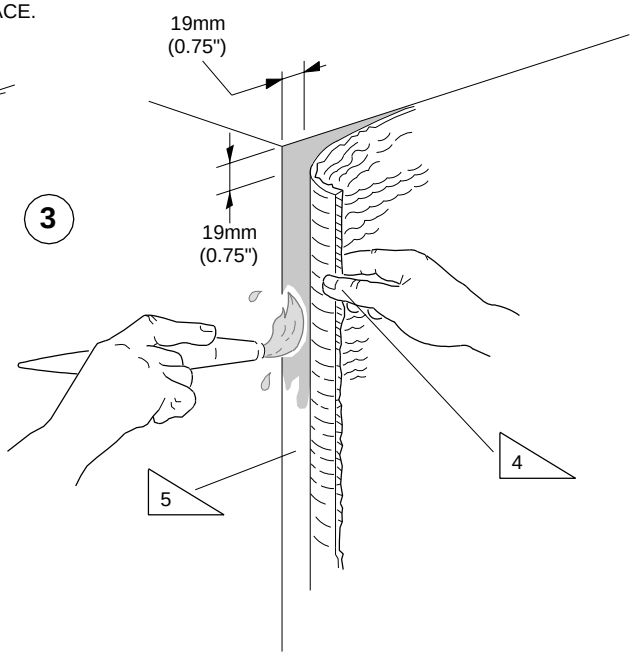


1 APPLY AMT ADHESIVE TO THE PANEL EXCEPT 19 MILLIMETERS (3/4 INCHES) ALONG THE BORDER-EDGES.

2 COMB THE AMT ADHESIVE OR COAT ALL THE SURFACE.

3 PUSH THE TAPESTRY INTO THE ADHESIVE.





4 LIFT THE EDGES OF THE TAPESTRY TO APPLY THE EDGE ADHESIVE ON THE PANEL.

5 APPLY FASTBOND#30-NF OR POLYKIN-108 TO BOND THE EDGES.

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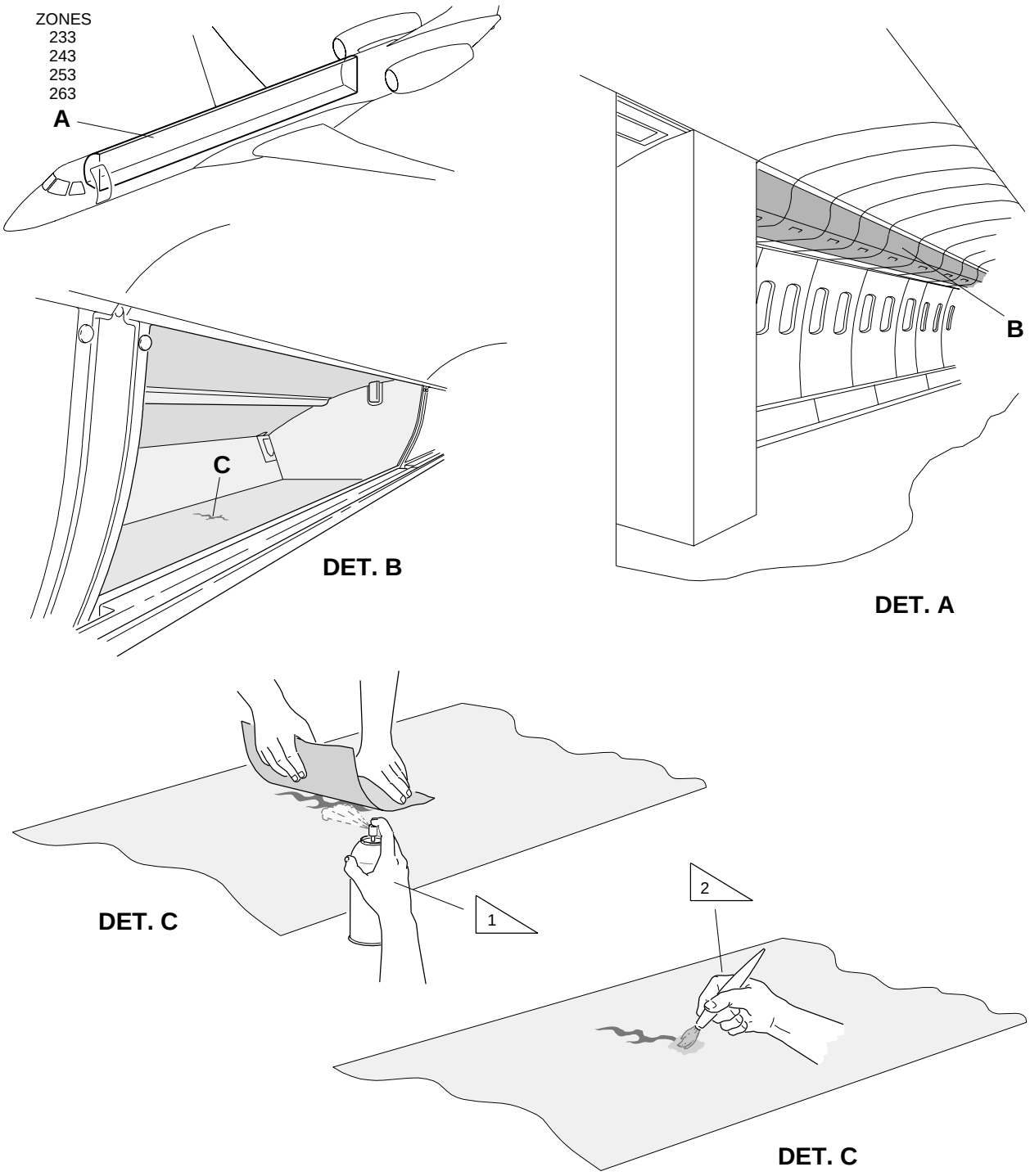
EFFECTIVITY: ALL

Repair to White Bondable Tedlar
Figure 806



1 SPRAY SUPER 77 ADHESIVE ON PANEL AND TEDLAR SURFACE AND BOND THE TEDLAR IN PLACE.

2 PAINT THE PREPARED AREA.

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TASK 25-00-00-300-804-A
EFFECTIVITY: ALL

4. EDGE FILL AND EDGE CAST PROCESSES - REPAIR

A. General

(1) This task gives the procedures to repair the surfaces of parts and panels made from honeycomb core sandwich structure.

NOTE: These procedures are not applicable to the baggage compartment linings.

(2) To repair the edge surfaces of parts or panels, you can use these processes below:

(a) Edge Fill process or;

(b) Edge Cast process.

(3) To repair the surfaces of parts or panels, you must obey the conditions given below:

(a) To prepare and restore panel edges to receive the decorative material you can use unlimited the process of edge fill and edge cast.

(b) For damages that the area cannot be matched to surrounding panels, casting tools must be used by the edge cast process.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR
AMM TASK 25-00-00-300-802-A/800	DECORATIVE MATERIALS - REPAIR
AMM TASK 25-00-00-300-808-A/800	PAINTING AND PRIMING OF COMPOSITE MATERIAL PARTS

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Pneumatic angle motor	To remove excess material	
Commercially available	Drill	To mix the putty	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper, 200-400 grit	To remove excess material	AR
Commercially available	Rubber gloves	Hand protection	1

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(Continued)

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Safety goggles	Eye protection	1
Commercially available	Spatula	To apply edge fill compound to the surface	1
Commercially available	Dust mask	To prevent skin irritations and excessive inhalation	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-680	Cleaning Solvent - Commercial grade	AR
Commercially available	L-306 Edge Fill Adhesive	AR
Commercially available	L-318 Edge Cast Adhesive	AR
Commercially available	FR 7128 Edge Cast Adhesive	AR
Commercially available	FR 7162 Edge Cast Adhesive	AR
Commercially available	FR 7176 Edge Cast Adhesive	AR
Commercially available	Aerofill 1504 Edge Cast Adhesive	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

I. Preparation

SUBTASK 841-002-A

(1) Remove the decorative material on the edge of panel as follows:

(a) Remove the Tedlar decorative material AMM TASK 25-00-00-300-802-A/800, if applicable.

(b) Remove the tapestry decorative material AMM TASK 25-00-00-300-802-A/800, if applicable.

(c) Remove the paint decorative material AMM TASK 25-00-00-300-808-A/800, if applicable.

J. Edge Fill Process (Figure 807)

SUBTASK 340-007-A

(1) Do the steps below to use the edge fill process.

NOTE: The edge fill process is used to environmentally seal the core from moisture migration and provide local crush resistance for the edge of a panel or cut out.

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(a) Remove core from edge of panel 6.0 to 9.5 mm (¼ to 3/8 in) deep with a pair of needle nose pliers or similar.

NOTE: Make sure that the inside face of the skin is not damaged in process.

(b) Remove all loose core from the edge.

(c) NOTE: Obey the manufacturer's instructions to mix quantities of the edge fill compound.

From their respective pails, place with a spatula the edge fill compounds L-306 Part A and B under a drill press mixer or use a hand mixer to thoroughly mix the material.

NOTE:
- Clean the spatula when you use each kind of edge fill compound.
- The edge fill compound L-306 Part A and Part B must not be mixed in batches larger than 500 grams (1.10 lb), because the material can be too hot.

(d) Mix the edge filler compounds Part A and Part B either by hand or mechanical mixing.

NOTE:
- For mechanical mixing, use a drill press with a mixing paddle and set it up at low speed.
- Move the mixer up and down inside the cup to make sure that all of material is combined properly.
- Do not over mix the material, because excessive mixing can cause exothermic and premature core.
- Pot life for a properly mixed batch of adhesive is 12 to 20 minutes.

(e) Continue the process until the putty has a uniform color and consistency.

(f) Remove excess adhesive from the paddle with a spatula or tongue depressor.

(g) Remove remaining adhesive with appropriate solvent, prior to gelation.

(2) To apply the edge fill compounds on surfaces, do the steps below (Figure 807):

(a) Wet a spatula and slide edge fill compound beyond skin edges.

NOTE:
- Make sure that the material is continuous and all voids are filled to the core by repeating this process of edge fill.
- For small voids, use filling and fairing compounds process AMM TASK 25-00-00-300-801-A/800 to fill them.

(b) Allow the edge fill compound enough time to set before sanding. Obey the manufacturer's information about the cure time.

(c) Do a visual check on the edge cast compound for correct cure.

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(d) Apply light pressure with a fingernail. The filler must be cured without a depression in the shape of a crescent.

WARNING:
- **SANDING OF COMPOSITE MATERIAL GIVES OFF A FINE DUST WHICH MAY CAUSE SKIN IRRITATIONS. EXCESSIVE INHALATION OF THIS DUST IS A POTENTIAL HEALTH HAZARD.**
- **WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES.**

(e) Sand the part or panel to remove excess edge fill compound beyond edge of skins.

NOTE:
- You can sand by hand to remove the excess material with 80-180 grit sandpaper.
- You can sand by machine to remove excess material with pneumatic angle motor.
- Make sure that the result will be a straight line from one skin of the sandwich structure to the other and the panel or part net dimensions are maintained.

K. Edge Cast Process (Figure 808)

SUBTASK 340-008-A

(1) Do the steps below to use the edge cast process to repair.

NOTE:
- The edge cast process is used to environmentally seal the core and provide a compound.
- The edge cast compounds have thinner consistency than edge fill compounds.

(a) Remove core from edge of panel 3.0 mm (1/8 in) deep with a pair of needle nose pliers or similar.

NOTE: Make sure that the inside face of the skin is not damaged in process.

(b) Remove all loose core from the edge.

(c) NOTE: Obey the manufacturer's instructions to mix quantities of the edge cast compound.

From their respective pails, place with a spatula the edge cast compounds Part A and B, under a drill press mixer or use a hand mixer to thoroughly mix the material.

NOTE:
- Use one of the types of edge cast Part-A and corresponding Part B listed in the Table 809.
- Clean the spatula when you use each kind of edge cast compound.

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- The edge cast compounds L- 318 Part A and Part B must not be mixed in batches larger than 500 grams (1.10 lb), because the material can be too hot.
- The edge cast compounds FR7128, FR7162 and Aerofill 1504 are designed as a strong, pourable and lightweight filler for honeycomb core panels. They have flame retardant additives. They are resistant to 177°C (350°F) and cure at room temperature in thickness to 25.4 mm (1 in).
- The edge cast compounds FR7176 are designed as a strong, extrudable and lightweight filler for honeycomb core panels. It has flame retardant additives, is resistant to 177°C (350°F) and cures at room temperature in thickness to 12.7 mm (½ in).

Table 809 - EDGE CAST COMPOUND

PART-A EDGE CAST COMPOUNDS	PART-B
L-318 Part-A	L-318 Part-B hardener
FR 7128 Part-A	FR 7128 Part-B hardener
FR 7162 Part-A	FR 7162 Part-B
FR 7176 Part-A	FR 7176 Part-B
AEROFILL 1504 Part-A	AEROFILL 1504 Part-B

(d) Mix the edge cast compounds Part A and Part B as follow:

1 Use a drill press with a mixing paddle and set it up at low speed.

2 Move the mixer up and down inside the cup to make sure that all of material is combined properly.

NOTE:
- Do not over mix the material, because excessive mixing can cause exothermic and premature core.
- For L-318, pot life for a properly mixed batch of adhesive is 12 to 20 minutes.

(e) Continue the process until the putty has a uniform color and consistency.

(f) Remove excess adhesive from the paddle with a spatula or tongue depressor.

(g) Remove remaining adhesive with appropriate solvent, prior to gelation.

(2) To apply the edge cast compounds on surfaces, do the steps below (Figure 808):

NOTE: When you do the edge cast process, it is necessary to use molds to make easier the application of edge cast compounds that have thinner consistency than edge fill compounds.

(a) Heat the mold to a maximum of 110°C (230°F).

NOTE: Heat the tool increases the cure time and also lowers the viscosity of the edge cast material.

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(b) Put the panel or part in mold using shims with approximately 25.4 mm (1 in) width.

NOTE: If necessary, use clamps to secure from further movement. It is essential that the panel make intimate contact with the surface of the mold in order to reduce flashing.

(c) Use an applicator tube to fill the void between the tool and the panel above the surface of the upper skin.

NOTE:
- Make sure that the material is continuous and all voids are filled to the core by repeating this process of edge cast.
- Spread it as thinly as possible over the surface of the part or panel.

(d) If voids occur during casting, rework part by replacing in the tool and injecting casting resin into those sections. Small voids in casting can be filled by filling and faring compound process AMM TASK 25-00-00-300-801-A/800.

(e) Allow the edge cast compound enough time to set before sanding. Obey the manufacturer's information about the cure time for each material.

(f) Remove the panel or part from the mold.

(g) Do a visual check on the edge cast compound for correct cure.

(h) Apply light pressure with a fingernail. The filler must be cured without a depression in the shape of a crescent.

WARNING:
- **SANDING OF COMPOSITE MATERIAL GIVES OFF A FINE DUST WHICH MAY CAUSE SKIN IRRITATIONS. EXCESSIVE INHALATION OF THIS DUST IS A POTENTIAL HEALTH HAZARD.**
- **WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES.**

(i) Sand the part or panel to remove excess edge cast compound beyond edge of skins.

NOTE:
- You can sand by hand with 80-180 grit sandpaper.
- You can sand by machine with pneumatic angle motor.
- Make sure that the result will be a straight line from one skin of the sandwich structure to the other and the panel or part net dimensions are maintained.

L. Follow-on

SUBTASK 842-002-A

(1) Install the decorative material on the edge of panel as follows:

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(a) If you removed, apply the Tedlar decorative material AMM TASK 25-00-00-300-802-A/800.

(b) If you removed apply the tapestry decorative material AMM TASK 25-00-00-300-802-A/800.

(c) If you removed, apply the paint decorative material AMM TASK 25-00-00-300-808-A/800.

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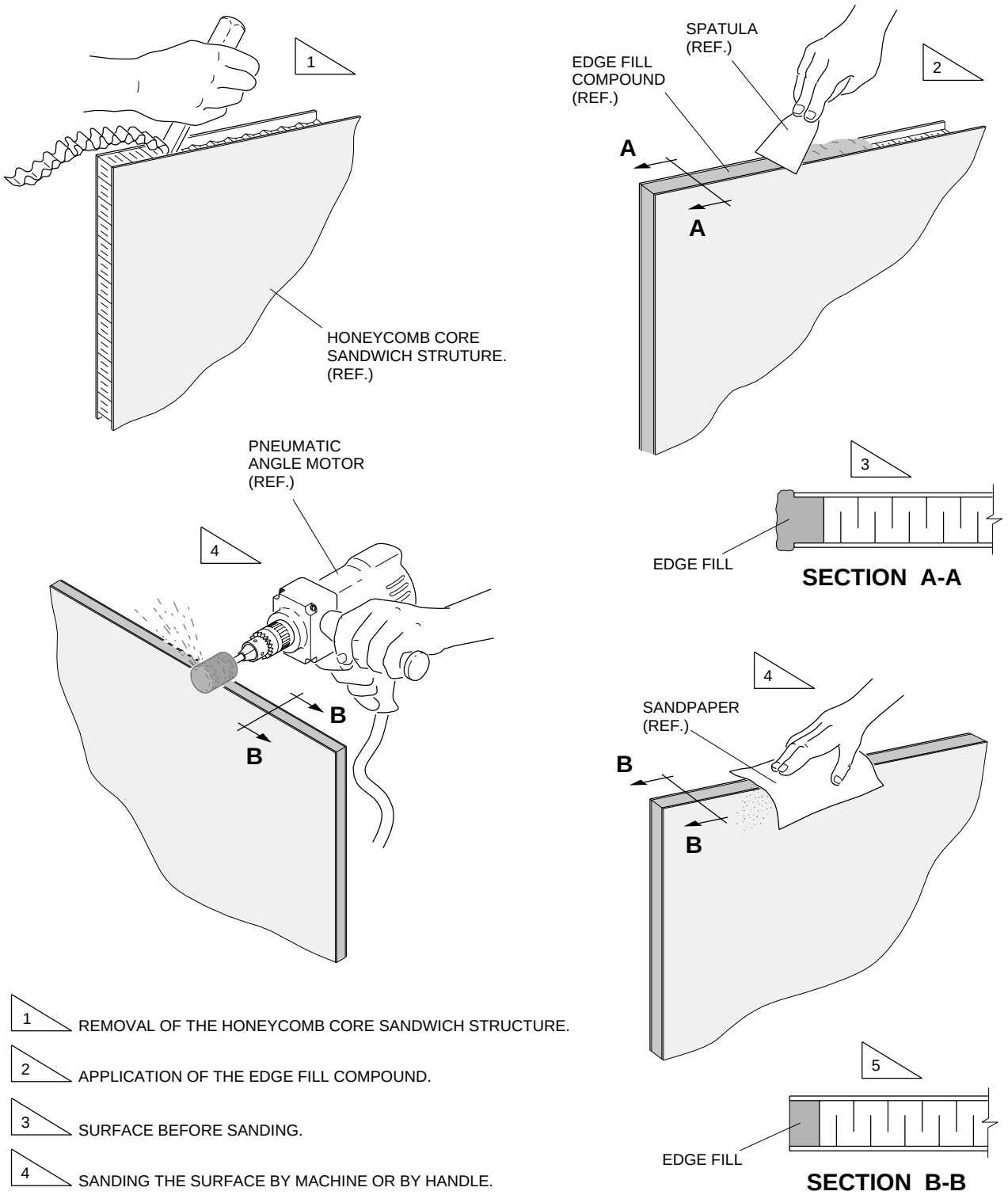
EFFECTIVITY: REPAIRS WITH EDGE FILL COMPOUND

Edge Fill Process - Repair
Figure 807



1 REMOVAL OF THE HONEYCOMB CORE SANDWICH STRUCTURE.

2 APPLICATION OF THE EDGE FILL COMPOUND.

3 SURFACE BEFORE SANDING.

4 SANDING THE SURFACE BY MACHINE OR BY HANDLE.

5 SURFACE AFTER SANDING

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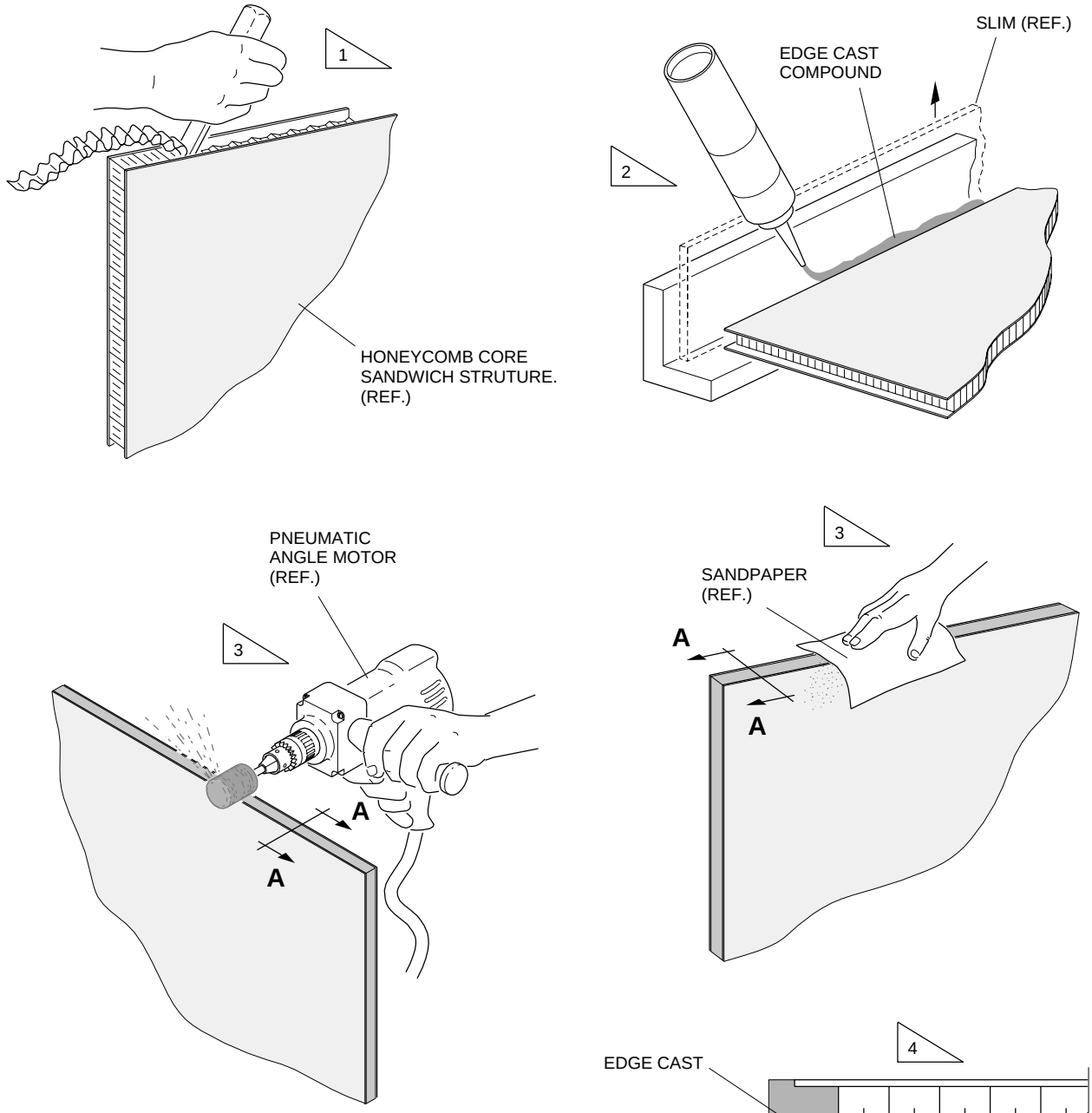
EFFECTIVITY: REPAIRS WITH EDGE CAST COMPOUND
Edge Cast Process - Repair
Figure 808



1 REMOVAL OF THE HONEYCOMB CORE SANDWICH STRUCTURE.

2 ASSEMBLY OF THE HONEUCOMB TO MOLD AND APPLICATION OF THE EDGE CAST COMPOUND.

3 SAND THE SURFACE BY HANDLE OR BY MACHINE.

4 SURFACE AFTER SANDING

SECTION A-A

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TASK 25-00-00-300-805-A
EFFECTIVITY: ALL

5. SEALING OF JOINTS - REPAIR

A. General

(1) This task gives the procedures to repair dovetail, stab-in and split-line joints with potting compound in phenolic honeycomb and aluminum skinned panels, galleys, wardrobes, overhead bin, and lavatories.

NOTE: This procedure is not applicable to the interior of the waste compartment installed in the forward and aft galleys, and in the lavatory. Also, they are not applicable to the baggage compartment linings.

(2) When movement or adjustment of stab-in joint is necessary, make sure that there will be no damage to the joint and that the repair is possible.

(3) To repair the dovetail, stab-in and split-line joints, you must obey the conditions given below:

(a) Damage length must be less than 1/10th length or 2.5 cm (1 in), whichever is less, and;

(b) Damage depth must be less than ½ thickness of the base panel or 1.6 mm (0.06 in) whichever is less;

(c) If the amount of damage is greater than the limits above, you must replace the panel or repair with original adhesive.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

Not Applicable

D. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Shop Wipes	For cleaning	AR
Commercially available	Spatula	To remove excess material	1
Commercially available	Sandpaper 80-120	To break surface gloss	AR
Commercially available	Masking tape	To mask the surface panel	AR
Commercially available	Measuring scale	To measure the depth and length of damage	AR

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E. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-680	Cleaning Solvent - Commercial grade	AR
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
Commercially available	L-301 Adhesive	AR
Commercially available	DP-420 Adhesive	AR
Commercially available	EC-2216 Adhesive	AR
Commercially available	RTV GE 102 Adhesive	AR

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

H. Repair (Figure 809)

SUBTASK 340-009-A

WARNING:
- **OBEY SHOP SAFETY PRACTICES CAREFULLY TO AVOID INJURY.**
- **WEAR COTTON OR LATEX GLOVES WITHOUT POWDER AND GOGGLES AND AVOID SOLVENT VAPORS DURING THE CLEANING.**

(1) Remove all grease and release agent or other contaminant from the surface.

(2) Wipe the panel with a clean shop wipe soaked with clean solvent or isopropyl alcohol to remove dirt, oil, and debris.

NOTE:
- Do not let solvents evaporate on the surface. Wipe dry with other clean, dry shop wipe.
- To much solvent or a soaked rag let the solvent migrate into split-line joint.

(3) On aluminum surfaces, use an 80-120 grit sanding paper to rough the surface.

(4) Mask the original panel.

NOTE:
- Use standard natural rubber adhesive masking tape or Blue Polyester Flash-Breaker tape.
- Do not use silicone-based adhesives.

(5) To fill the discrepant area, use the adhesives that are given in Table 810.

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Table 810 - SEALING ADHESIVES

ADHESIVES	MIX RATIO BY WEIGHT RESIN/HARDENER	APPROX. POT LIFE 15.5°C to 26.7°C (60°F to 80°F)
L-301	100/50	24 hours
EC 2216 (Kit)	7/5	1-1/2 hour
DP 420	100/50	9 minutes

(6) Remove excess adhesive with a spatula.

NOTE:
- This will let the adhesive be only 0.05 mm (0.002 in) above the composite surface.
- Fill only the damage area.

(7) Obey the manufactor's instruction to cure the sealant.

(8) After epoxy seal is cured, put a thin bead of RTV (cosmetic grout) along the panel edge, if necessary.

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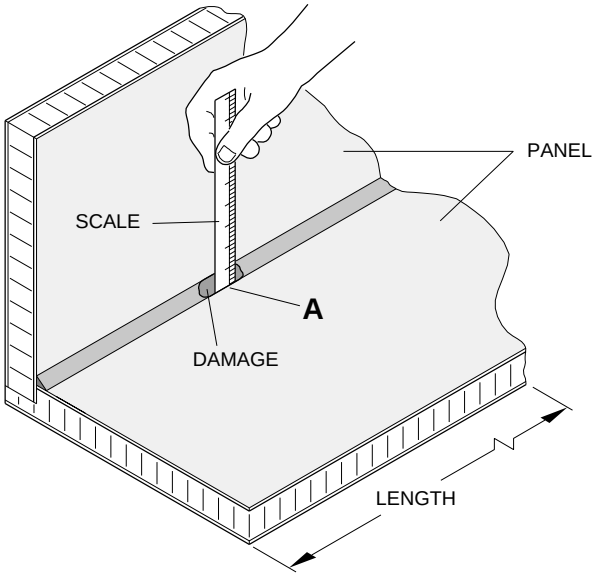
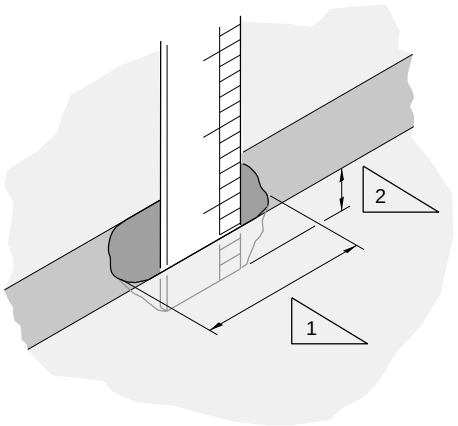
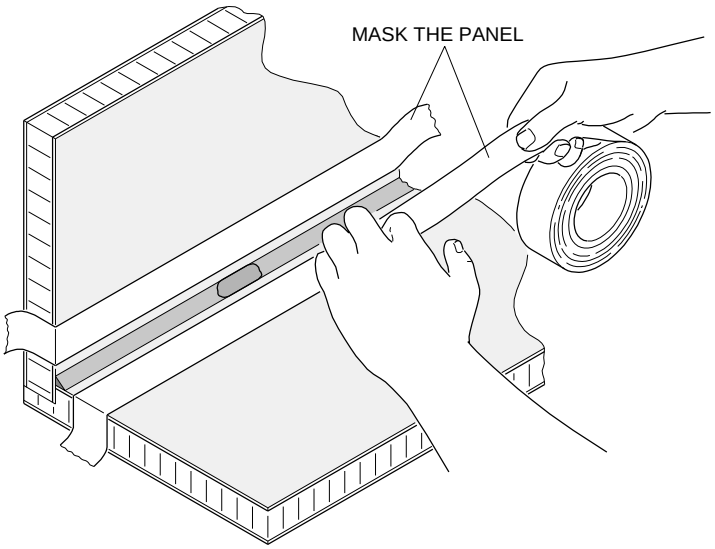
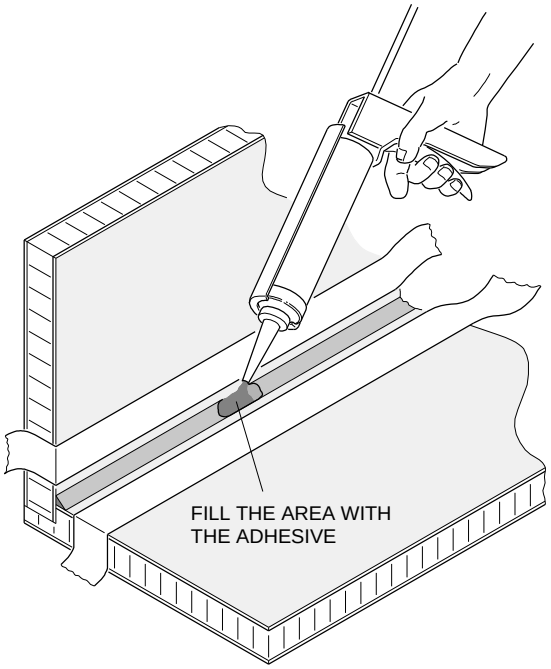
EFFECTIVITY: ALL
Sealing Joints - Repair
Figure 809





DET. A





1 DAMAGE LENGTH MUST
BE LESS THAN 1/10 LENGTH
OR 2.5 cm, WHICHEVER IS LESS.

2 DAMAGE DEPTH MUST
BE LESS THAN 1.6 mm (0.06 in)
OR 1/2 THICKNESS, WHICHEVER IS LESS.

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TASK 25-00-00-300-806-A
EFFECTIVITY: ALL

6. GENERAL BONDING AND SEALING - REPAIR

A. General

(1) This task gives the procedures to remove and replace damaged rubber seals and the procedures to bond components made of plastic, aluminum and composite material.

NOTE:
- These procedures are not applicable to the interior of the waste compartment installed in the forward and aft galleys, and in the lavatory. Also, they are not applicable to the baggage compartment linings.
- For repairs on composite material surfaces, obey the requirements of General Composite Repairs (AMM TASK 25-00-00-300-809-A/800).

(2) The repairs of bonding and seals have no damage limits, if you use the original materials and procedures as defined in this task.

(3) To replace damaged rubber seals, use one of these types of adhesives:

(a) RTV's (room temperature vulcanizing rubber) adhesives;

(b) Double-sided adhesives tape, and;

(c) PSA's (pressure sensitive) adhesives.

(4) To bond components made of plastic, aluminum and composite material with urethane, epoxy and acrylic adhesives, follow one of these procedures listed below:

NOTE: We can define two types of composite materials:
- glass composite with or without vinyl covering.
- carbon composite with or without vinyl covering.

(a) Bonding plastic surfaces to composite material.

(b) Bonding two composite materials.

(c) Bonding metallic surfaces to composite material.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-809-A/800	COMPOSITE MATERIAL - REPAIR

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

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E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Masking or flashbreaker polyester tape	For protection	1
Commercially available	Razor blades or sharp edge tool	To remove excess material	1
Commercially available	Brush or similar	To apply fairing compound to the surface	1
Commercially available	Spatula	To apply fairing compound to the surface	1
Commercially available	Cleaning cloths, shop-wipes.	For cleaning	AR
Commercially available	Nylon or Teflon wedge or paddle	For cleaning	AR
Commercially available	Sandpaper or Scotchbrite 320-400 grit or equal	To clean the bonding surface	AR

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-PRF-680	Cleaning Solvent - Commercial grade	AR
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
O-E-760	Ethanol - Commercial grade	AR
Commercially available	GE 100 Series Silicone	AR
Commercially available	DOW Silicone Adhesive	AR
Commercially available	3M Promoter 94 Adhesive Primer	AR
Commercially available	3M VHB Bonding Tape	AR
Commercially available	3M 489MP Transfer Tape	AR
Commercially available	GE PSA 529 Rubber SRC 18 (Catalyst)	AR
Commercially available	DAPCO 3303 A/B	AR
Commercially available	DP 4OO SERIES (420,460, 490)	AR
Commercially available	L-301 Adhesive	AR
Commercially available	EA-9394	AR
Commercially available	CIBA 1559 Adhesive	AR
Commercially available	DP 190	AR
Commercially available	DP 8005 Acrylic Adhesive	AR
Commercially available	Cab-O-Sil Fumed Silica Filler M-5	AR
Commercially available	Glass Cloth 104, 108, 120, 220, 7781 Weaves	AR

G. Expandable Parts

Not Applicable

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H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

I. Damaged Rubber Seals - Remove and Replace (Figure 810) (Figure 811)

SUBTASK 390-002-A

(1) To strip off the rubber seal, pull a corner or edge approximately 90° to the composite panel edge.

NOTE: Remove as much of the original seal as possible.

(2) Use a spatula or razor to remove all excess or additional adhesive from the composite surface.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(3) Wipe the surface with a clean, shop wipe soaked with clean solvent, MEK, MIK, ethanol, acetone or isopropyl alcohol to remove dirt, oil, and debris from panel.

NOTE:
- Do not allow the solvent to evaporate on the part.
- The part will be considered clean when a clean, dry shop wipe can be swiped over the surface and show no indications of dirt, oil, or debris.

(4) Take the new seal and wipe its surface with a clean, shop wipe soaked with clean solvent, ethanol or isopropyl alcohol.

NOTE: Keep the surface clean and free of contamination until it is bonded.

(5) To bond the new seal, use one of the adhesives listed below on Table 811:

Table 811 - SEAL'S ADHESIVES

ADHESIVES	COMMERCIAL PRODUCT
RTV's	GE 100 Series Silicone
	DOW Silicone Adhesive
Double-sided	3M Promoter 94 Adhesive Primer
	3M VHB Bonding tape
	3M 489MP Transfer tape
PSA's	GE PSA 529 Rubber SRC (Catalyst)
	DAPCO 3303 A/B

(6) NOTE: The steps below are applicable only to the bonding of the new seal with the use of RTV's adhesives.

Put a thin bead of RTV along the panel edge.

(7) Push the silicone seal bonding flange onto the RTV and make sure that it is adequately covered with adhesive.

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NOTE:
- If the adhesive is not visible along the entire edge, lift the seal and add additional adhesive.
- Large seals can be clamped and held for cure. Use light gauge spring clamps and use a tongue depressor or similar tool under the clamping jaws to spread the load out.
- Allow the RTV a minimum of 8 hours to cure.

(8) NOTE: The steps below are applicable only to the bonding of the new seal with the use of Double-sided adhesives.

With a brush or applicator tip, apply a uniform coat of the Promoter 94 to the panel surface where the seal will be bonded.

(9) Remove the protective tape from one side of the Double-sided adhesive tape and bond it to panel surface. Leave the backing on the forward side.

NOTE: Apply smooth uniform pressure along the length of the tape to make sure that it is correctly seated.

(10) Remove the other side of the Double-sided adhesive tape and seat the seal on it.

NOTE:
- Take care to install the seal accurately, because errors are difficult to fix without complete replacement.
- Double-sided adhesive tape can be immediately installed in the aircraft. It will not fall or fail in service, but the bond will actually become stronger over time.

(11) NOTE: The steps below are applicable only to the bonding of the new seal with the use of pressure sensitive adhesive (PSA).

To mix PSA, obey the manufacturer's instructions.

(12) With a brush, apply a thin layer on each part of the panel and the seal.

NOTE: If necessary, use a tape to mask off areas outside the bonding surface.

(13) Allow the adhesive 8-10 minutes to flash off solvents and become tack free.

NOTE: If more than 10 minutes elapses, the adhesive can be reactivated by coating one surface with a very thin layer of additional adhesive. Bond immediately after this coat.

(14) Position one edge or corner of the seal and press the rubber firmly against the panel surface.

NOTE:
- Once bonded, these items cannot be removed without damage, so take great care to insure that they are correctly positioned.
- PSA's have immediate strength and can be immediately returned to service.

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J. General Bonding - Repair (Figure 812)

SUBTASK 390-003-A

(1) Use a spatula or razor to remove all excess adhesive from each composite surface.

(2) Wipe each composite material surface with a clean, shop wipe soaked with clean solvent, ethanol or isopropyl alcohol to remove dirt, oil, and debris from panel.

NOTE: • Do not allow the solvent to evaporate on the part.

• The part will be considered clean when a clean, dry shop wipe can be swiped over the surface and show no indications of dirt, oil, or debris.

(3) Wash plastic details in mild detergent and water. Rinse in clean-fresh water. Dry with toweling.

(4) Anodized or primered aluminum surfaces where the surfaces are fresh and clean, and have been either stored in a protective bag (such as polyethylene) or freshly primered can be cleaned with solvent without additional preparation.

(5) Aluminum brackets that have been exposed should be wiped with solvent, and dried.

(6) Use grit abrasive paper and scuff the surfaces to be bonded. The Table 812 shows which grit abrasive paper you must use.

NOTE: • Move the paper in one direction causing longitudinal scratches (in one direction) on the panel surface.

• Only plastic details should then be scuffed at 90° to the original scuff marks.

Table 812 - GRIT ABRASIVE PAPER

Surface	grit abrasive paper
Plastics Details	100-320 grit abrasive paper
Composite Materials	100-400 grit abrasive paper
Metallic Materials	180-320 grit abrasive paper

(7) To mix adhesive, obey the manufacturer's instructions. The Table 813 shows the adhesives applicable to each type of bonding.

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Table 813 - BONDING ADHESIVES

TYPE OF BONDING	COMMERCIAL PRODUCT	REINFORCE-MENT	CURE TIME OF AD-HESIVE
Bond Metallic surfaces to Glass Composite	DP 4OO series (420,460, 490)	N/A	24 hrs or Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	L-301	N/A	24 hrs Warm to 60°C-65.5°C (140°F-150°F) - 2 hrs
	EA-9394	N/A	7 days
	CIBA 1559	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
Bond Metallic surfaces to Carbon Composite	DP 4OO series (420,460, 490)[2]	Cab-O-Sil Fumed Silica Filler M-5 (Glass Filler)[1] Glass Cloth 104, 108, 120, 220, 7781 Weaves (Glass Scrim Cloth)[3]	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	L-301		24 hrs Warm to 60°C-65.5°C (140°F-150°F) - 2 hrs
	EA-9394		7 days
	CIBA 1559		24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
Bond Plastic to Glass or Carbon Composite	DP 4OO series (420,460, 490)	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	L-301	N/A	24 hrs Warm to 60°C-65.5°C (140°F-150°F) - 2 hrs
	DP 190	N/A	7 days
	DP 8005 acrylic adhesive	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	CIBA 1559	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs

[1] Mix in 5% by weight of Cab-O-Sil with adhesive, or refer to note 7.

[2] Dispense the adhesive onto a mixing board or disposable mixing cup (Do not use wax or paper mixing cups-use polyurethylene or similar).

[3] Trim a single ply of glass so that if fit between the metal surface to be bonded and the carbon composite panel. Apply adhesive to one side and press glass down. Apply adhesive to mating part and install.

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Table 813 - BONDING ADHESIVES (Continued)

TYPE OF BONDING	COMMERCIAL PRODUCT	REINFORCE-MENT	CURE TIME OF AD-HESIVE
Bond Glass or Carbon Composite to Glass or Carbon Composite	DP 4OO SERIES (420,460, 490)	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	L-301	N/A	24 hrs Warm to 60°C-65.5°C (140°F-150°F) - 2 hrs
	DP 190	N/A	7 days
	DP 8005 acrylic adhesive	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs
	CIBA 1559	N/A	24 hrs Warm to 60°C-71°C (140°F-160°F) - 2 hrs

(8) Apply enough adhesive to cover the bonding surface.

NOTE:
- If there are witness holes in the plastic strip or metallic panel, place the adhesive on the composite material surface.
- To bond metallic surfaces to carbon composite with the use of a glass scrim cloth, press the glass cloth onto the adhesive and allow it to squeeze through the cloth. Add more adhesive to make sure that the opposite side of the glass is completely soaked with adhesive.

(9) Press the surfaces to be bonded onto the panel adhesive.

NOTE:
- Insure that adhesive resin can be seen "squeezing out" from all four sides.
- If you bond a metallic surfaces to carbon composite, remember that the glass cloth or glass filler will not allow you to squeeze out all of the glue, it controls the bondline to the thickness of the glass, so good pressure is essential.
- If there are witness holes in the detail, make sure that adhesive flows out of these locations.
- Do not remove excess adhesive in witness holes.
- It is acceptable to remove excess from edges, with the use of a spatula, tongue depressor or similar tool.

(10) When bonded, there must be a uniform "Bondline".

NOTE:
- The width of the adhesive used to join to surfaces is the bondline. Normally, adhesives perform better with a uniform but thin bondline.
- Bondline thickness 0.05 to 0.8 mm (0.002 to 0.030 in).

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(11) Allow the adhesive the necessary time to cure. See Table 813.

NOTE: If necessary, use clamps to hold for cure.

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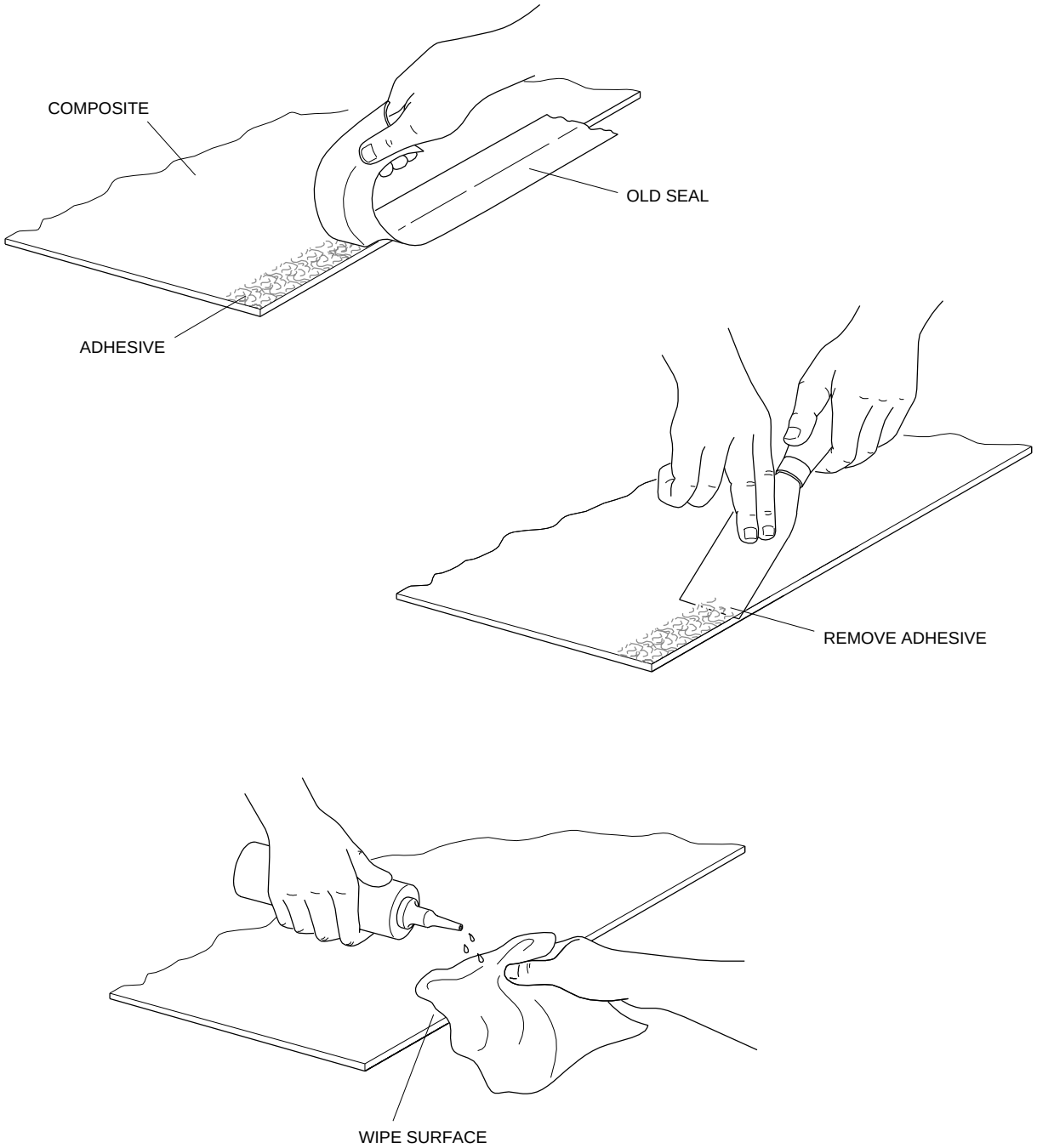
EFFECTIVITY: ALL

Damaged Rubber Seals - Remove and Replace
Figure 810



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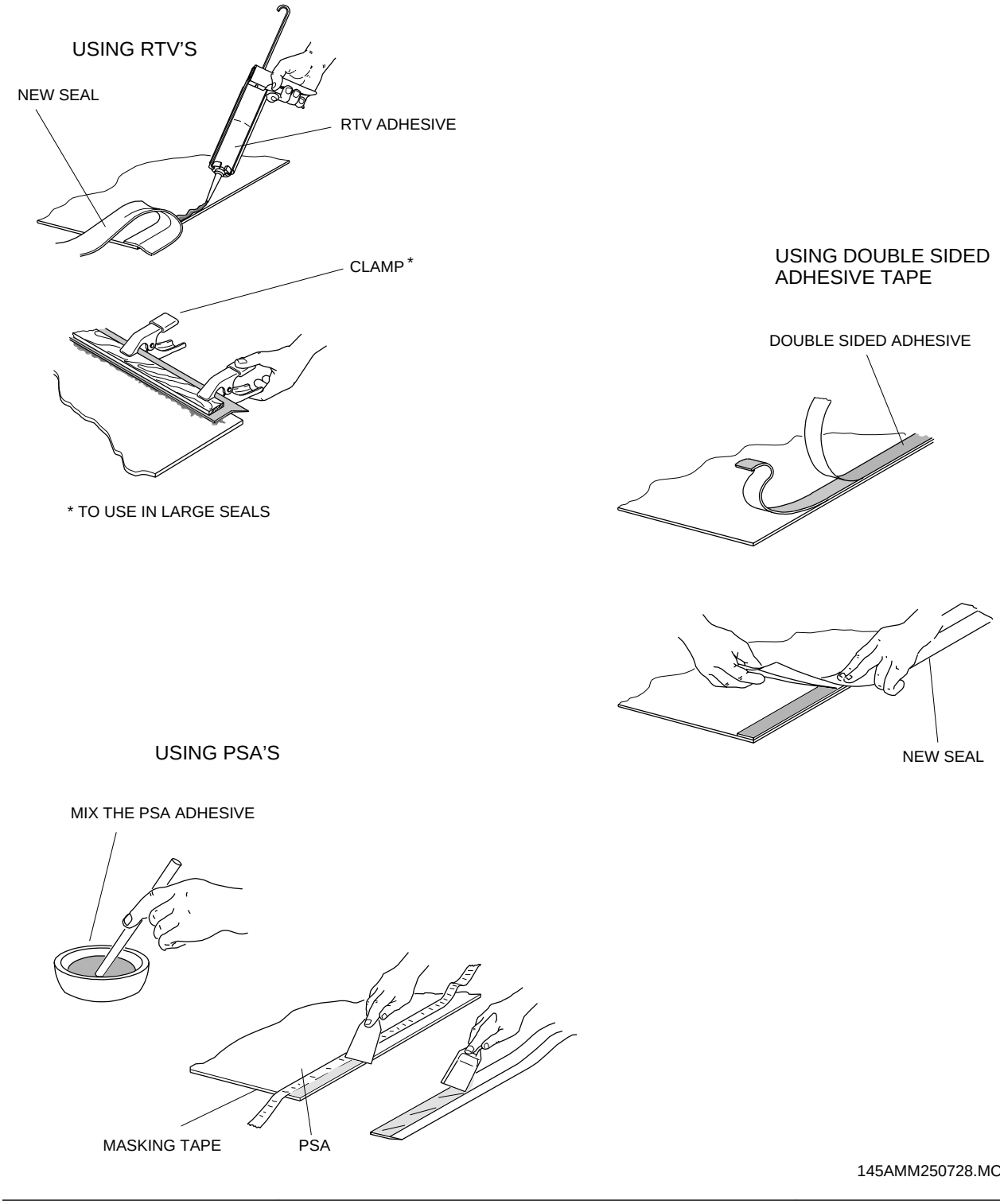
EFFECTIVITY: ALL

Damaged Rubber Seals - Remove and Replace
Figure 811



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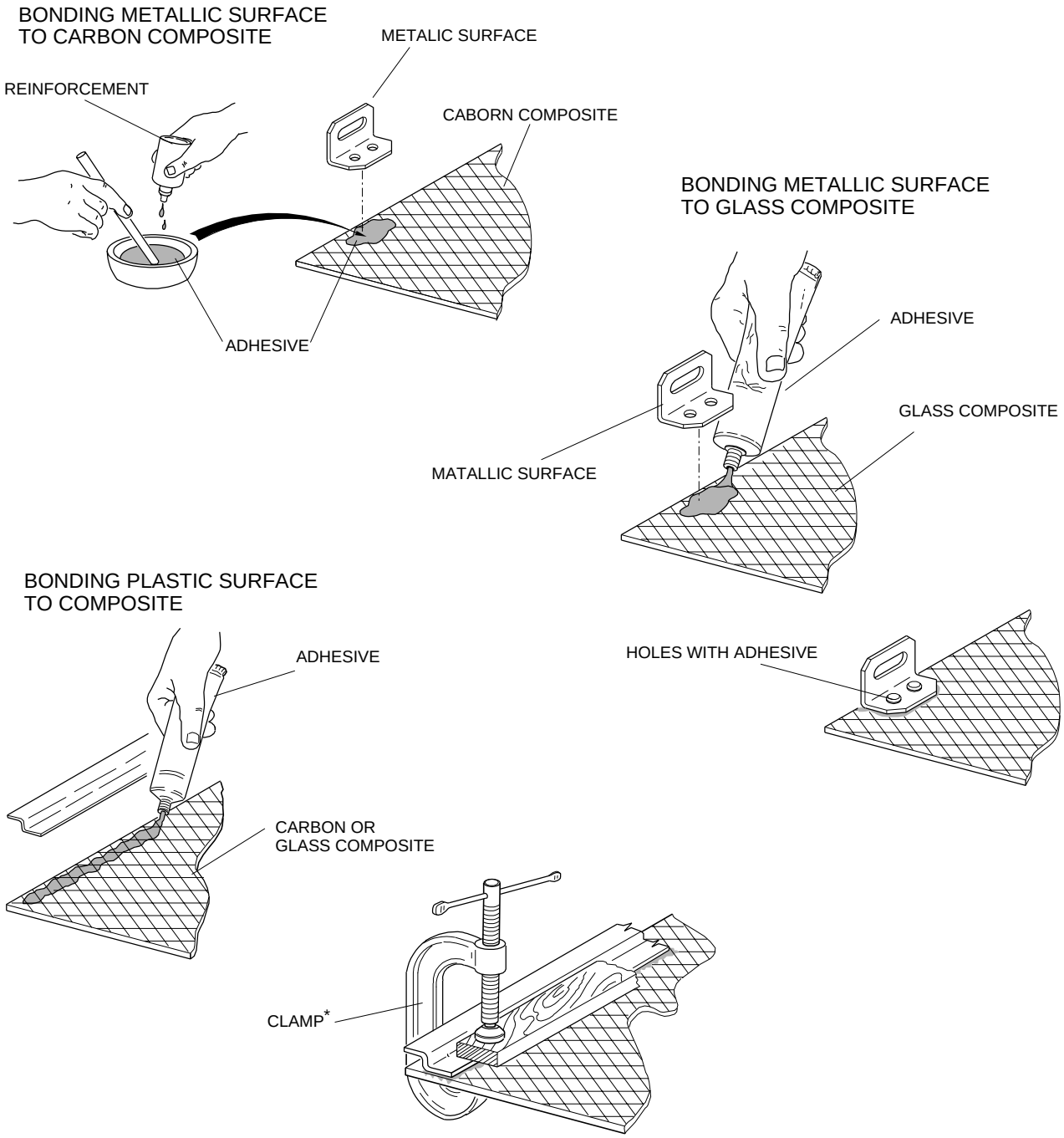
EFFECTIVITY: ALL
General Bonding - Repair
Figure 812



*TO USE IN LARGE SURFACES

145AMM250729.MCE

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TASK 25-00-00-300-807-A
EFFECTIVITY: ALL

7. NUTPLATES AND RIVNUTS - REWORK

A. General

(1) This task gives the instructions to remove and to install nutplates and rivnuts.

NOTE:
- The removal/installation of nutplates and rivnuts can be considered a rework.
- These instructions are not applicable to the baggage compartment linings.

B. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
Zone 200		Passenger cabin

C. Tools and Equipment

Not Applicable

D. Auxiliary Items

Not Applicable

E. Consumable Materials

Not Applicable

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

H. Removal

SUBTASK 000-002-A

WARNING: WEAR PROTECTIVE CLOTHING, GLOVES AND GOGGLES WHEN YOU USE CUTTING TOOLS.

(1) The nutplate can be removed from a composite panel as follows (Figure 813):

(a) CONDITION I: Use a punch and a hammer to remove the rivet heads. Thus the rivet bodies can be pushed out easily.

(b) CONDITION II: Grind the head off the rivets and use the Flathead screwdriver or equivalent pry to pop the nutplate off the surface after the rivets are cut. The rivet bodies can be pushed out with a small punch and hammer.

(c) CONDITION III: Put the drill into the rivet head and drill out them. Remove the nutplate.

(2) The rivnut can be removed as follows (Figure 814):

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(a) Put the drill into the bushing hole and drill perpendicular to the composite.

NOTE: Do not let the drill tip go more than 25% of the hole depth when the drill head is angled, or the hole can become too large to accept a new bushing or rivnut.

(b) With the aid of a bolt, push out the rivet bodies through the composite panel.

I. Installation

SUBTASK 400-002-A

WARNING: WEAR PROTECTIVE CLOTHING, GLOVES AND GOGGLES WHEN YOU USE CUTTING TOOLS.

(1) Put the nutplate into the composite panel and install the rivets.

(2) The rivnut can be installed with the tool through the composite panel (Figure 814).

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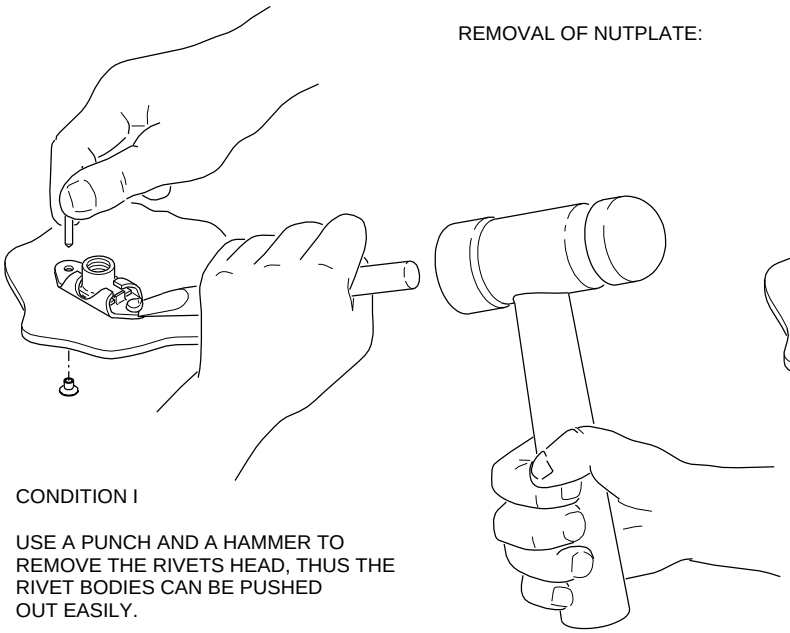
EFFECTIVITY: ALL

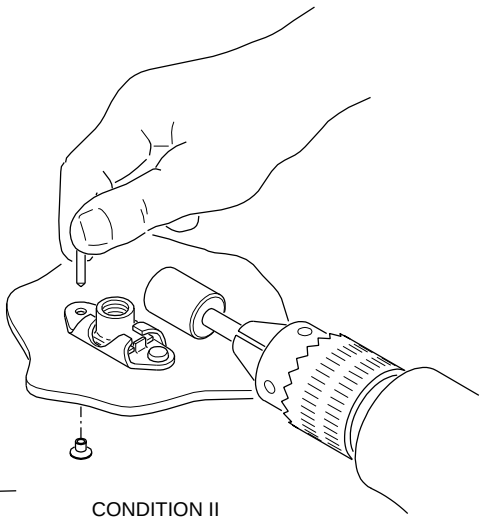
Nutplates - Removal/Installation
Figure 813

REMOVAL OF NUTPLATE:



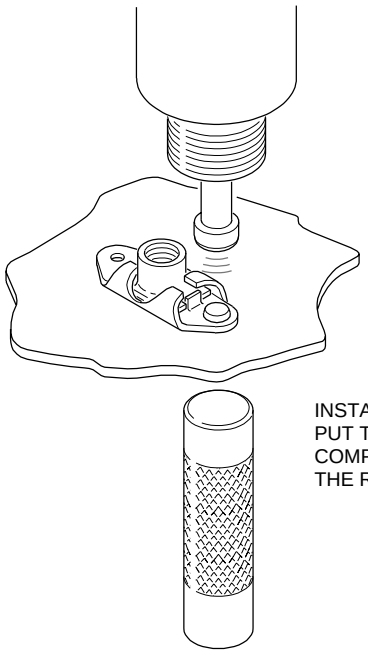
CONDITION I

USE A PUNCH AND A HAMMER TO REMOVE THE RIVETS HEAD, THUS THE RIVET BODIES CAN BE PUSHED OUT EASILY.

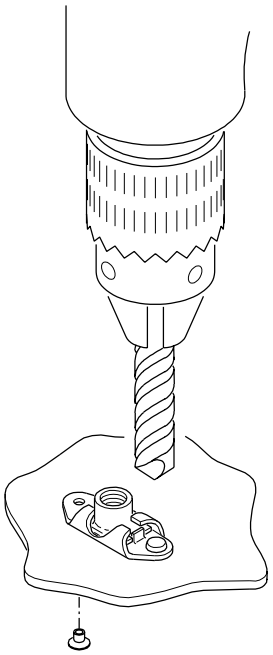


CONDITION II

GRIND THE HEAD OFF RIVETS AND USE THE FLATHEAD SCREWDRIVER OR EQUIVALENT PRY TO POP THE RIVETS ARE CUT. THE RIVET BODIES CAN BE PUSHED OUT WITH A SMALL PUNCH AND HAMMER.



INSTALLATION OF NUTPLATES:
PUT THE NUTPLATE INTO THE COMPOSITE PANEL AND INSTALL THE RIVETS.



CONDITION III

PUT THE DRILL INTO THE RIVET HEADS AND DRILL OUT THEM. REMOVE THE NUTPLATE.

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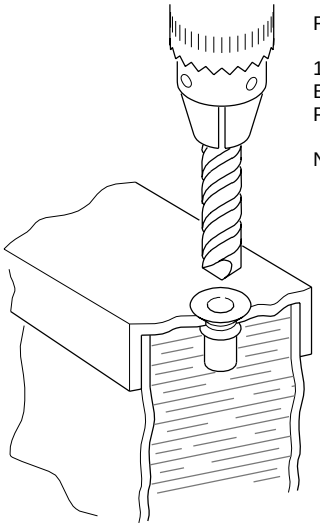
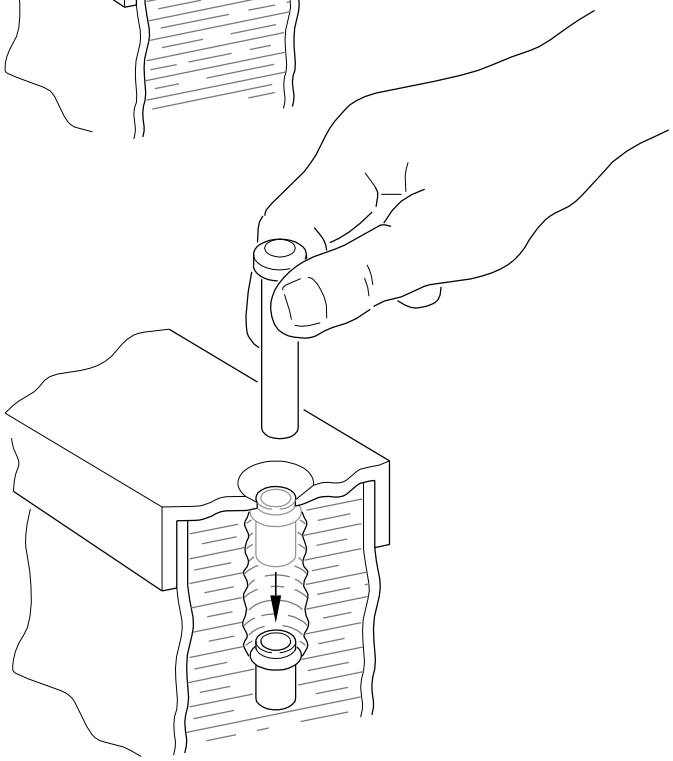
EFFECTIVITY: ALL
Rivnut - Removal/Installation
Figure 814



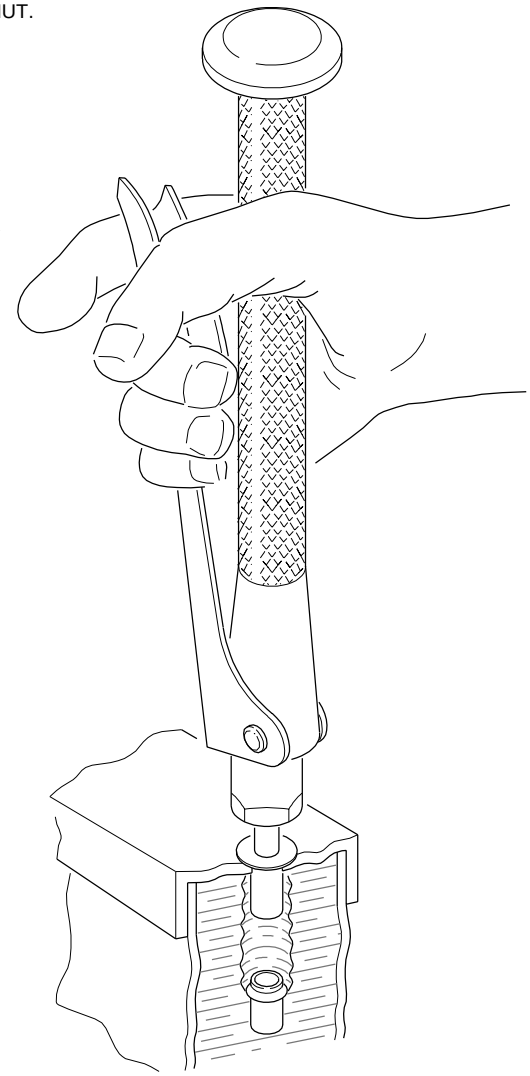
REMOVAL OF RIVNUT :

1- PUT THE DRILL INTO THE BUSHING HOLE AND DRILL PERPENDICULAR TO THE COMPOSITE.

NOTE:
DO NOT LET THE DRILL TIP GO MORE THAN 25% OF THE HOLE DEPTH WHEN THE DRILL HEAD IS ANGLED, OR THE HOLE CAN BECOME TOO LARGE TO ACCEPT A NEW BUSHING OR RIVNUT.



2- WITH THE AID OF A BOLT, PUSH OUT THE RIVET BODIES THROUGH THE COMPOSITE PANEL.



INSTALLATION OF RIVNUTS
INSTALL THE NEW RIVNUT WITH THE TOOL ILLUSTRATED ABOVE.

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TASK 25-00-00-300-808-A
EFFECTIVITY: ALL

8. PAINTING AND PRIMING OF COMPOSITE MATERIAL PARTS

A. General

(1) This task gives the procedures to repair the surfaces of composite material parts by painting and priming.

(2) To repair the surfaces of composite material parts by painting and priming, you can use the components listed below:

(a) For application of filler.

1. Alexit FST Fullgrund 343-55 (Filler), and

2. Alexit FST Hartner 345-15 (Catalyst).

(b) For application of top coat and texture coat.

1. Alexit FST Strukturlack 346-65 (Paint), and

2. Alexit FST Hartner 345-19 (Catalyst).

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	SATA JET NR95 Gravity Spray Gun, or equivalent	To spray the mixture	
Commercially available	Gun pressure ≅ 2 psi with H.V.L.P. gun	To spray the mixture	
Commercially available	Digital Scale	To weigh each component of the mixture	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper, 400-600 grit	To remove material	AR
Commercially available	Fabric tack cloth	To clean surface	AR
Commercially available	Rubber gloves	Hand protection	1

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(Continued)

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Safety goggles	Eye protection	1
Commercially available	Dust mask	To prevent skin irritations and excessive inhalation	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Commercially available	Alexit FST Fullgrund 343-55	AR
Commercially available	Alexit FST Hartner 345-15	AR
Commercially available	Alexit FST Strukturlack 346-65	AR
Commercially available	Alexit FST Hartner 345-19	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

I. Filler - Preparation and Application of the Mixture

SUBTASK 370-002-A

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL HELP. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(1) Preparation of the mixture.

(a) Refer to Table 814 to mix the components.

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Table 814 - CHARACTERISTIC AND PROPERTIES OF THE COMPONENTS OF THE MIXTURE

FILLER	CATALYST	MIXTURE PROPORTION (PARTS BY WEIGHT)		POT LIFE	DRYING TIME
		FILLER	CATALYST		
ALEXIT FST FULLGR UND 343-55	ALEXIT FST HARTNER 345-15	15	1	2 hours	2 hours 22.2°C (72°F/60% UR)

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL HELP. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(2) Preparation of the mixture.

(a) Refer to Table 815 to mix the components.

Table 815 - CHARACTERISTIC AND PROPERTIES OF THE COMPONENTS OF THE MIXTURE

PAINT	CATALYST	MIXTURE PROPORTION (PARTS BY WEIGHT)		DUST DRY [2]	ASSEM-BLY DRY [2]	HARD DRY [2]	OVEN DRY [1]
		PAINT	CATA-LYST				
ALEXIT FST STRUK TURLACK 346-65	ALEXIT FST HARTNER 345-19	6	1	1-2 hours	> 8 hours	18-24 hours	30 minutes flash-off time and 30 minutes 71°C - 82°C (160°F - 180°F)

[1] To expedite drying, apply dry air to panels.

[2] Room Temperature 22°C (72°F/60% UR).

NOTE: A ± 2 grams of either top coat or hardener is acceptable. Once mixed paint solution has approximately 4 hours of workable time under normal environmental conditions.

(3) Prepare the SATA JET NR95 gravity spray gun with the requirements below:

(a) Gravity feed cap gun with a 1.5 size head.

(b) Gun pressure ≅ 3.57 kgf/cm^2 (50.8 psi).

(c) Hose outlet pressure ≅ 6.68 kgf/cm^2 (95 psi).

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(4) Wipe panels with a fabric tack cloth to remove any dust particles.

(5) To apply the mixture on surfaces, do the steps below:

(a) Apply texture coat test on a sample piece for texture effect.

(b) Spray panels in a criss-cross pattern, approximately 304.0 mm (12 in) away from the panel.

NOTE: Criss-Cross pattern is defined as one pass along the length of panel and one pass along the width.

(c) Allow panel to dry for 24 hours or until hard, artificial drying in an oven ≤ 54.5°C (130°F).

J. Top (Fog) Coat - Preparation and Application of the Mixture

SUBTASK 370-003-A

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL HELP. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(1) Inspection filler painted panels:

(a) Inspect filler painted panels for "runs" or dust particles.

(b) Sand lightly as necessary to remove dust particles with 400-600 grit sandpaper.

(c) Inspect edges for any holes or porosity. If necessary, fill by filling and fairing process AMM TASK 25-00-00-300-801-A/800.

(2) Preparation of the mixture:

(a) Refer to Table 815 to mix the components.

(3) Prepare the SATA JET NR95 gravity spray gun with the requirements below:

(a) Gravity feed cap gun with a 1.5 size head.

(b) Gun pressure ≅ 3.57 Kgf/cm ^{2} (50.8 psi).

(c) Hose outlet pressure ≅ 6.68 kgf/cm ^{2} (95 psi).

(4) Wipe panels with a fabric tack cloth to remove any dust particles.

(5) To apply the mixture on surfaces, do the steps below:

(a) Apply texture coat test on a sample piece for texture effect.

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(b) After gun pressure has decreased, spray panels in one criss-cross pattern and one criss coat to achieve the texture pattern.

(c) Allow panel to dry for 20-30 minutes or until glossy finish of the painted panel appears to have dulled.

K. Texture Coat - Preparation and Application of the Mixture

SUBTASK 370-004-A

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL HELP. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(1) Preparation of the mixture.

(a) Refer to Table 815 to mix the components.

(2) Prepare the SATA JET NR95 gravity spray gun with the requirements below:

(a) Gravity feed cap gun with a 1.5 size head.

(b) Gun pressure ≅ 0.14 kgf/cm^2 (2 psi) with H.V.L.P gun or gun pressure ≅ 1.40 kgf/cm^2 (20 psi) without H.V.L.P gun.

(c) Hose outlet pressure ≅ 6.68 kgf/cm^2 (95 psi).

(3) Wipe panels with a fabric tack cloth to remove any dust particles.

(4) To apply the mixture on surfaces, do the steps below:

(a) Apply texture coat test on a sample piece for texture effect.

(b) After gun pressure has decreased, spray panels in one criss-cross pattern and one criss coat to achieve the texture pattern.

(c) Allow panel to dry for 24 hours or until hard. Artificial drying may be performed to expedite time.

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L. Painting and Priming of Composite Material Parts - Repairs

SUBTASK 370-005-A

WARNING:

- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, WASH THOROUGHLY WITH WATER. IF CHEMICAL GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND SEEK MEDICAL HELP. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(1) For all types of damage, sand down panel to filler coat with 400-600 grit sandpaper.

(2) For damage with holes or pits, fill by filling and fairing process AMM TASK 25-00-00-300-801-A/800.

(3) Apply the filler coat, top (Fog) coat, and texture coat as described in steps I, J, and K of this task.

NOTE: To blend newly painted surface with surrounding area, let the paint dry and rub with glass cleaner to remove slightly sand surface finish.

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TASK 25-00-00-300-809-A
EFFECTIVITY: ALL

9. COMPOSITE MATERIAL - REPAIR

A. General

(1) This task gives the procedures to repair composite material panels.

NOTE: These procedures are not applicable to the interior of the waste compartment installed in the forward and aft galleys, and in the lavatory. Also, they are not applicable to the baggage compartment linings.

WARNING:
- **WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.**
- **IF CHEMICAL CONTACT OCCURS, FULLY WASH WITH WATER. IF CHEMICAL SPLASHS INTO YOUR EYES, FLUSH THE EYES WITH LARGE QUANTITIES OF WATER AND GET MEDICAL AID. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(2) To repair the surfaces of parts or panels, you must obey these conditions:

(a) The most common construction is a sandwich of two laminated skins with a nonmetallic sandwich core between them.

(b) This task contains repairs for the laminated skins and on the sandwich core between them.

(c) The repairs can be done if the total damage area in the same construction (that is, in total sidewall panels, in total skirting panels, in total ceiling panels, in total parts of the windscreen, in total components of the wardrobe, in total components of the galley, etc.) can not be larger than 103.0 cm^2 (16 in^2).

(d) NOTE: The operator must control the total area of repair on each panel. Embraer suggests that you have a form where to control all repairs made on each panel. Refer an example of such a form in Table 816.

Table 816 - DAMAGE AREA CONTROL

COMPONENTS	DAMAGE AREA	DATE OF RE-PAIR	TOTAL DAMAGE AREA
Sidewall Panel (231 ALW)	38.7 cm^2 (6 in^2)	May 25/99	38.7 cm^2 (6 in^2)
Sidewall Panel (231 BLW)	64.5 cm^2 (10 in^2)	Jul 01/00	103.0 cm^2 (16 in^2)
Sidewall Panel (231 ALW)	3.2 cm^2 (0.5 in^2)	Jul 15/00	106.2 cm^2 (16.2 in^2)[1]

[1] This repair is larger than the permitted size (103.0 cm^2 (16 in^2)). Then, you must replace the panel.

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CAUTION: THIS TASK CONTAINS REPAIR PROCEDURES ONLY FOR CLASS 1 AND CLASS 2 DAMAGE.

(3) The damage to composite material panels is put into three classes to make its identification easier:

(a) Class 1: Dents, scars, scratches, or erosion in the facings. No punctures and fractures are permitted in the panel damaged by dents, scars and scratches at the same time. The damage cannot go into the panel facing.

(b) Class 2: Fractures and punctures that are through one facing only. The core can be damaged but it cannot be perforated completely. The damage cannot affect the opposite facing.

(c) Class 3: Holes and punctures that extend completely through the sandwich. The two facings and the core are affected. In this case, the panel must be replaced.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR
AMM TASK 25-00-00-300-802-A/800	DECORATIVE MATERIALS - REPAIR
AMM TASK 25-00-00-300-808-A/800	PAINTING AND PRIMING OF COMPOSITE MATERIAL PARTS

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Balance with precision in grams ± 1.0 gram	To weigh the fiberglass plies	
Commercially available	Heat gun	To heat the filled area	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Paint brush	To apply the resins	AR
Commercially available	Sandpaper 120-240 grit	To remove the paint	AR
Commercially available	Sandpaper 320-400 grit	To remove the paint	AR
Commercially available	Shop Wipes	For cleaning	AR

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(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Dust mask	To prevent skin irritations and excessive inhalation	AR

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
O-E-760	Ethanol - Commercial grade	AR
MIL-C-9084	8 Harness Satin 7781 - Dry fiberglass	AR
Commercially available	Resolution resin 828 with Epicure 3323 catalyst	AR
Commercially available	Masking tape	AR
Commercially available	Epoxy Adhesive - L-301	AR
Commercially available	DP-420 Adhesive	AR
Commercially available	Laminating resin - Epocast 50-A1 with 946 or 9449	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Wherever necessary

I. Dents, Scratches and Resin Erosion (Damage Class 1)

SUBTASK 340-010-A

(1) NOTE: Use these procedures to make repairs on the laminated skins of sandwich honeycomb panels.

Abrade the surface with a 120-240 grit sanding paper.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(2) Clean the surface with Isopropyl alcohol or similar.

(3) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no signs of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(4) With masking tape, mask the area adjacent to the repair to protect it.

(5) Use the filling and fairing processes to fill the void/dent/scratches AMM TASK 25-00-00-300-801-A/800.

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J. Delamination (Damage Class 1)

SUBTASK 340-011-A

(1) Use these procedures to make delamination repairs on the laminated skins of sandwich honeycomb panels and between the plies of the skin.

NOTE: To repair local delamination, bond the facing to the sandwich with a structural adhesive or laminating resin.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(2) Clean the surface with Isopropyl alcohol or similar.

(3) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no signs of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(4) With masking tape, mask the area adjacent to the repair to protect it.

(5) For repair with laminating resin, do as follows:

(a) Use these approved laminate resins:

1 Epocast 50-A1/946 or;

2 Epocast 50-A1/9449 or;

3 Resolution 828 - Epicure 3223.

(b) NOTE: Obey the manufacturer's instructions to mix quantities of the laminating resin compound.

Mix sufficient resin to make the repair.

(c) Use a spatula or brush to apply the resin to the delamination and the core.

(d) Make sure that the ply is wet on the surface.

(e) To push the ply into position use light pressure and cotton rags or gloves to make the surface smooth.

(f) Remove excess resin with a dry shop-wipe.

(g) Let the resin set for sufficient time before you sand it.

NOTE: Obey the manufacturer's information about the cure time for each material.

(h) Apply light pressure with a fingernail. The resin must be cured without a depression in the shape of a crescent.

(i) After the cure time, remove the masking tape.

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NOTE: To accelerate the curing time, first air-dry to touch, then raise temperature to 50°C (120°F) with the aid of an infrared lamp or oven for 5 to 30 minutes. Raise the temperature to 65°C (150°F) for 2 hours.

(j) Refinish the repair as applicable (AMM TASK 25-00-00-300-808-A/800 or AMM TASK 25-00-00-300-802-A/800).

(6) For repair with adhesive or potting compound, do as follows:

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(a) Clean the surface with Isopropyl alcohol or similar.

(b) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no indications of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(c) NOTE: This repair gives more strength, but it is heavier.

Use these approved products:

1 L-301 adhesive or;

2 DP- 420.

(d) NOTE: Obey the manufacturer's instructions to mix quantities of the edge filling compound.

Mix enough resin to make the repair.

(e) Use a brush or spatula to apply adhesive to the damaged parts.

(f) To push the ply into position, use light pressure and cotton rags or gloves to make the surface smooth.

(g) Clamp parts together as necessary to make sure that the contact is good.

(h) Let the resin set for sufficient time before you sand it.

NOTE: Obey the manufacturer's information about the cure time for each material.

(i) Apply light pressure with a fingernail. The adhesive must be cured without a depression in the shape of a crescent.

(j) After the cure time, remove the masking tape.

(k) Refinish the repair as applicable (AMM TASK 25-00-00-300-808-A/800 or AMM TASK 25-00-00-300-802-A/800).

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K. Scars/Scratches and Surface Abrasion (Damage Class 1)

SUBTASK 340-012-A

(1) NOTE: Use these procedures to make repairs on the plies of sandwich panels.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(2) Clean the surface with Isopropyl alcohol or similar.

(3) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no signs of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(4) With masking tape, mask the area adjacent to the repair to protect it.

(5) Abrade the surface with a 320 grit sanding paper.

(6) For small damaged areas use the filling and fairing repair (AMM TASK 25-00-00-300-801-A/800).

(7) Let the resin set for sufficient time before you sand it.

NOTE: Obey the manufacturer's information about the cure time for each material.

(8) After the cure time, remove the masking tape.

(9) Sand the filler edges with the surrounding panel.

(10) Refinish the repair as applicable (AMM TASK 25-00-00-300-808-A/800 or AMM TASK 25-00-00-300-802-A/800).

L. Erosion (Damage Class 1)

SUBTASK 340-013-A

(1) NOTE: Use these procedures to make repairs on the plies of sandwich panels.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(2) Clean the surface with Isopropyl alcohol or similar.

(3) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no signs of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(4) With masking tape, mask the area adjacent to the repair to protect it.

(5) Abrade the surface with 320 grit sanding paper.

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(6) Obey the manufacturer's instructions to mix quantities of the L-301 adhesive.

(7) Use a brush or spatula to apply adhesive to the damaged parts.

(8) Use a spatula or a razor blade to remove the excess adhesive.

(9) Let the resin set for set before you sand it.

NOTE: Obey the manufacturer's information about the cure time for each material.

(10) Apply light pressure with a fingernail. The adhesive must be cured without a depression in the shape of a crescent.

(11) After the cure time, remove the masking tape.

(12) Sand the filler edges to make it level with the surrounding panel.

(13) Refinish the repair as applicable (AMM TASK 25-00-00-300-808-A/800 or AMM TASK 25-00-00-300-802-A/800).

M. Scarf Repair - Solid Plug Repair (Class 2) (Figure 815) (Figure 816)

SUBTASK 340-014-A

CAUTION: THE AREA OF EACH REPAIR MUST NOT BE LARGER THAN 1 in^2. THE NUMBER OF REPAIRS FOR EACH COMPONENT MUST NOT BE MORE THAN TWO PER 1 ft^2.

(1) This repair is applicable to the overhead bins, bulkheads, galley panels, wardrobe panels, ceiling panels and sidewall panels.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(2) Clean the surface with isopropyl alcohol or similar.

(3) Dry the surface with a clean dry shop wipe. Make sure that there is no remaining contamination on it.

NOTE:
- The part will be clean when you pass a clean, dry shop wipe on the surface and the shop wipe shows no signs of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

(4) With masking tape, mask the area adjacent to the repair to protect it.

WARNING: WEAR DUST FILTER DURING ALL OPERATIONS.

(5) Cut out the damaged area into an oval or round shape.

NOTE: Rectangular or square shapes with rounded corners are satisfactory.

(6) Grind the panel facing at the angle or taper. The width of the scarf must be 100 times (minimum) the facing thickness.

NOTE: Make sure that there is no debris and particles on the work area.

(7) Cut a section of core to match the repair area.

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(8) Use a vacuum or compressed air to remove loose debris and particles from the work area.

(9) Put the core into the panel flush against the opposite facing.

NOTE: The core must fit correctly into the panel.

(10) Bond the core into position with potting compound (use DP-420 or L-318 adhesives).

(11) Replace the upper surface facing with wet lay-up as follows:

NOTE: Plies must be larger than the steps cut into the panel. Overlap should be 2 mm (0,08 in) minimum. Top ply must extend 12.7 mm (0.5 in) onto the perimeter cut.

(a) If applicable, remove the paint from the area where the repair will be installed.

NOTE:
- Mask off the surface to keep the original paint intact out the repair and the adjacent border.
- Remove a minimum of 25 mm (1.0 in) of paint on the border adjacent to the damage where the repair will be made.
- Be careful not to go through the first layer when you sand the area.
- Make sure that all fillers or primers are also removed and the glass surface is bare.

(b) Trim 2 or 3 fiberglass plies to cover the damaged as necessary for the repair and make sure that the top ply must overlap a minimum of 12.7 mm (0.5 in).

NOTE: Put the fiberglass pieces on a table with release paper to prevent contamination of the resin on the shop benches.

(c) Weigh the fiberglass plies. Use this figure as the start weight for resin to be mixed for repair (Table 817).

Table 817 - LAMINATING RESIN/CATALYST

Laminating Resin : Catalyst (by weight)
100:10

(d) Mix Resolution Resin 828 (laminating resin) and Epicure 3223 (catalyst). Resin mixture must be such that a complete saturation of the glass occurs.

(e) With a paint brush, apply a small quantity of the resin onto the repair area.

(f) With a paint brush, apply a small quantity of resin on the first fiberglass ply and repair border 12.7 mm (0.5 in) past the damage. Use of a roller pin or dowel will help distribute the resin evenly on the fiberglass ply.

(g) Install the first fiberglass ply with resin on the damaged panel.

(h) Use the resin and brush to distribute the resin and smooth the panel surface as necessary.

(i) Install subsequent plies as necessary.

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(j) Apply more resin onto the surface of the panel. Make sure that the panel is completely soaked in the resin solution.

(k) Use of a nylon or Teflon paddle to help seat the plies onto the panel is recommended.

NOTE: Apply pressure from one corner of the repair and work outward to prevent air bubbles.

(l) Let the repair cure for a minimum of 6 hours.

NOTE: To accelerate the curing time, first air-dry to touch, then raise temperature to 50°C (120°F) with the aid of an infrared lamp or oven for 5 to 30 minutes. Raise the temperature to 65°C (150°F) for 2 hours.

(12) Fair the surface. Refer to AMM TASK 25-00-00-300-801-A/800.

(13) After the filler cure time, remove the masking tape.

(14) Sand the filler edges with the surrounding panel.

(15) Refinish the repair as applicable (AMM TASK 25-00-00-300-808-A/800 or AMM TASK 25-00-00-300-802-A/800).

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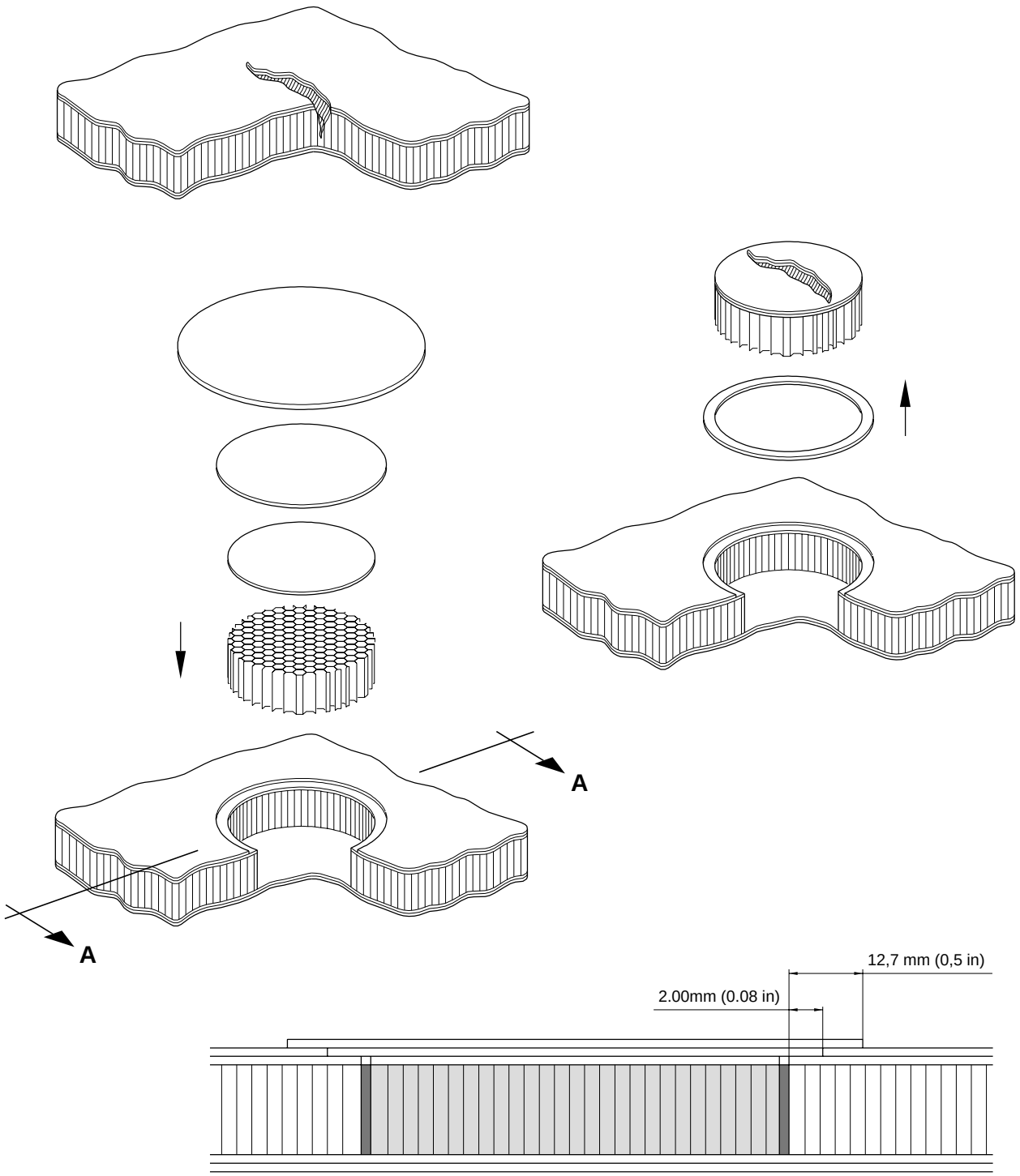
EFFECTIVITY: ALL
Scarf Repair
Figure 815



SECTION A-A

145AMM250653.MCE A

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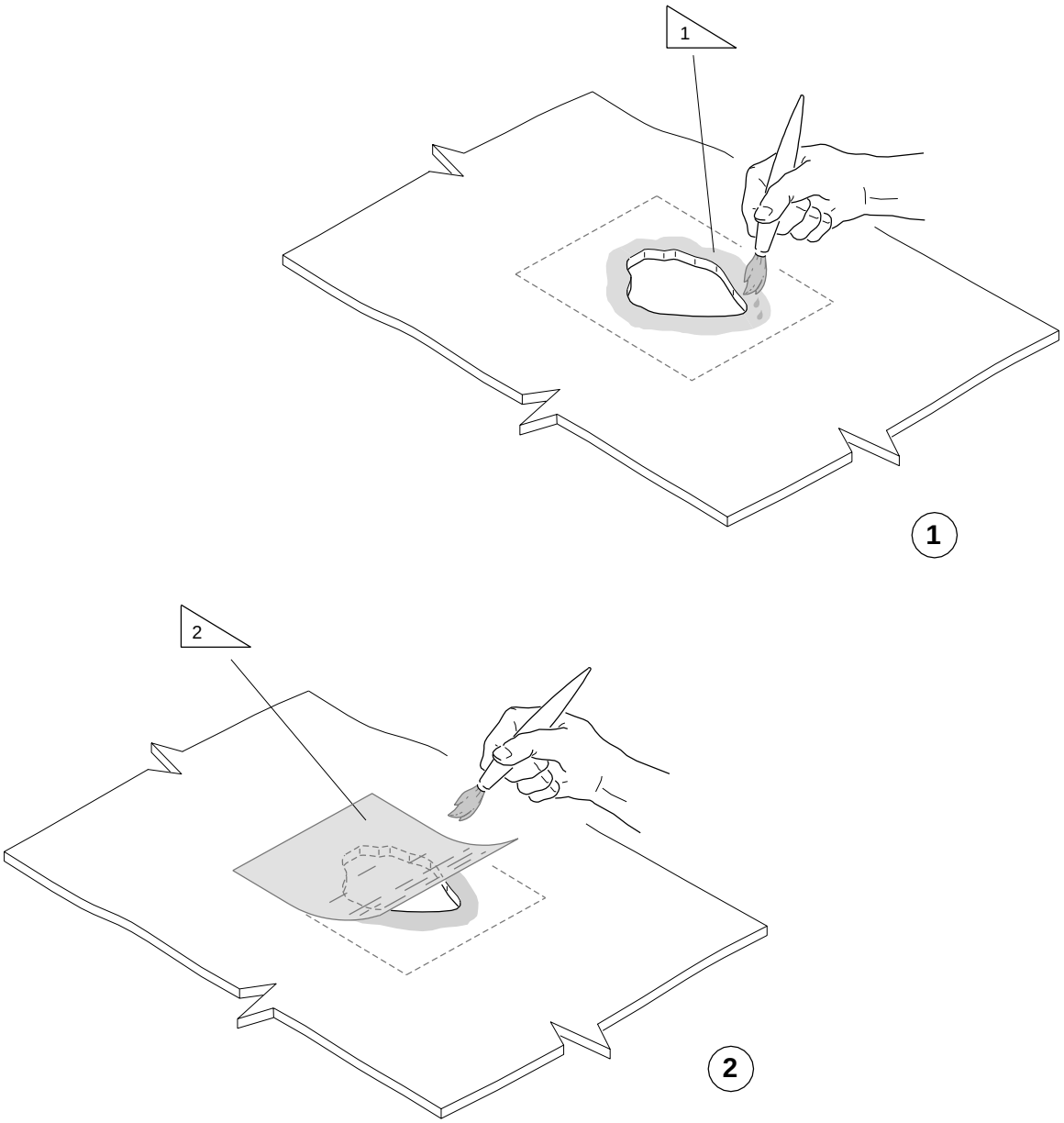
EFFECTIVITY: ALL
Wet-lay Up
Figure 816 - Sheet 1



1 APPLY RESOLUTION RESIN 828 AND EPICURE 3223 ALL AROUND THE DAMAGE.

2 INSTALL FIBERGLASS PLY COATED WITH RESOLUTION RESIN 828 AND EPICURE 3223.

145AMM250716.MCE A

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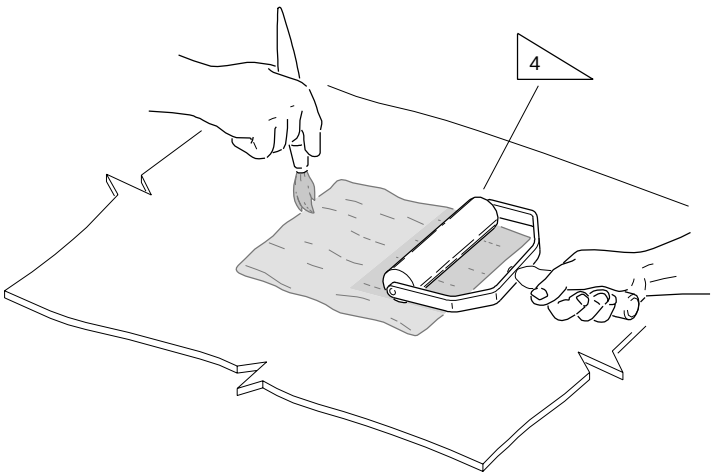
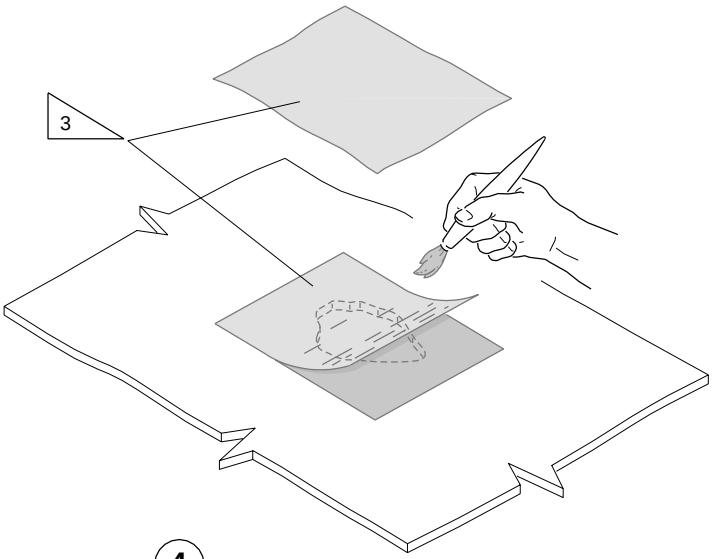
EFFECTIVITY: ALL
Wet-lay Up
Figure 816 - Sheet 2

3 INSTALL FIBERGLASS PLIES COATED WITH RESOLUTION RESIN 828 AND EPICURE 3223.

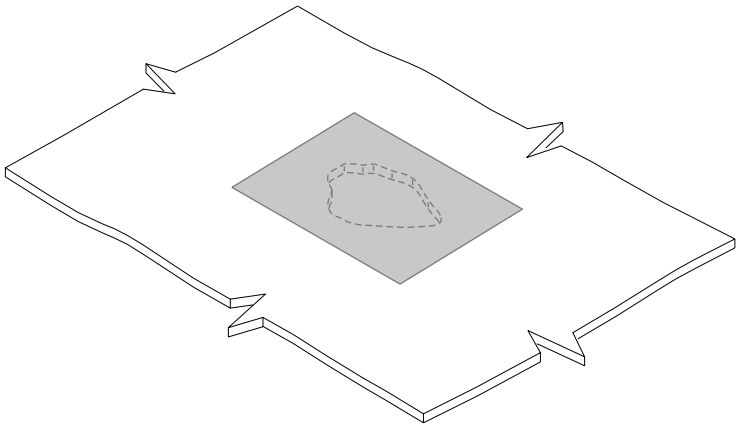
4 USE A ROLLER PIN OR DOWEL TO DISTRIBUTE THE RESIN ON THE FIRST FIBERGLASS PLY.



3



4



5

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TASK 25-00-00-300-810-A
EFFECTIVITY: ALL

10. METAL - FACED LAMINATE REPAIRS

A. General

(1) These repair procedures are applicable when a damage occurs in the Forward Baggage Compartment Bulkhead and the damage is classified as follows:

These panels are made of AL 2024-T3.

(a) Class 1: Dents, scars, scratches, or erosion in the facings. No punctures and fractures are permitted to occur in the panel damaged by dents, scars and scratches simultaneously. The damage cannot penetrate the panel facing.

(b) Class 2: Fractures and punctures that are through one facing only. The core can be damaged but it cannot be perforated completely. The damage cannot affect the opposite facing.

(2) For multiple repair, the sum of the repaired area must be less than 10322.0 mm ^{2} (16 in^2). If the damage extension is more than this limit, the panel must be replaced.

(3) If the damage extension is not more than 6.35 mm (0.25 in), repair the damage. Refer to the Filling and Fairing Process AMM TASK 25-00-00-300-801-A/800.

WARNING:
- **WEAR MASKS WHILE YOU PREPARE THE RESIN. THE GASES IT GIVES OFF ARE A POTENTIAL HEALTH HAZARD.**
- **WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES AND CLOTHES WHEN YOU CUT AND SAND COMPOSITE MATERIALS.**
- **HEAT, FIRE OR SPARKS CAN CAUSE AN EXPLOSION. USE EXPLOSION-PROOF EQUIPMENT WHEN YOU PERFORM THESE REPAIRS. NONCOMPLIANCE CAN CAUSE INJURY TO PERSONNEL.**
- **IT IS DANGEROUS TO BREATH VAPORS OR LET SOLVENT TOUCH SKIN OR GO INTO EYES. WEAR NEOPRENE GLOVES WITH COTTON LINERS, PROTECTIVE CLOTHING, AND EYE GOGGLES.**
- **IF CHEMICAL CONTACT OCCURS, WASH FULLY WITH WATER.**
- **IF CHEMICAL SPLASH GETS INTO YOUR EYES, FLUSH EYES WITH LARGE QUANTITIES OF WATER AND GET MEDICAL AID. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA.**

(4) To make the repairs, refer to the list above and be careful when you do the task.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR
AMM TASK 25-00-00-300-802-A/800	DECORATIVE MATERIALS - REPAIR

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(Continued)

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-808-A/800	PAINTING AND PRIMING OF COMPOSITE MATERIAL PARTS

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Heat gun	To heat the field repair	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper, 320 grit	To sand the surface	AR
Commercially available	Shop wipe	To clean the surface	AR
Commercially available	Spatula	To remove the excess material	AR
Commercially available	Dust Mask	To prevent skin irritations and excessive inhalation	AR
Commercially available	Rubber gloves	Hand protection	AR
Commercially available	Safety goggles	Eye protection	AR

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
TT-I-735	Isopropyl Alcohol	AR
L-301	Epoxy Adhesive	AR
Commercial available	masking tape	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Baggage Compartment/Lavatory

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I. Repair to Minor Defects (Figure 817)

SUBTASK 350-002-A

WARNING: SANDING GIVES OFF A FINE DUST THAT CAN CAUSE SKIN IRRITATIONS. AN EXCESSIVE AMOUNT OF THIS DUST CAN CAUSE INJURY TO YOUR EYES. OBEY THE PRECAUTIONS FOR SKIN AND RESPIRATION PROTECTION.

(1) This repair is applicable to class-1 damage and when it is longer than 6.35 (0.25 in).

(2) If the damage is more than 10323.0 mm^2 (16.0 in^2), this repair procedure is not applicable.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(3) Wipe the surface with isopropyl alcohol to remove all contamination. Use a dry shop wipe to remove the damp.

(4) Use a polyester tape to mask areas out of the repair.

(5) Use a No. 320 sandpaper to abrade the surface lightly.

(6) Fill the repaired area with these adhesive materials:

NOTE:
- L-301 epoxy adhesive.
- EA-9394 (alternative).
- Adhesive per MMM-A-132 -Type I or II cl 2 or 3 (alternative).

(7) Use a spatula to remove the excess adhesive. The maximum thickness of the adhesive must be 2.0 mm (0.079 in).

CAUTION: OBEY THE MANUFACTURER'S INSTRUCTIONS TO MIX THE EPOXY ADHESIVE COMPOUND.

(8) If it is necessary to decrease the cure time, apply heat to the repaired area with a heat gun at 60°C (140°F) to 71°C (160°F) for 1 hour.

(9) After the cure time, remove the masking tape.

(10) Lightly sand and fair the filler edges with the surrounding panel.

(11) Refinish the repaired area.

For damage on the Lavatory side of the Forward Baggage Compartment Bulkhead, install the Tedlar. Refer to AMM TASK 25-00-00-300-802-A/800.

For damage on the Baggage Compartment side of the Forward Baggage Compartment Bulkhead, paint the panel. Refer to AMM TASK 25-00-00-300-808-A/800.

J. General Repair for Punctures (Figure 817)

SUBTASK 350-003-A

WARNING: SANDING GIVES OFF A FINE DUST THAT CAN CAUSE SKIN IRRITATIONS. AN EXCESSIVE AMOUNT OF THIS DUST CAN CAUSE INJURY TO YOUR EYES. OBEY THE PRECAUTIONS FOR SKIN AND RESPIRATION PROTECTION.

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(1) This repair is applicable to class-2 damage and when it is longer than 6.35 mm (0.25 in).

(2) If the damage extension is longer than 10323.0 mm^2 (16.0 in^2), this repair procedure is not applicable.

(3) Use an angle motor or similar grinding tool to remove raised edges of the metal away.

CAUTION: DO NOT LET THE SOLVENT DRY ON THE PANEL.

(4) Wipe the surface with isopropyl alcohol to remove all contamination. Use a dry shop wipe to remove the damp.

(5) Use a polyester tape to mask areas out of the repair.

(6) Use a No. 320 sandpaper to abrade the surface lightly.

(7) Fill the repaired area with these adhesive materials:

NOTE:
- L-301 epoxy adhesive.
- EA-9394 (alternative).
- Adhesive per MMM-A-132 -Type I or II cl 2 or 3 (alternative).

(8) Use a spatula to remove the excess adhesive. The maximum thickness of the adhesive must be 2.0 mm (0.079 in).

CAUTION: OBEY THE MANUFACTURER'S INSTRUCTIONS TO MIX THE EPOXY ADHESIVE COMPOUND.

(9) If it is necessary, to decrease the cure time apply heat to the repaired area with a heat gun at 60°C (140°F) to 71°C (160°F) for 1 hour.

(10) After the cure time, remove the masking tape.

(11) Lightly sand and fair the filler edges with the surrounding panel.

(12) Refinish the repaired area.

For damage on the Lavatory side of the Forward Baggage Compartment Bulkhead, install the Tedlar. Refer to AMM TASK 25-00-00-300-802-A/800.

For damage on the Baggage Compartment side of the Forward Baggage Compartment Bulkhead, paint the panel. Refer to AMM TASK 25-00-00-300-808-A/800.

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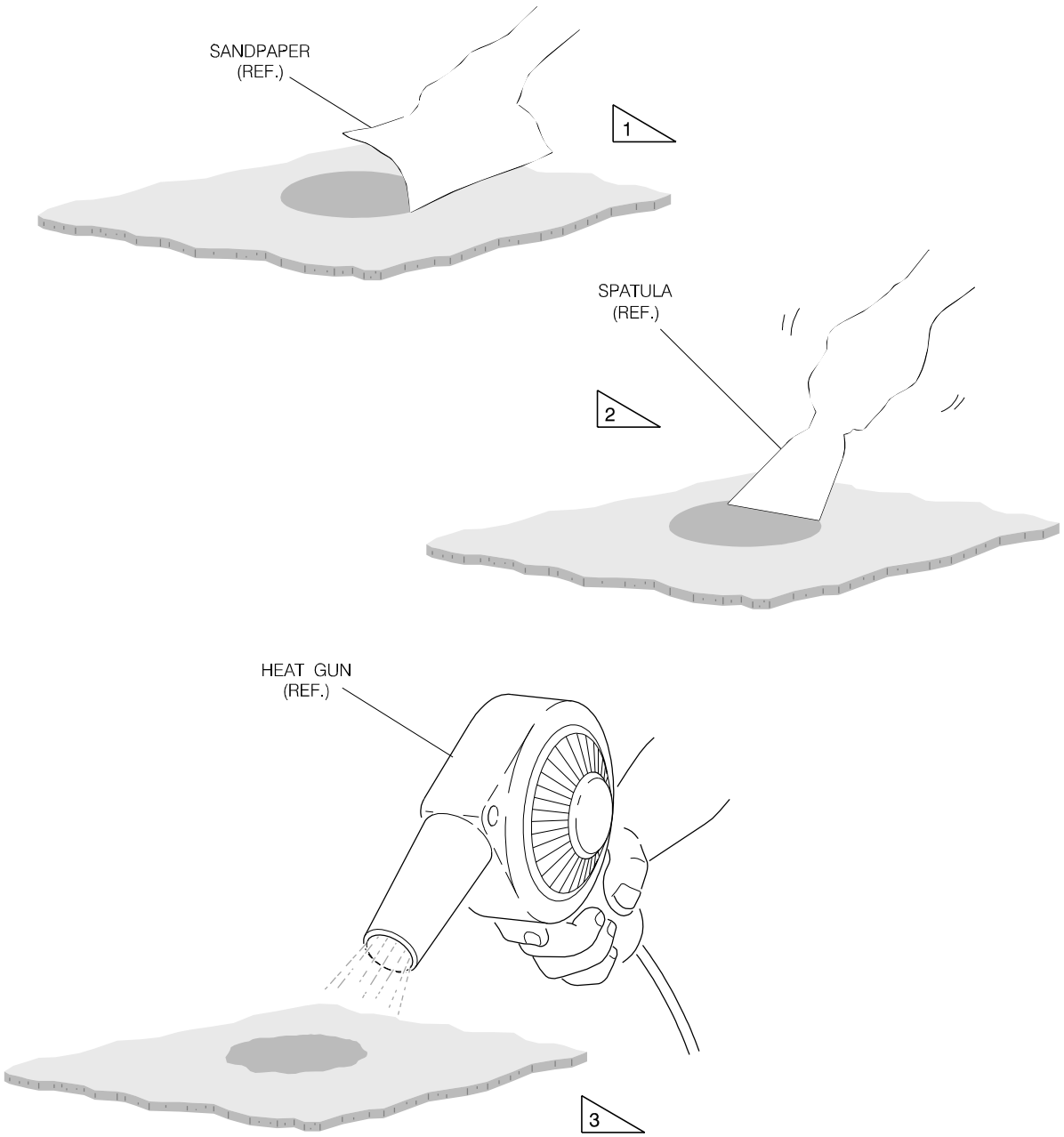
EFFECTIVITY: ALL

Faced Laminated Repair
Figure 817



1 USE THE SANDPAPER TO ABRADE THE SURFACE LIGHTLY.

2 USE A SPATULA TO APPLY AND REMOVE THE EXCESS ADHESIVE.

3 HEAT THE REPAIRED AREA WITH A HEAT GUN.

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TASK 25-00-00-300-811-A
EFFECTIVITY: ALL

11. INSERT - REWORK

A. General

(1) This task gives the instructions to remove, replace and relocate the inserts.

(2) An insert removal and installation in the same location is a replacement.

(3) The movement of an insert to outside the original insert potting diameter is a relocation.

(4) This task will also show the repotting an insert after a pull-out of the initial insert.

(5) For rework, replament and relocation, curing time is necessary. There are different curing times for each type of materials used.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-00-00-300-801-A/800	FILLING AND FAIRING PROCESS - REPAIR
AMM TASK 25-00-00-300-809-A/800	COMPOSITE MATERIAL - REPAIR

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Shur-Lok Corp	SLT 600G Tool	Guide Tool	
Products Research, Inc.	Sealant Gun, Pneumatic - Model 250	To apply the sealant	
Commercially available	Soldering iron	To heat the insert	
Commercially available	Pneumatic wrench	To install and remove the bolt into from the insert	
Commercially available	Vacuum or dry compressed air	To remove particles from the hole	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Shop Wipes	For cleaning	AR
Commercially available	Spatula	To remove the excess compound from the surface	1

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(Continued)

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper 180-220	To break surface gloss	AR
Commercially available	Masking tape	To mask surfaces	AR

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
Commercially available	DP-420(Kit)	AR
Commercially available	L318(Kit)	AR
Commercially available	EA9394	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Where applicable

I. Remove

SUBTASK 340-015-A

WARNING: FOR THESE PROCEDURES APPLIES POTTING COMPOUNDS AND OTHER HARZADOUS MATERIALS ARE USED CAREFULLY OBEY THE SHOP SAFETY PRACTICES TO PREVENT INJURY.

(1) Use one of the methods shown below to remove the insert.

NOTE: Steps 2 and 3 refer to Method 1.

(2) Use a soldering iron to heat the insert. After you turn it on, put the tip of the soldering iron inside the insert threads.

NOTE: After 5-10 minutes, examine the insert. The adhesive is cracked around the insert because of the expansion of the insert during heating. Continue to heat until the epoxy potting compound is cracked.

(3) Use needle-nose pliers, a bolt or equivalent tool to remove the insert from the panel skin.

(4) Examine the panel surface and make sure that the removal did not cause damage to the face sheet.

NOTE: Steps 5, 6, and 7 refer to Method 2.

(5) Put a bolt into the insert and, with a pneumatic wrench, apply 80-100 in-lb of torque.

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NOTE:
- Permit 1-2 minutes of spinning, to build-up heat and break epoxy.
- Standard inserts are designed to take about 70 in-lb of torque.
- Use a shorted bolt or put nut stops on it to limit the penetration of the bolt.
- The excessive torque will spin the insert and permit the person to remove it and some of the failed adhesive.

(6) Remove the original insert and excess potting compound.

(7) Examine the panel surface and make sure that the removal did not damage the face sheet.

J. Replacement of Insert (Figure 818)

SUBTASK 340-016-A

WARNING: FOR THESE PROCEDURES APPLIES POTTING COMPOUNDS AND OTHER HARZADOUS MATERIALS ARE USED CAREFULLY OBEY THE SHOP SAFETY PRACTICES TO PREVENT INJURY.

(1) NOTE: The steps below are to replace a new insert in the same location. Refer to Figure 818.

Drill a hole in the panel of the correct size for the insert. Refer to the applicable insert drawing.

NOTE:
- Drill down to, but do not touch the opposite skin, or, for edge inserts, to ¼ inch (0.6 cm) more than the insert length.
- Undercut the interior honeycomb core to a diameter 1-1/2 to 2 times the installation hole diameter down to the opposite skin. Do not damage either face skin.

(2) Remove all debris and particle from the drilled hole with a vacuum or dry compressed air.

NOTE: No cleaning of inserts is necessary unless they are dirty.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(3) Wipe the panel with a shop wipe wet with clean solvent or isopropyl alcohol.

(4) Remove grease and release agent or other contaminant from the surface:

- It is important to remove all debris, partially drilled and loose cell walls included, to make sure that the potting compound will contact the core material.
- Allow at least 15 minutes at room temperature for the solvent to evaporate from the honeycomb.

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WARNING: LIQUID AND VAPOR OF THIS PRODUCT CAN CAUSE IRRITATION. AVOID CONTACT WITH SKIN.

(5) Mix the potting (resin and hardener) compound in the approximate mix ratio given below. Mix no more than can be used within the pot life of the compound (Table 818).

Table 818 - POTTING COMPOUND - RESIN/HARDENER

ADHESIVE	MIX RATIO BY WEIGHT RESIN/HARDENER	APPROX. POT LIFE 60ºF TO 80ºF
L318 (Kit)	100/10	60 minutes
DP 420	100/50	9 minutes

(6) NOTE: Always obey the instructions given by the manufacturer.

Fill the hole in the panel 1/4 to 1/2 full with adhesive compound. This will cover the base of the insert when seated.

(7) Install the plastic or metal tab on the upper surface of the insert. Seat the insert flush with the panel surface.

(8) Align the SLT 600G guide tool into the two holes in the insert. Do not remove the tab.

(9) Slowly turn the insert while you lower it into the panel to prevent voids in the potting compound.

(10) Push against the panel firmly.

NOTE: Make sure that the insert is flush with the panel surface.

(11) The insert axis must be perpendicular to the panel face. If you use the pressure-sensitive, adhesive-coated alignment tab, adhere the tab to the upper face ply.

(12) Completely fill the cavity.

NOTE:
- Use a cartridge dispenser with nozzle to eject the adhesive.
- Make sure that the insert potting is complete, look to the adhesive ejection from the second hole into the insert, while you dispense glue into the first hole.
- Let some potting compound stay on the tab to compensate for shrinkage during cure.
- Do not put load on the inserts for cure.

(13) After full cure, remove the tab and, with a spatula, trim the excess of the potting compound that extends from the holes in the insert.

NOTE: No cleaning of inserts is necessary unless they are dirty.

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K. Repotting an Insert After Pull-out (Figure 819) (Figure 820)

SUBTASK 340-017-A

WARNING: FOR THESE PROCEDURES APPLIES POTTING COMPOUNDS AND OTHER HARZADOUS MATERIALS ARE USED CAREFULLY OBEY THE SHOP SAFETY PRACTICES TO PREVENT INJURY.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

NOTE:
- If the insert is located near a panel edge, a minimum of 2.33R (Radius) distance from center-point of the insert and the edge must be available for the repair to be done. Refer to Figure 819, VIEW A.
- Do not drill or cause damage to the opposite facesheet during repair procedures.

(2) Remove jagged edges or raised facesheet material. This can be done with a drill and bit that is lightly larger than the tear-out hole, or a countersink tool can be used.

(3) If necessary, replace the upper surface facing with wet lay-up as follows:

NOTE: Plies must be larger than the steps cut into the panel. Overlap should be 2 mm (0.08 in) minimum. Top ply must extend 12.7 mm (0.5 in) onto the perimeter cut.

(a) If applicable, remove the paint from the area where the repair will be installed.

NOTE:
- Mask off the surface to keep the original paint intact out the repair and the adjacent border.
- Remove a minimum of 25 mm (1.0 in) of paint on the border adjacent to the damage where the repair will be made.
- Be careful not to go through the first layer when you sand the area.
- Make sure that all fillers or primers are also removed and the glass surface is bare.

(b) Trim 2 or 3 fiberglass plies to cover the damaged as necessary for the repair and make sure that the top ply must overlap a minimum of 12.7 mm (0.5 in).

NOTE: Put the fiberglass pieces on a table with release paper to prevent contamination of the resin on the shop benches.

(c) Weight the fiberglass plies. Use this figure as the start weight for resin to be mixed for repair (Table 819).

Table 819 - LAMINATING RESIN/HARDENER

Laminating Resin : hardener (by weight)
100:10

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(d) Mix Resolution Resin 828 (laminating resin) and Epicure 3223 (hardener). Resin mixture must be such that a complete saturation of the glass occurs.

(e) With a paint brush, apply a small quantity of the resin onto the repair area.

(f) With a paint brush, apply a small quantity of resin on the first fiberglass ply and repair border 12.7 mm (0.5 in) past the damage. Use of a roller pin or dowel will help distribute the resin evenly on the fiberglass ply.

(g) Install the first fiberglass ply with resin on the damaged panel.

(h) Use the resin and brush to distribute the resin and smooth the panel surface as necessary.

(i) Install subsequent plies as necessary.

(j) Apply more resin onto the surface of the panel. Make sure that the panel is completely soaked in the resin solution.

(k) Use of a nylon or Teflon paddle to help seat the plies onto the panel is recommended.

NOTE: Apply pressure from one corner of the repair and work outward to prevent air bubbles.

(l) Let the repair cure for a minimum of 6 hours.

NOTE: To accelerate the curing time, first air-dry to touch, then raise temperature to 50°C (120°F) with the aid of an inframed lamp or oven for 5 to 30 minutes. Raise the temperature to 65°C (150°F) for 2 hours.

(4) Fair the surface. Refer to AMM TASK 25-00-00-300-801-A/800.

(5) After the filler cure time, remove the masking tape.

(6) Sand the filler edges with the surrounding panel.

(7) Use a router bit and undercut the core below the skin a minimum of the insert Radius around the enlarged hole.

(8) NOTE: No cleaning of inserts is necessary unless they are dirty.

Remove all debris and particle from the drilled hole with a vacuum or dry compressed air.

(9) Wipe the panel with a shop wipe wet with clean solvent or isopropyl alcohol.

(10) Remove grease and release agent or other contaminant from the surface.

NOTE: It is important to remove all debris, partially drilled and loose cell walls included, to make sure that the potting compound will contact the core material.

NOTE: Allow at least 15 minutes at room temperature for the solvent to evaporate from the honeycomb.

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WARNING: LIQUID AND VAPOR OF THIS PRODUCT CAN CAUSE IRRITATION. AVOID CONTACT WITH SKIN.

(11) Mix the potting (resin and hardener) compound in the approximate mix ratio given below. Mix no more than can be used within the pot life of the compound (Table 820).

Table 820 - POTTING COMPOUND - RESIN/HARDENER

ADHESIVE	MIX RATIO BY WEIGHT RESIN/HARDENER	APPROX. POT LIFE 60ºF TO 80ºF
L318 (Kit)	100/10	60 minutes
DP 420	100/50	9 minutes

(12) NOTE: Always obey the instructions given by the manufacturer.

Fill the hole in the panel 1/4 to 1/2 full with adhesive compound. This will cover the base of the insert when seated.

(13) Install the plastic or metal tab on the upper surface of the insert. Seat the insert flush with the panel surface. The insert axis must be perpendicular to the panel face. If you use the pressure-sensitive, adhesive-coated alignment tab, adhere the tab to the upper face ply.

(14) Align the SLT 600G guide tool into the two holes in the insert. Do not remove the tab.

(15) Slowly turn the insert while you lower it into the panel to prevent voids in the potting compound.

(16) Push against the panel firmly.

NOTE: Make sure that the insert is flush with the panel surface.

(17) Completely fill the cavity.

NOTE:
- Use a cartridge dispenser with nozzle to eject the adhesive.
- Make sure that the insert potting is complete, look to the adhesive ejection from the second hole into the insert, while you dispense glue into the first hole.
- Let some potting compound stay on the tab to compensate for shrinkage during cure.
- Do not put load on the inserts for cure.

(18) After full cure, remove the tab and, with a spatula, trim the excess of the potting compound that extends from the holes in the insert.

(19) Install new insert.

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L. Relocation of Insert (Figure 821)

SUBTASK 340-018-A

WARNING: FOR THESE PROCEDURES APPLIES POTTING COMPOUNDS AND OTHER HARZADOUS MATERIALS ARE USED CAREFULLY OBEY THE SHOP SAFETY PRACTICES TO PREVENT INJURY.

(1) After the insert is removed, fill the original hole with potting adhesive to cause it to be flush with upper panel surface.

WARNING: WEAR GLOVES AND GOGGLES DURING CLEANING OPERATIONS. AVOID SOLVENT VAPORS DURING THE CLEANING. USE SOLVENTS IN A WELL VENTILATED AREA.

(2) Wipe panel with a shop wipe wet with clean solvent or isopropyl alcohol.

(3) Remove grease and release agent or other contaminant from the surface.

NOTE:
- It is important to remove all debris, including partially drilled and loose cell walls included, to make sure that the potting compound will contact the core material.
- Let the solvent stay a minimum of 15 minutes at room temperature for it to evaporate from the honeycomb.
- Pressure-sensitive alignment tabs or other installation aids can be attached to the inserts. After the cleaning install the tabs again.

(4) Fill the hole in the panel with the correct potting compound.

NOTE: When highest margins are necessary or for increased Structural Integrity in Aluminum Skins, use Dexter Hysol EA9394. This is an Aluminum Filled Epoxy with higher margins in Aluminum bonding, and it has an equivalent Thermal Expansion.

WARNING: LIQUID AND VAPOR OF THIS PRODUCT CAN CAUSE IRRITATION. AVOID CONTACT WITH SKIN AND USE SUFFICIENT VENTILATION.

(5) Mix the potting (resin and hardener) compound in the approximate mix ratio given below. Mix no more than can be used within the pot life of the compound (Table 821).

Table 821 - POTTING COMPOUND - RESIN/HARDENER

ADHESIVE	MIX RATIO BY WEIGHT RESIN/HARDENER	APPROX. POT LIFE 60ºF TO 80ºF
EY 318(Kit)	100/10	60minutes
DP 420	100/50	9 minutes

NOTE: Always obey the instructions given by the manufacturer.

(6) Remove the excess compound from the surface. Use a spatula to do it.

NOTE:
- Running the edge at an angle along the flash-breaker tape will remove excess adhesive and the remaining compound will be only 0.002 inch (2 mil) above the skin surface, maximum.

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- Let the compound time cure for the correct time.

(7) After the compound is cured, use a 180-220 grit sandpaper and feather raised edges as necessary.

(8) Paint the surface, if necessary (AMM TASK 25-00-00-300-809-A/800).

(9) Drill a new hole into the panel of correct size to relocate the insert within 1-diameter (D) distance, at maximum, of the original hole.

NOTE:
- The hole must extend 1/4 inch (0.6 cm) more than the insert length, and can extend to, but not touch the opposite skin of the panel.
- Undercut the solid-core panels to a diameter 1-1/2 to 2 times the installation hole diameter. Do not damage the skins.
- The old and new locations can be overlapped.

(10) Vacuum out the hole to remove loose particles.

(11) No cleaning of inserts is necessary unless they are dirty.

(12) Remove all debris and particle from the drilled hole with a vacuum or dry compressed air.

(13) Install a new insert.

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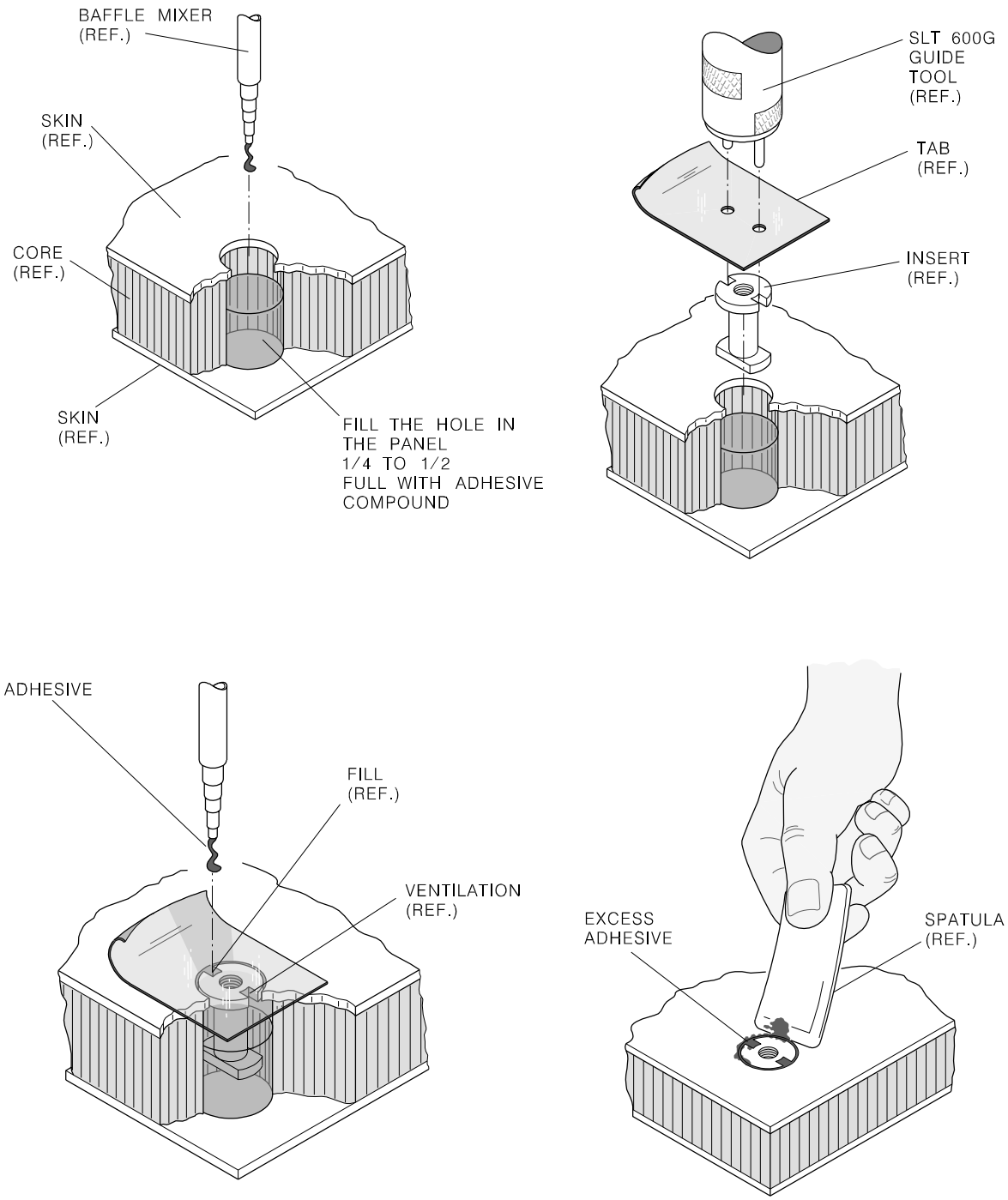
EFFECTIVITY: ALL
Replacement of Insert - Repair
Figure 818



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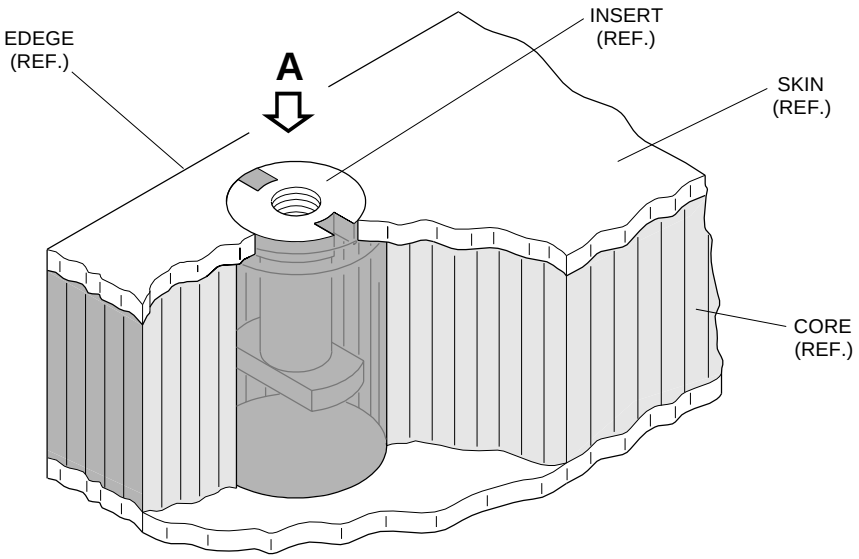
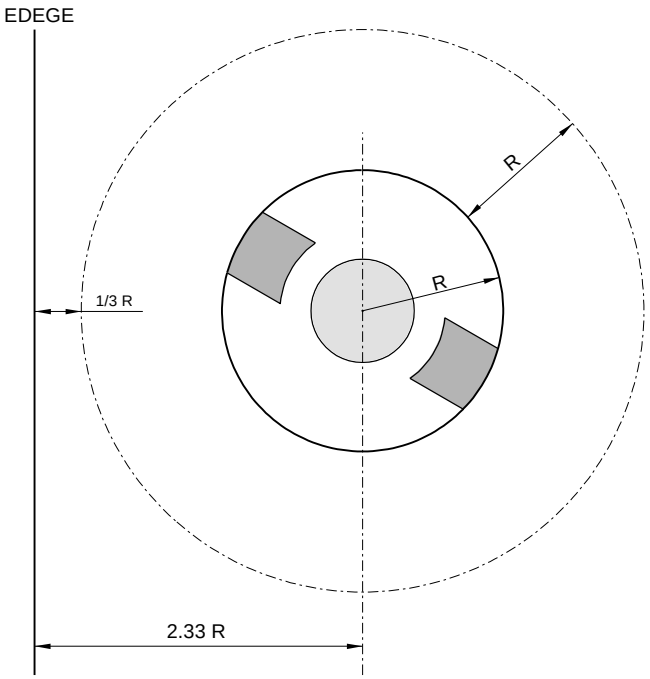
EFFECTIVITY: ALL
Pull-out of Initial Insert
Figure 819





VIEW A

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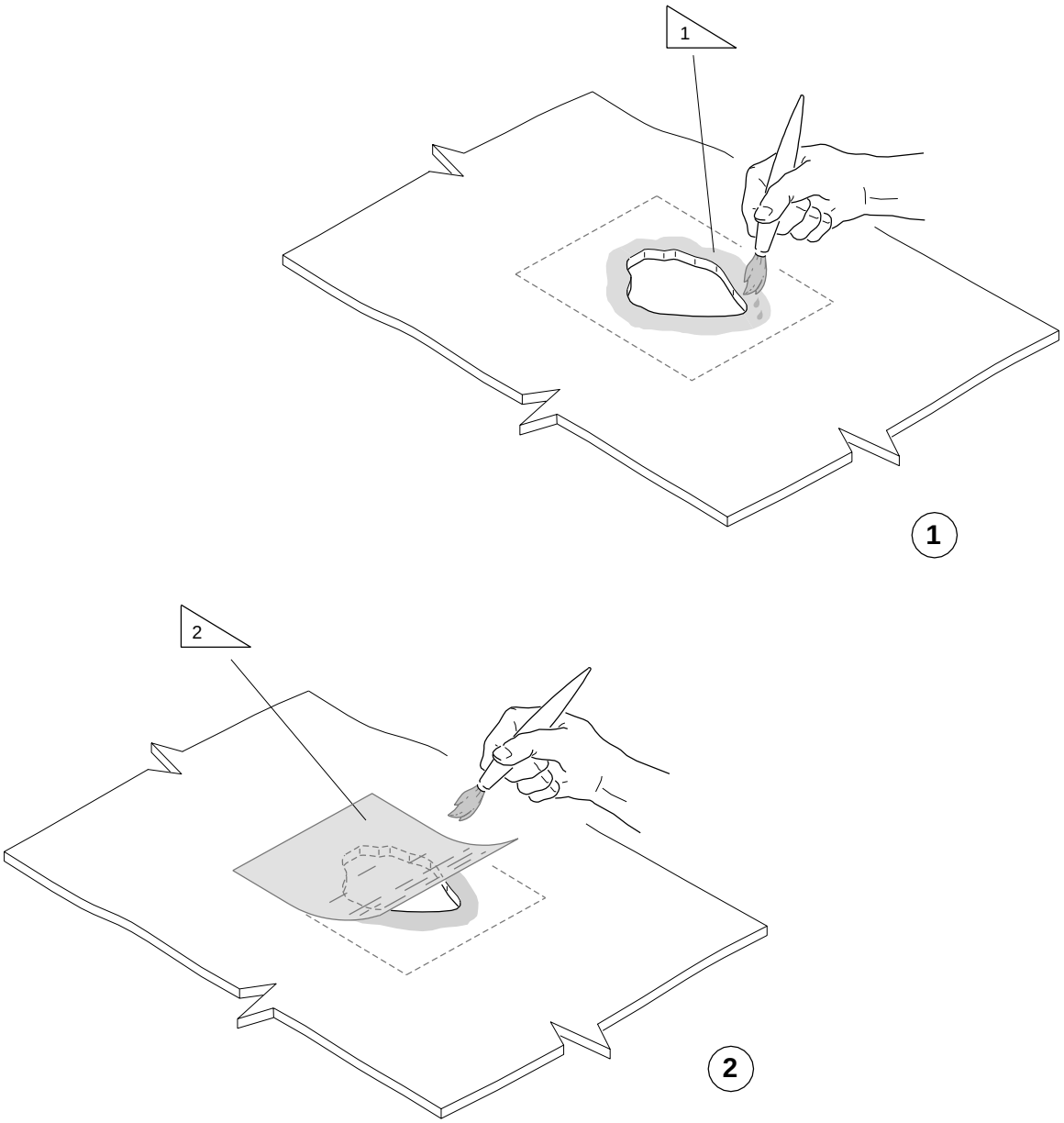
EFFECTIVITY: ALL
Wet-lay Up
Figure 820 - Sheet 1



1 APPLY RESOLUTION RESIN 828 AND EPICURE 3223 ALL AROUND THE DAMAGE.

2 INSTALL FIBERGLASS PLY COATED WITH RESOLUTION RESIN 828 AND EPICURE 3223.

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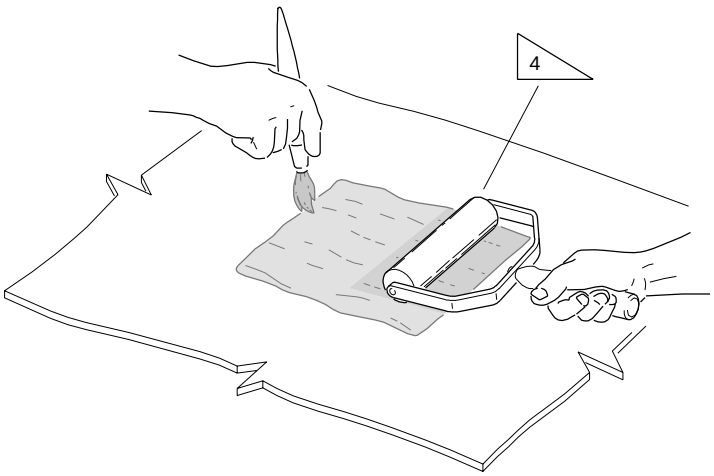
EFFECTIVITY: ALL
Wet-lay Up
Figure 820 - Sheet 2

3 INSTALL FIBERGLASS PLIES COATED WITH RESOLUTION RESIN 828 AND EPICURE 3223.

4 USE A ROLLER PIN OR DOWEL TO DISTRIBUTE THE RESIN ON THE FIRST FIBERGLASS PLY.



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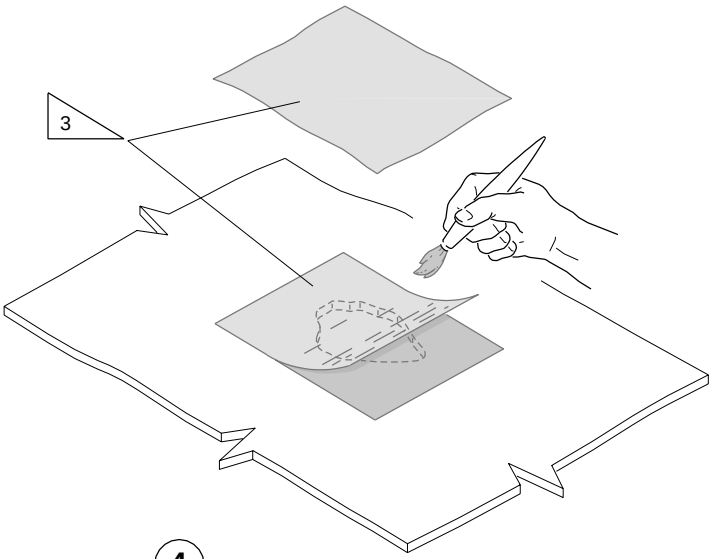

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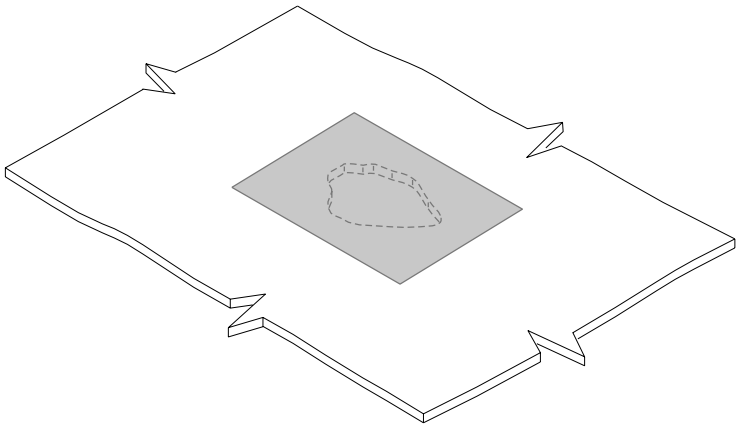

5

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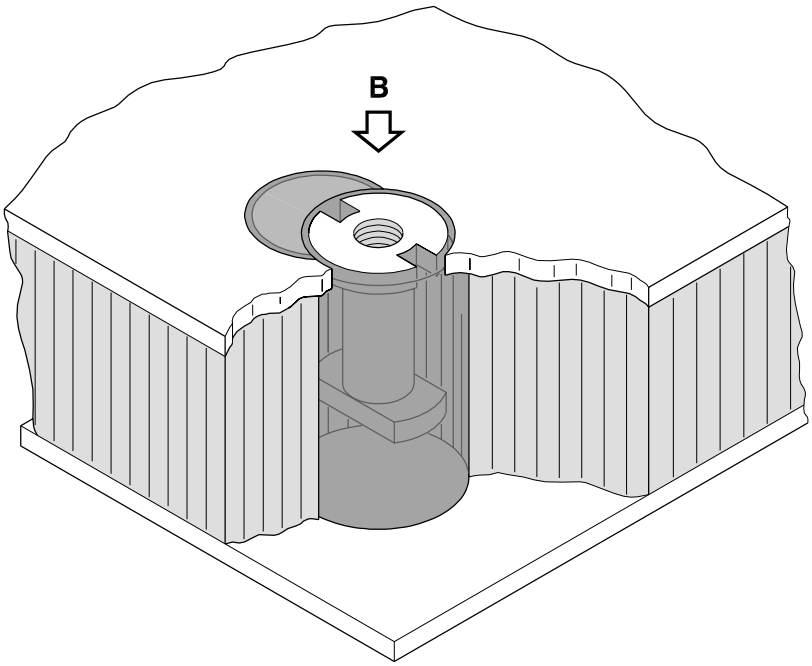
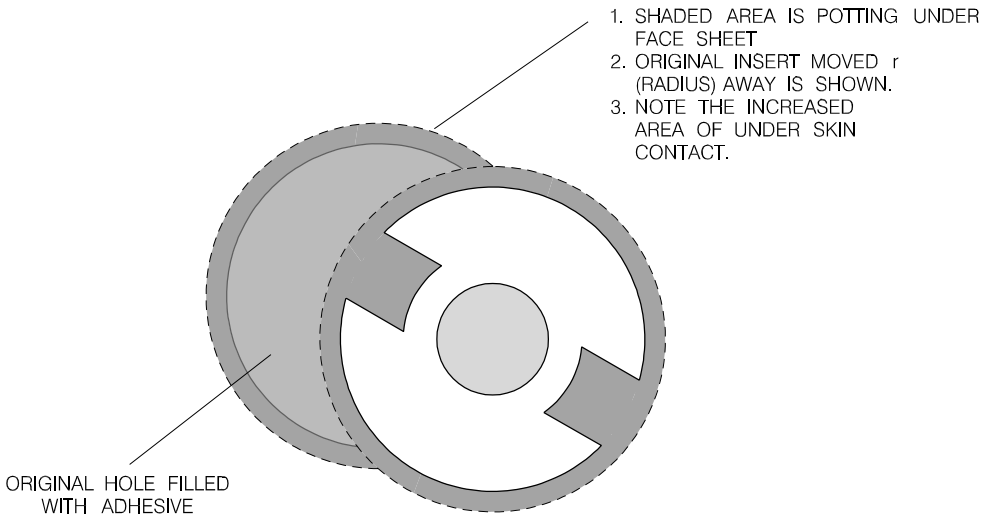
EFFECTIVITY: ALL
Relocation of insert
Figure 821





VIEW B

AMM250719.MCE

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TASK 25-00-00-300-812-A
EFFECTIVITY: ALL

12. FINISHING SOLID-LAMINATE PARTS - REPAIR

A. General

WARNING:
- **WEAR MASKS WHILE YOU PREPARE THE RESIN. THE GASES THAT IT GIVES OFF ARE A POTENTIAL HEALTH HAZARD.**
- **WEAR EYE GOGGLES, DUST MASK, AND PROTECTIVE GLOVES AND CLOTHES WHEN YOU CUT AND SAND COMPOSITE MATERIALS.**
- **HEAT, FIRE OR SPARKS CAN CAUSE AN EXPLOSION. USE EXPLOSION-PROOF EQUIPMENT WHEN YOU DO THESE REPAIRS. NONCOMPLIANCE CAN CAUSE INJURY TO PERSONNEL.**
- **TO BREATHE VAPORS OR PERMIT SOLVENT TO CONTACT SKIN OR EYES IS HAZARDOUS. WEAR NEOPRENE GLOVES WITH COTTON LINERS, PROTECTIVE CLOTHING, AND EYE GOGGLES.**
- **IF CHEMICAL CONTACT OCCURS, WASH THE REGION FULLY WITH WATER.**
- **IF YOU GET A CHEMICAL IN THE EYES, FLUSH THE EYES WITH LARGE QUANTITIES OF WATER AND GET MEDICAL AID. USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU DO WORK IN A CONFINED SPACE OR AREA.**

(1) This task gives the procedures to repair the main-door lining panels and service-door lining panels made of solid-laminate (phenolic or epoxy resin reinforced with layers of glass or aramid fabrics).

(2) Solid-laminate is used for small components and fitting locations.

(3) To repair the surfaces of parts or panels, you must obey these conditions:

(a) If the total damaged area in the same material is not larger than 103.0 cm^2 (16 in^2), you can apply all types of resin epoxy to solid-laminate.

(b) If the sum of the damaged areas is larger than 103.0 cm^2 (16 in^2), you must replace the panel.

(c) NOTE: The operator must control the total area of repair. Embraer suggests that you have a form where to control all repairs. See an example of such a form in Table 822.

Table 822 - DAMAGE AREA CONTROL

COMPONENTS	DAMAGE AREA	DATE OF RE-PAIR	TOTAL DAMAGE AREA
Service-door lining panel (zone 821)	38.7 cm^2 (6 in^2)	May 25/99	38.7 cm^2 (6 in^2)

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Table 822 - DAMAGE AREA CONTROL (Continued)

COMPONENTS	DAMAGE AREA	DATE OF RE-PAIR	TOTAL DAMAGE AREA
Main-door lining panel (zone 811)	64.5 cm^2 (10 in^2)	Jul 01/00	103.2 cm^2 (16 in^2)
Main-door lining panel (zone 811)	3.2 cm^2 (0.5 in^2)	Jul 15/00	106.4 cm^2 (16.2 in^2)[1]

[1] This repair is more than that permitted for solid-laminate 103.0 cm^2 (16 in^2). Then, you must replace the panel.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sharp edge tool	To remove plies	

D. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Sandpaper, 180 grit	To break surface gloss	AR
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Shop Wipes	For cleaning	AR
Commercially available	Dust mask	To prevent skin irritations and excessive inhalation	1
Commercially available	Paint brush	To apply the resin	1

E. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
MEP22-011	Epocast 50-A1/9816 - Epoxy resin	AR
MIL C-9084	Style 7781 - Fiberglass Fabric	AR
Commercially available	Style 120 - Fiberglass Fabric	AR
Commercially available	Style 1581 - Fiberglass Fabric	AR
Commercially available	Polyurethane paint, FED. STD. 595-36173	AR

F. Expandable Parts

Not Applicable

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G. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Passenger cabin

H. Solid-Laminate - Repair (Figure 822)

SUBTASK 340-019-A

(1) Determine the damage as follows:

(a) Examine the panel in vicinity of damage for entry of water, oil, fuel, dirt or other foreign matter.

(b) Examine for delamination around the damage.

(2) Repair the damage (Figure 822) as follows:

(a) NOTE: This repair applies to components made from laminated glass or aramid and epoxy or phenolic resin without a honeycomb core repair.

Mark the area to receive the repair layers with adhesive tape, with a 25 mm (1 in) margin.

WARNING: WEAR GLOVES AND GOGGLES AND PREVENT CONTACT WITH SOLVENT VAPORS DURING THE CLEANING.

(b) Clean up the panel with ethanol or isopropyl alcohol to remove dirt, oil, and debris.

(c) If applicable, remove the paint from the area where the repair will be installed, as follows:

1. Mask off the surface to keep the original paint intact in the repair adjacent area.

2. Use a No. 180 sandpaper to remove a minimum of 25 mm (1 in) of paint on the border adjacent to the damage where the repair will be made.

3. Be careful not to go through the first layer when you sand the area.

4. Make sure that all filler or primers are also removed and the bare laminate surface is exposed.

(d) Prepare the damaged area according to step 3.

(e) Clean the damaged area according to step 4.

(f) Prepare and apply repair plies according to step 5.

(g) Cure according to step 6.

(h) Refinish the repair according to step 7.

(3) To prepare damaged areas, do these steps (Figure 822):

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WARNING: • **SANDING GIVES OFF A FINE DUST THAT CAN CAUSE SKIN IRRITATIONS. TO BREATHE A LARGE QUANTITY OF THIS DUST CAN CAUSE INJURY TO YOU. OBEY PRECAUTIONS FOR SKIN AND RESPIRATION PROTECTION.**

• **EXPLOSION-PROOF EQUIPMENT MUST BE USED WHERE THE VAPOR IGNITION IS POSSIBLE.**

(a) Remove damaged plies from the laminate areas with No. 180 sandpaper, fine abrasive, or trim out the damaged surface. Keep a geometric shape (oval, circular, or rectangular), and be careful not to cause damage to the surface around the damaged area. (This step is not applicable to original material of style 285).

(b) For material of style 285, remove the damaged plies from the laminate by the tapering process with a sharp edge tool. Refer to Figure 822, sheet 1.

NOTE: The damaged plies must be removed until all damage goes out.

(c) Lightly sand the surface in the marked area to get a good adhesion.

(4) To clean damaged areas, do these steps:

WARNING: • **KEEP SOLVENTS AWAY FROM SOURCES OF HEAT, FIRE, OR SPARKS, WHICH CAN CAUSE AN EXPLOSION.**

• **PREVENT CONTACT OF SOLVENT WITH SKIN, EYES, AND CLOTHING. WEAR EYE PROTECTION AND USE MECHANICAL VENTILATION OR RESPIRATORY PROTECTION WHEN YOU WORK IN A CONFINED SPACE OR AREA. TO BREATHE VAPORS OR PERMIT SOLVENT TO TOUCH YOUR SKIN OR EYES IS DANGEROUS.**

CAUTION: DO NOT PUT PARTS FULLY INTO SOLVENT AND, DURING THE CLEANING, REMOVE THE SOLVENT QUICKLY TO PREVENT DAMAGE TO THE PART.

(a) Remove all sanding dust with oil-free compressed air.

(b) Clean the surface with Isopropyl Alcohol, a minimum of 12.70 mm (0.50 in) more than the limits of the sanded area.

NOTE: Let the solvent evaporate for a few minutes before you continue with the repair.

(5) To replace the plies, do these steps:

(a) Select fabrics (refer to Table 823) with material of the same type and orientation as the original fabric.

NOTE: • Follow the orientation of Table 823 to replace the correct quantity of plies for each type of fabric.

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- Use an additional repair ply (in the same fabric as that originally used in the top ply in the case of hybrid composites) to minimize surface depression when plies are replaced.
- The resin content of the impregnated fabric must be 55 ± 5 percent by weight.
- For damage larger than 103.0 cm^2 (16 in^2), you must replace the panel.
- For damage less than 103.0 cm^2 (16 in^2), use any resin epoxy used for solid-laminate.

(b) Cut the replacement plies to the necessary dimensions. There must be a 25.4 mm (1 in) overlap.

(c) Mark the area to receive the repair layers with adhesive tape, with a 25 mm (1 in) margin for the additional layer to settle.

(d) With a paint brush, apply a small quantity of the resin onto the repair area. Refer to Figure 822, sheet 1.

(e) With a paint brush, apply a small quantity of resin on the first ply.

(f) Install the first ply with resin on the damaged panel. Refer to Figure 822, sheet 1.

(g) NOTE: Laminate the first ply in the position in which it will be saturated with resin.

- Use of a roller pin or dowel will help distribute the resin evenly on the ply. Refer to Figure 822, sheet 2.
- The repair plies must be installed in the same sequence as that of the original plies repaired, in the case of hybrid composites.

(h) Apply pressure from one corner of the repair and work outward to prevent air bubbles.

(i) Install subsequent plies as necessary and do the procedures for each replaced ply.

NOTE: The number of plies will depend on the fabric style used. Use the number of plies necessary to restore the piece thickness.

(6) To cure the repair, obey the resin manufacturer's instructions.

(a) Examine the patch to make sure that it is free from pits, blisters, starved areas, and excess resin deposits.

(7) To refinish parts, do as follows:

CAUTION: DO NOT SAND INTO THE ORIGINAL STRUCTURE. NOT TO DECREASE THE STRENGTH OF THE COMPONENT.

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(a) Make sure that the panel has an only one thickness. If necessary, sand the area with No. 180 sandpaper, fine abrasive. Keep a geometric shape (oval, circular or rectangular) until you get a uniform surface.

(b) Apply the polyurethane paint to the repaired surface if the original paint was removed.

NOTE: The commercially available paint is not the same as the original. Thus the finishing parts will not look very similar to the original part.

(c) Remove the adhesive tape and the clean surface with Isopropyl Alcohol.

NOTE: Do not permit the solvent to evaporate on the part and make sure that there is no contamination on it.

(8) Material substitution:

(a) The substitution for fiberglass materials, when the "as manufactured" material is not available or not in stock, is shown in Table 823.

Table 823 - COMPOSITE MATERIAL SUBSTITUTION

ORIGINAL MATERIAL[1]	SUBSTITUTE MATERIAL
250°F Fiberglass Fabric 1 Ply Type 7781 1 Ply Type 120	250°F Fiberglass Fabric 1 ply style 1581, 2 plies style 120 or plies style 116 1 Ply Type 116
250°F Aramid fabric 1 Ply style 285	250°F Aramid fabric 1 Ply style 7781, 1 Ply style 1581, 2 Plies style 116 or 2 Plies style 120

[1] When original lamination is made at 121°C (250°F), make the repair at room temperature.

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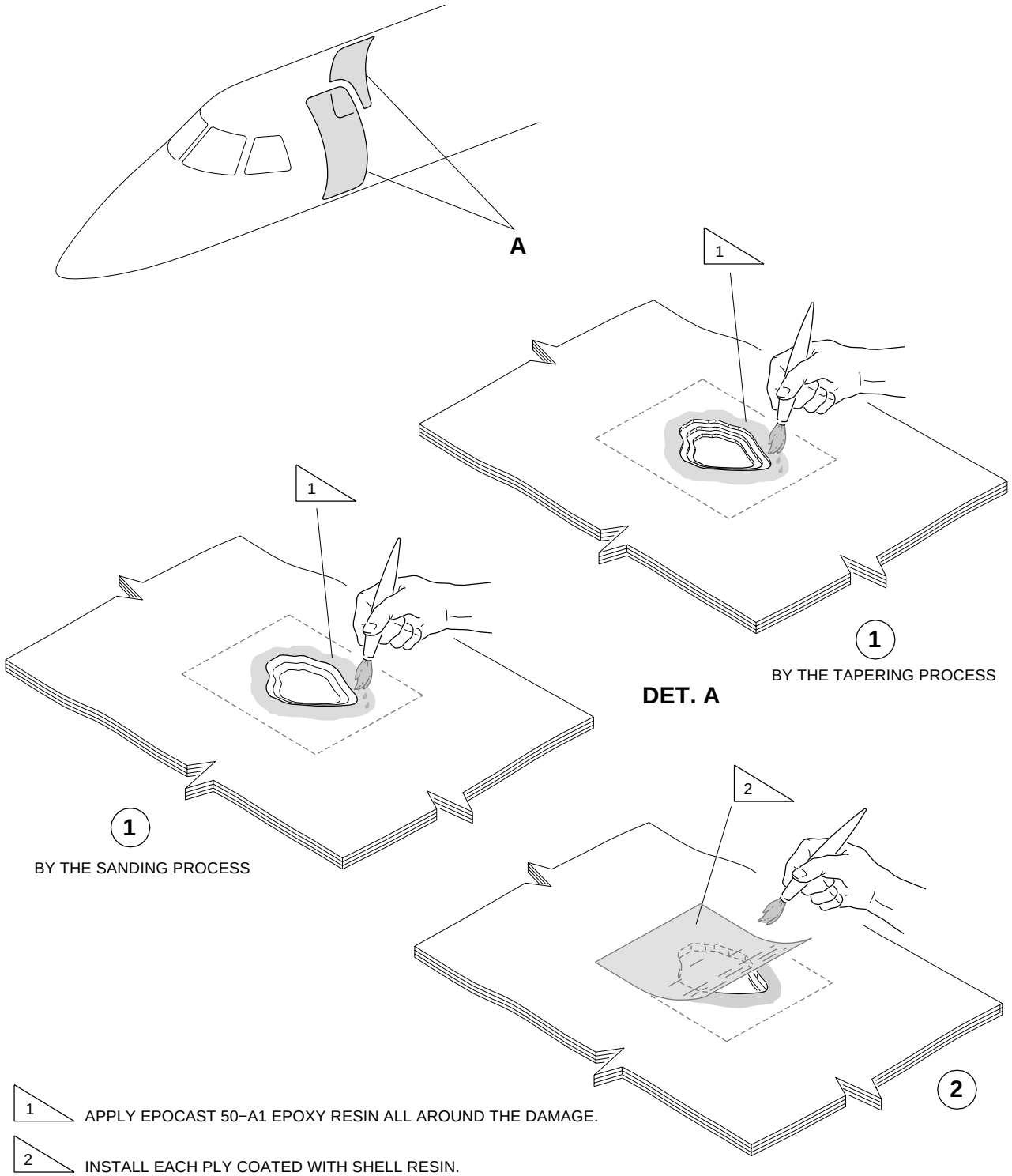
EFFECTIVITY: ALL
Solid-Laminate - Repair
Figure 822 - Sheet 1



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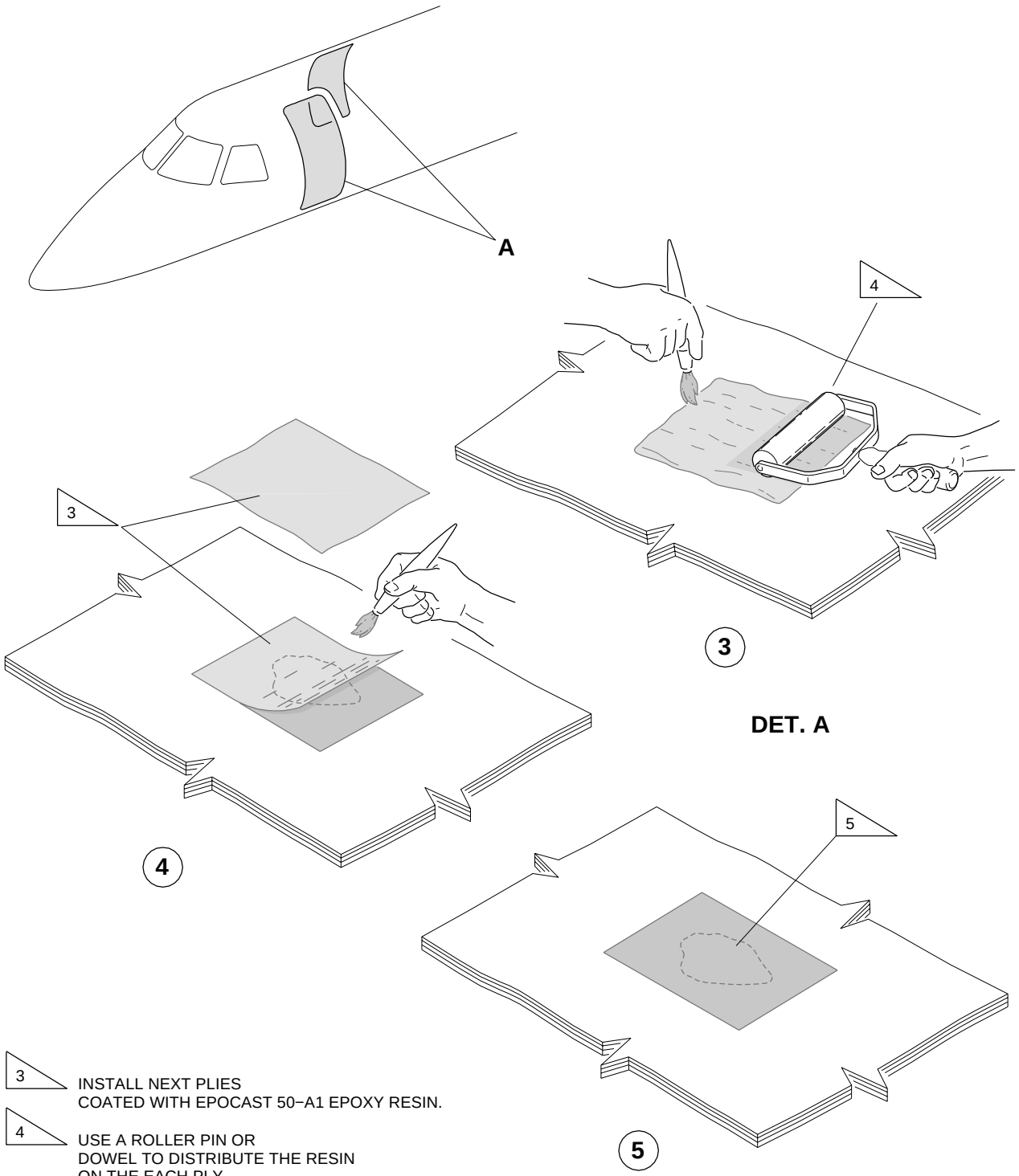
EFFECTIVITY: ALL
Solid-Laminate - Repair
Figure 822 - Sheet 2



3 INSTALL NEXT PLIES
COATED WITH EPOCAST 50−A1 EPOXY RESIN.

4 USE A ROLLER PIN OR
DOWEL TO DISTRIBUTE THE RESIN
ON THE EACH PLY.

5 PLY REPAIRED.

EM145AMM251188B.DGN

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