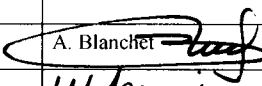
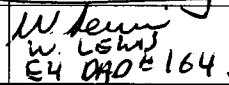


1 PRIME DESIGN ACTIVITY		BOMBARDIER INC. <input type="checkbox"/> 3AB48		2 REO NUMBER	
BOMBARDIER INC., MONTRÉAL <input checked="" type="checkbox"/> 88308		LEARJET INC. <input type="checkbox"/> 24210		<b>601R-25-52-025</b>	
BOMBARDIER INC., DOWNSVIEW <input type="checkbox"/> 71867		SHORT BROTHERS PLC <input type="checkbox"/> K4585			
3 TITLE					4 SHEET
<b>GENERIC REPAIRS OF AFT CARGO LINERS USING AKRO FIREGUARD PATCHES</b>					<b>1 OF 7</b>
5 REQUESTED BY		6 ADDITIONAL LIMITATIONS		7 MODEL	
<b>CAR 45519</b>		<b>NONE</b>		<b>CL-601R</b>	
				8 SERVICE EFFECTIVITY	
				<b>7858-8999</b>	
9 DESCRIPTION / DISPOSITION					
<b><u>DESCRIPTION:</u></b>					
THE FOLLOWING GENERIC REO PROVIDES INSTRUCTIONS FOR THE USE OF AKRO FIREGUARD AF 300-P, AF 302-P, AF 306-P AND AF 400 PATCHES FOR PERMANENT REPAIRS TO DAMAGED CARGO LINERS.					
<b><u>DESIGN COMPLIANCE:</u></b>					
THIS GENERIC REO IS IN CONFORMITY WITH DESIGN COMPLIANCE REPORT RAQ-601R-174. REPAIR PROCESSING STEPS AND PROCEDURES DESCRIBED HEREIN ARE IN ACCORDANCE WITH AKRO PROCEDURES REFERENCED IN ENG-1006.01 REV 'B', EXCEPT CLEANING PROCESS PER SRM 51-26-00.					
<b><u>LIMITATIONS:</u></b>					
<ul style="list-style-type: none"> <li>• THE REPAIRS ARE ONLY APPLICABLE TO THE AFT CARGO LINERS LISTED IN TABLE 1, SHEET 2 OF THIS REO.</li> <li>• INSPECT THE UNDERLYING STRUCTURE FOR DAMAGE, PRIOR TO PATCH APPLICATION—NO STRUCTURAL DAMAGE IS ALLOWED.</li> </ul>					
- CONTINUED ON NEXT PAGE					
10 REV	--				
11 DATE	25-AUG-2009				
12 PREPARED BY	HYUNJUN KIM				
13					
14					
15					
16 DESIGN AUTH	 A. Blanchet				
17 DAO AUTHORITY	 W. Lewis E4 DAO#164.				
18 RELEASE					
19					
<input checked="" type="checkbox"/> THE TECHNICAL CONTENT OF THIS DOCUMENT IS APPROVED UNDER THE AUTHORITY OF TRANSPORT CANADA DESIGN APPROVAL ORGANIZATION, DAO NO. 93-Q-02			<input type="checkbox"/> BA ENGINEERING DISPOSITION FOR APPROVAL BY OPERATOR'S LOCAL AIRWORTHINESS AUTHORITY		
<small>LA PRÉSENTE INSTRUCTION TECHNIQUE DE RÉPARATION A ÉTÉ ÉTABLIE D'APRÈS LES DONNÉES FOURNIES À BOMBARDIER INC. PAR L'EXPLOITANT OU PAR SON REPRÉSENTANT. LA RESPONSABILITÉ INCOMBE À L'EXPLOITANT OU À SON REPRÉSENTANT DE S'ASSURER QUE TOUTES LES DONNÉES FOURNIES SONT COMPLÈTES ET EXACTES. BOMBARDIER INC. DÉCLINE TOUTE RESPONSABILITÉ QUANT AUX CONSÉQUENCES RÉSULTANT D'UN RAPPORT DE DOMMAGE OU D'ANOMALIE INCOMPLÈT OU INEXACT.</small>					
<small>LES RENSEIGNEMENTS, LES DONNÉES ET DESSINS TECHNIQUES DIVULGUÉS DANS LES PRÉSENTES SONT LA PROPRIÉTÉ EXCLUSIVE DE BOMBARDIER INC. OU COMPORTENT DES DROITS DE PROPRIÉTÉ APPARTENANT À AUTRUI ET NE PEUVENT ÊTRE DIVULGUÉS À QUICONQUE NI UTILISÉS PAR QUI QUE CE SOIT SANS LE CONSENTEMENT ÉCRIT DE BOMBARDIER INC. LE DÉTENTEUR DES PRÉSENTES S'ENGAGE, DANS TOUTES CIRCONSTANCES, À GARDER CONFIDENTIELS LES DONNÉES ET DESSINS TECHNIQUES QU'ELLES CONTIENNENT. CE QUI PRÉCÈDE NE S'APPLIQUE PAS AUX PERSONNES QUI ONT DES DROITS DE PROPRIÉTÉ SUR CES RENSEIGNEMENTS, DONNÉES TECHNIQUES ET DESSINS DANS LA MESURE OÙ CES DROITS EXISTENT.</small>					
<small>THIS REPAIR ENGINEERING ORDER HAS BEEN PREPARED ON THE BASIS OF INFORMATION SUPPLIED TO BOMBARDIER INC. BY THE OPERATOR OR HIS AGENT. IT IS THE RESPONSIBILITY OF THE OPERATOR OR HIS AGENT TO VERIFY THAT THE INFORMATION SUPPLIED IS COMPLETE AND ACCURATE. BOMBARDIER INC. DOES NOT ACCEPT RESPONSIBILITY FOR ANY CONSEQUENCE RESULTING FROM INCOMPLETE OR INACCURATE REPORTING OF THE DAMAGE / DISCREPANCY.</small>					
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**LIMITATIONS (CONTINUED):**

- CHOOSE APPROPRIATE PATCHES DEPENDING ON THE SIZE OF THE DAMAGE, IN ORDER TO MEET THE INSTALLATION REQUIREMENTS AS SHOWN IN FIGURES 7 THROUGH 10.
  - AF300-P: FOR 4" X 4" PATCH
  - AF302-P: FOR 4" X 8" PATCH
  - AF306-P: FOR 8" X 8" PATCH
  - AF400: FOR 4" X 16" PATCH
- OVERLAPPING OF REPAIR PATCHES ARE ALLOWED, PROVIDED A MINIMUM 1.0 INCH OVERLAP. OVERLAPPING OF MULTIPLE PATCHES (MORE THAN 2 PATCHES) ARE NOT ALLOWED.
- PATCHES MUST NOT COVER PANEL FASTENERS, JOINT SEALS, FITTINGS FOR SMOKE DETECTION, LIGHTING, FIRE SUPPRESSION, CARGO TIE-DOWNS OR ANY OTHER HARDWARE OR FIXTURE.

**REFER TO SHEETS 3 TO 7 FOR REPAIR INSTRUCTIONS.**

DESCRIPTION	P/N
Liner Assy, Sidewall Lwr (LH)	B302101-101
Liner Assy, Sidewall Mid (LH)	B302102-101
Liner Assy, Sidewall Mid (RH)	B302103-101
Liner Assy, Sidewall Lwr (RH)	B302104-101
Panel Assy, Access	B302111-101
Strip Assy, Top	B303011-101
Liner Assy, Ceiling (LH)	B303101-101
	B303101-103
Liner Assy, Ceiling (RH)	B303102-101
Shroud Assembly Door Baggage Bay	B303110-1
Liner Assy (LH)	B305101-101
Liner Assy (Mid)	B305102-101
Liner Assy, Stbd	B305103-101
Duct, Aft Baggage Compartment	B305104-1
Skirt, 9G Bulkhead Duct	B305113-101

**Table 1 Aft Cargo Liners that are applicable for Repair**

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**REPAIR A:** Refer to Fig. 7 and 8 for installation

**APPLICABLE FOR AF300-P (4" X 4" Patch), AF302-P (4" X 8" Patch) and AF306-P (8" X 8" Patch)**

1. The repair shall be performed at a temperature of 70° F ±5° F and 50% ±5% relative humidity.
2. The patch must only be applied to clean, sound material which is part of or firmly attached to undamaged areas of the liner.
3. Remove any paint, primer, adhesive, Tedlar, wax or gloss from the adhesive zone by sanding carefully with abrasive paper or Scotch-Brite. Do not break or expose any fibers of the surface ply outside of the damage area. The presence of any residual Tedlar coating will interfere with proper adhesion of the patch. **Note: Chemical paint strippers will attack resin systems and must not be used to remove paint.**
4. Wipe clean with cloth dampened with cleaning solutions per SRM 51-26-00 and wipe dry. Dry thoroughly. Do not allow standing solvent on part because damage will occur.
5. Attach repair kit bag near work area using self-adhesive tape. Note, bag seam can be slit to provide working platform and easy access to materials.
6. Read remainder of procedure and work quickly as possible through the following steps since adhesive mixture will harden in approximately 5 minutes after removing dividing bar.
7. Prepare use of razor blade by removing protector.
8. Put on a pair of latex gloves.
9. Open smaller foil packet and remove adhesive pouch. Center dividing bar may be removed by grasping pouch halves in each hand and applying a sharp twisting force. Alternately, the bar may be removed by sliding motion. Refer to Fig. 1
10. Knead two-part adhesive together by moving mixture from end to end with both hands using thumbs and fingers. Continue to knead for approximately 1 minute until adhesive is thoroughly mixed.
11. Cut a corner off the pouch with the razor blade, approximately ¾" by ¾" by 45°. Refer to Fig. 2
12. For the AF306-P patch, remove the backing from the pre-sanded patch.
13. Squeeze a bead of adhesive mixture (approx. 0.30" dia.) around the perimeter of patch to be bonded with the parent material.
14. Use spreader to distribute adhesive to outer edges of patch. Refer to Fig. 3
15. Center patch over damaged area and press down firmly. Use enclosed tape pieces to hold patch in place. Patches may be installed on a diagonal to cover long narrow cutouts provided that a 1.0" min. overlap is maintained. Refer to Fig. 6
16. Peel the plastic backing off the fiberglass scrim. Center it over the patch and press firmly into position. Refer to Fig. 3
17. Cut entire end off the pouch with the razor blade to allow easy removal of mixture. Note: For patch AF306-P, a second foil packet and adhesive pouch is provided due to the larger area. Open and mix the second pouch of adhesive per Notes 8 and 9.
18. Dispense epoxy by applying pressure on the pouch to extrude mixture. Force all adhesive from pouch onto scrim using enclosed plastic spreader. Refer to Fig. 4
19. Use enclosed plastic spreader to smooth and distribute the mixture across the face of the patch and out to the edges of the scrim. Be careful to avoid starved areas. Refer to Fig. 5
20. The repair is complete once the adhesive coating cures approximately 6 minutes at 70° F or higher.
21. After cure, inspect to ensure that there are no edge delaminations. Also ensure that no areas are starved of epoxy and that no ridges or folds are present. Perform a detailed visual inspection of the repair area to ensure that there are no crack indications in the resin.

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**REPAIR A (CONTINUED):**

22. If two patches are used place the second patch before applying the first fiberglass scrim. The second patch must overlap the first patch and the damage area by 1.0" minimum.
23. Place the first fiberglass scrim over the first patch and the second fiberglass scrim over the second patch. The scrim must lap the pouches by 1" minimum.
24. Use all the adhesive supplied with first patch to apply both patches and to begin applying adhesive to the fiberglass scrim before opening and kneading the second adhesive pouch and applying to fiberglass scrim.

**REPAIR B:** Refer to Fig. 9 and 10 for installation

**APPLICABLE FOR AF400 (4' X 16' Patch)**

1. The repair shall be performed at a temperature of 70° F ±5° F and 50% ±5% relative humidity.
2. The patch must only be applied to clean, sound material which is part of or firmly attached to undamaged areas of the liner.
3. Use a pencil to mark the outline of what will be the 'adhesive zone'. This adhesive zone must extend at least 1" to 1 ½" beyond the perimeter of the damage in all directions. This is the minimum size. If more convenient, the adhesive zone may be larger to accommodate the full width of the Fiberglass Tape.
4. Measure the total adhesive zone outlined. Each AF 400 kit contains enough material to complete a maximum area of 64 square inches (including the patch).
5. Remove any paint, primer, adhesive, Tedlar, wax or gloss from the adhesive zone by sanding carefully with abrasive paper or Scotch-Brite. Do not break or expose any fibers of the surface ply outside of the damage area. **Note: Chemical paint strippers will attack resin systems and must not be used to remove paint.**
6. Wipe clean with cloth dampened with cleaning solutions per SRM 51-26-00 and wipe dry. Dry thoroughly. Do not allow standing solvent on part because damage will occur.
7. Cut one or more pieces of the special Fiberglass Tape supplied to fit the outline of the damage. The Fiberglass Tape must overlap the damaged area by a minimum of 1" in all directions and must not be larger than the adhesive zone already outlined. If more than one piece of Fiberglass Tape is to be used to fit the damage, each piece must overlap any other piece by at least 1". Cut these to size with the razor blade or a pair of scissors and set them aside for now.
8. Inspect the gap that is to be repaired. If the void to be bridged exceeds about ½" it is helpful to construct a temporary backing to support the patch during its curing process.  
 This temporary backing material may be made from rigid materials such as self-adhesive cargo liner material for larger holes. The temporary backing may be attached to the side opposite the patch to support the repair. The patch is not applied over the top of the backing materials.  
 It is important to note that the purpose of this temporary backing material is simply to support the lay-up system during curing and it is not required to meet any flammability tests. The backing material may be removed after cure or it may be allowed to remain as a portion of the substrate.  
**Note:** If you intend to remove the temporary backing material it will be necessary to place a sheet of polyethylene or other type of release paper between it and the Akro Fireguard Adhesive to facilitate easy removal.
9. Put on a pair of latex gloves.

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### REPAIR B (CONTINUED):

10. Open the foil pouch containing the barrier package of AF 400 Fire Retardant Adhesive. (Do not cut open the clear plastic barrier package inside yet.) Take out the clear plastic pouch and slide apart the divider bar which separates the two components of the adhesive. Refer to Fig. 1 Now mix the materials together inside the sealed pouch – thoroughly.

This is accomplished by first kneading the two components together, then consolidating them to one side of the pouch, kneading some more, consolidating again, etc. Continue this procedure and mix the adhesive thoroughly for at least two minutes and until the color is uniform.

The adhesive will set up in about 15 to 20 minutes after mixing so the remaining steps must be completed without delay. This is an entirely adequate amount of time to finish the patch so there is no need to rush. Just work diligently and the patch will be completed in plenty of time.

11. Cut a corner off the pouch of mixed adhesive and squeeze out only enough material to apply a 1/16” to 1/8” thick layer of adhesive over the entire adhesive zone previously outlined. Use a spreader to distribute the adhesive smoothly and evenly. Cover the entire adhesive zone previously outlined neatly leaving no voids or air pockets. Save the rest of the mixed adhesive which will be used to later cover the entire patch. Refer to Fig. 4

12. Place the piece or pieces of Fiberglass Tape cut earlier directly onto the wet adhesive which has now been spread uniformly over the damaged area. Remember that the Fiberglass Tape must overlap the damage by 1” in all directions. If more than one piece of Fiberglass Tape is being used, it must also overlap any other piece of Fiberglass Tape by at least 1”.

Press down on the Fiberglass Tape with your (gloved) fingertips to seat it firmly into the wet adhesive.

13. Next, take the remaining mixed adhesive and spread a 1/16” to 1/8” thick layer directly on top of the Fiberglass Tape which was just pressed into the adhesive. This must be done gently to avoid sliding the Fiberglass Tape out of its proper position over the damage.

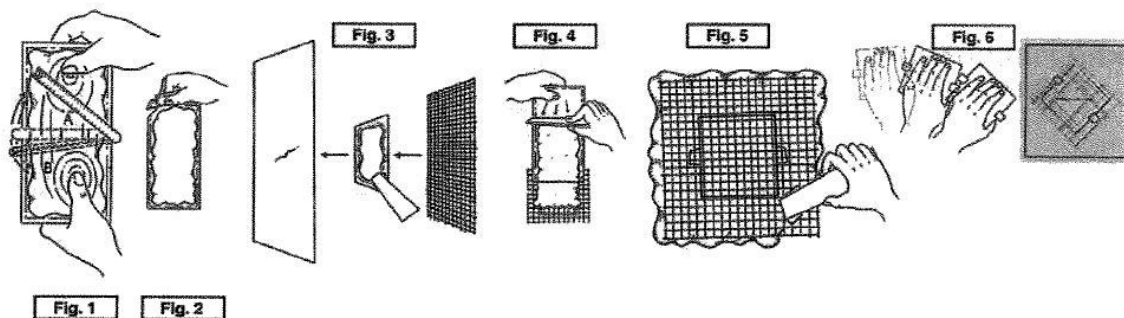
Spread the adhesive uniformly over the Fiberglass Tape and work it in with a spreader both to saturate the Fiberglass Tape with adhesive and cover the entire surface of the patch smoothly and evenly.

Refer to Fig. 5

The adhesive will set up and become un-toolable in about 20 minutes at 70 degrees F. This set up time will be accelerated in warmer weather and retarded under cooler conditions.

**Note:** If desire, during cool conditions, the curing process may be accelerated by gently heating the patch assembly with an infrared heat lamp. Use caution to no melt any heat sensitive materials.

14. After the patch has become firmly set up, any undesired temporary tape, release paper, or other materials which may have been used to support the reverse side of the patch should be removed.
15. After cure, inspect to ensure that there is no edge delamination. Also ensure that no areas are starved of epoxy and that no ridges or folds are present. Perform a detailed visual inspection of the repair area to ensure that there are no crack indications in the resin.



**DIAGRAM 1: AKRO FIREGUARD INSTALLATION INSTRUCTION**

10 REV	--					2 REO NUMBER	4 SHEET
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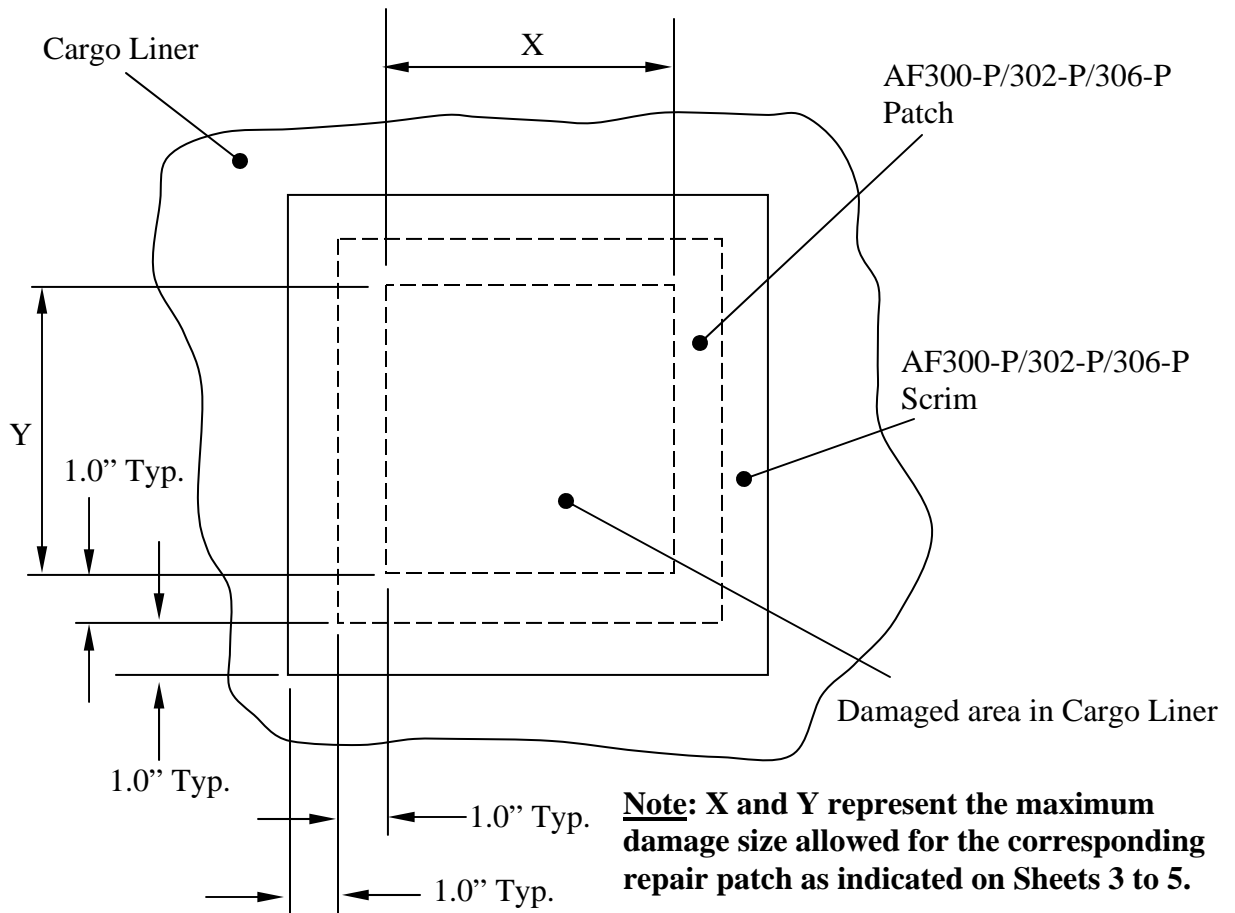


Figure 7: Installation of AF300-P, AF302-P, or AF 306-P Patches in a “Central” Area of the Cargo Liner

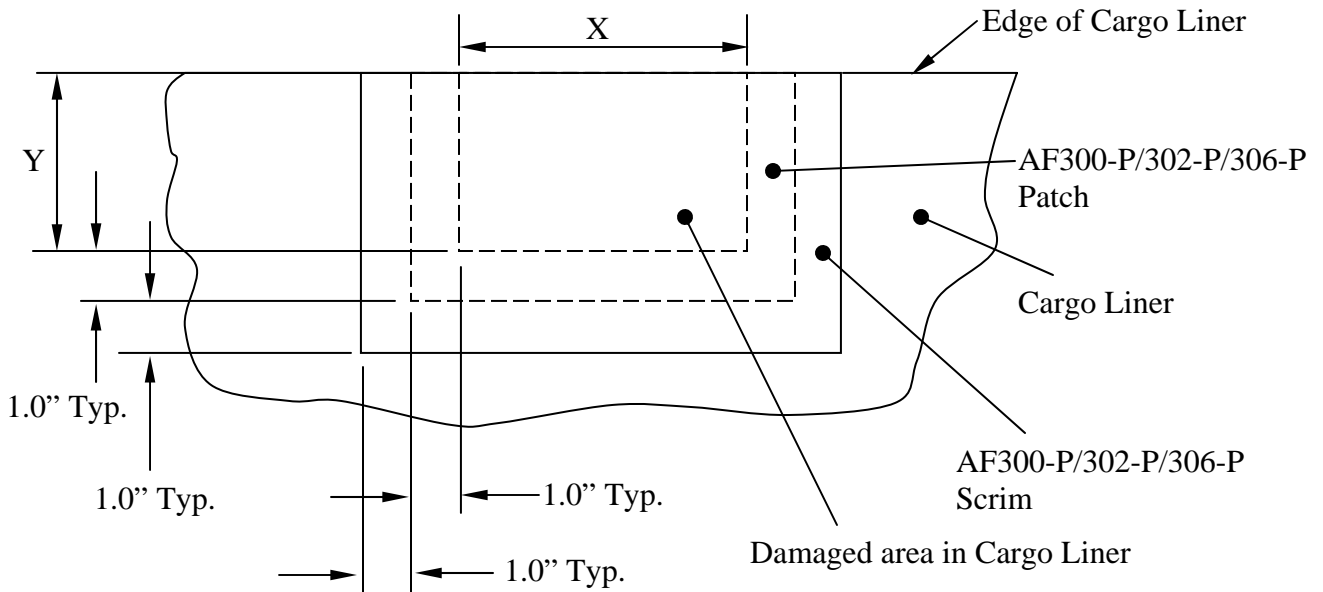
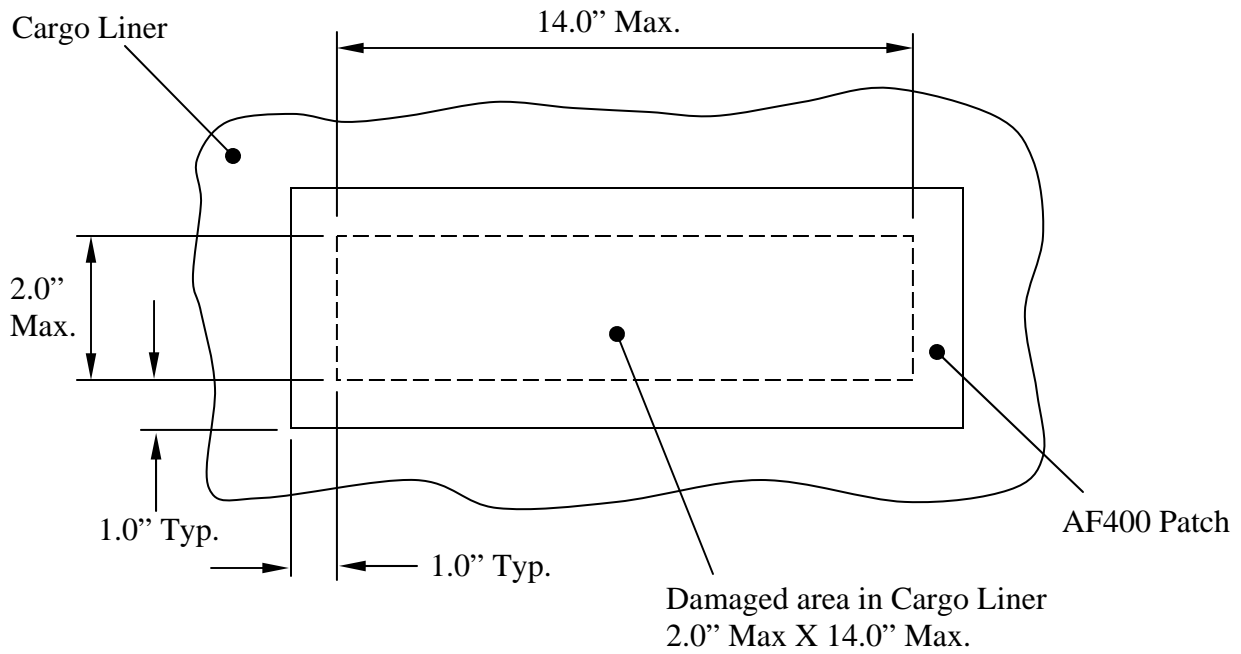
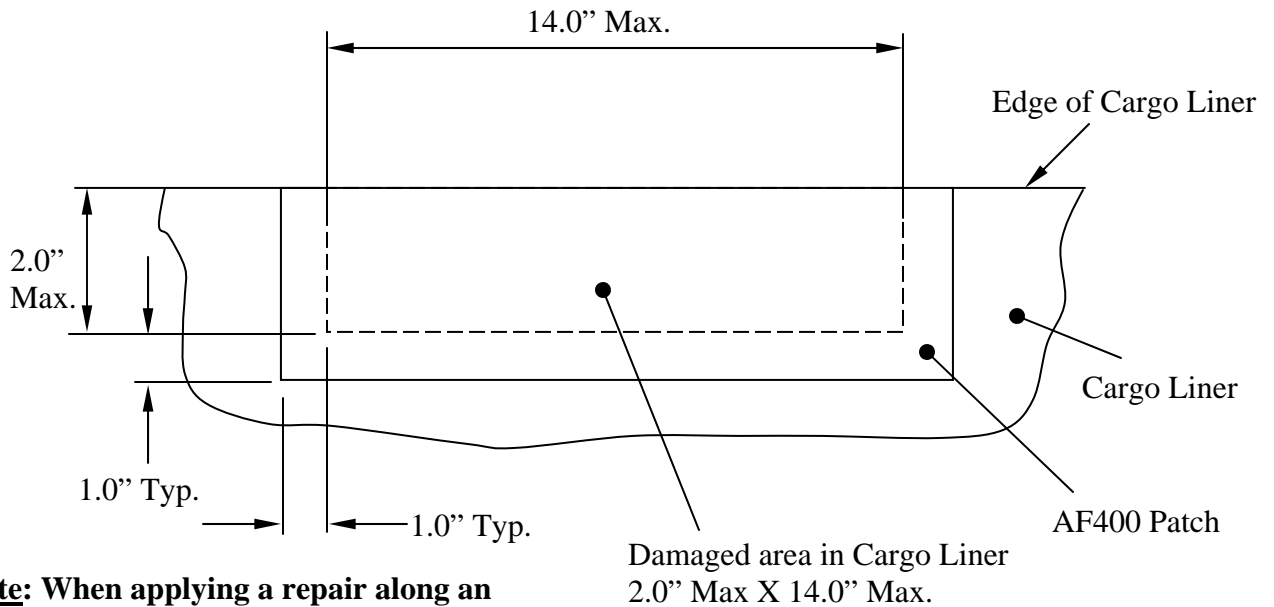


Figure 8: Installation of AF300-P, AF302-P, or AF 306-P Patches Along the “Edge” of the Cargo Liner

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**Figure 9: Installation of an AF400 Patch in a “Central” Area of the Cargo Liner**



**Note:** When applying a repair along an edge, temporary backing material must be used. See Note 8 on Sheet 4.

**Figure 10: Installation of an AF400 Patch Along the “Edge” of the Cargo Liner**