

FIELD REPAIR / ALTERATION

CIRRUS DESIGN CORPORATION

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AUTHOR:	SAMUEL L HORNE	CHANGE CLASS:	MINOR	REPAIR #	FRA00017030
Name:	FLOOR CRACK	REASONS AND REMARKS: DAMAGE TO RIGHT-HAND AFT FLOOR. REFERENCE FSR-822.		Models Affected	ASN# Impacted
Description:	RIGHT-HAND AFT FLOOR CRACK			SR22	1167
DOCUMENT TYPE:	FIELD REPAIR			n/a	
				n/a	

NOTICE:

THE REPAIRS HEREIN ARE PROVIDED SPECIFIC TO DAMAGE REPORTED TO CIRRUS AIRCRAFT. OTHER DAMAGE MAY BE PRESENT AND IT IS THE RESPONSIBILITY OF THE MAINTENANCE PERSONNEL OR ORGANIZATION TO ASSESS ANY ADDITIONAL DAMAGE AND REPLACE DISCREPANT PART(S). KNOWN DAMAGED PARTS WHICH CAN BE REPLACED IN ACCORDANCE WITH APPROVED METHODS SHOULD BE ADDRESSED AND MAY NOT BE ADDRESSED SPECIFICALLY IN THIS REPAIR.

SUMMARY:

1. GENERAL REQUIREMENTS:
 - >> CAUTION: READ INSTRUCTIONS COMPLETELY AND THOROUGHLY BEFORE BEGINNING THIS REPAIR.<<
 - A. FOLLOW PRACTICES DEFINED IN DOCUMENT 13773-001, "SR22 AND SR22T AIRPLANE MAINTENANCE MANUAL" (AMM), CHAPTER 51.
 - B. AFFECTED EMM SHALL BE REMOVED PRIOR TO ACCOMPLISHMENT OF THIS REPAIR AND REPLACED AFTERWARDS PER AMM 51-20.
 - C. TAKE EXTREME CARE TO PREVENT ADDITIONAL DAMAGE TO THE AIRCRAFT STRUCTURE OR SYSTEMS.
2. PROCURE FROM CIRRUS AIRCRAFT:
 - A. 52005-003: SHIM, STOCK, PRECURE, QUASI-ISO, 3-PLY, SIZE 12" X 16" (CLEARLY MARK 0° ORIENTATION) – QUANTITY 1.
 - B. 29292-001: FLOOR, AFT, FUSELAGE – QUANTITY 1.
3. AFT FLOOR DAMAGE REMOVAL.
4. AFT FLOOR BOND FLANGE INSTALLATION.
5. AFT FLOOR REPAIR SECTION INSTALLATION.
6. AFT FLOOR TOOLSIDE REPAIR.
7. AFT FLOOR TOOLSIDE WET-LAY.
8. AFT FLOOR BAGSIDE WET-LAY.
9. RE-DRILL AFFECTED HOLES.

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** Release Date: 2021-09-16 14:09:43 CDT **

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AFT FLOOR DAMAGE REMOVAL:

1. REMOVE ALL AFT ATTACH FITTINGS AND HARDWARE FROM DAMAGED SIDE OF AFT FLOOR.
2. REMOVE DAMAGED SECTION OF AFT FLOOR. REFER TO FIGURE 1.
 - A. CUT THROUGH FULL THICKNESS AFT FLOOR WHERE SHOWN IN FIGURE 1.

****NOTE: TAKE CARE NOT TO DAMAGE FUSELAGE SKIN DURING REMOVAL.****

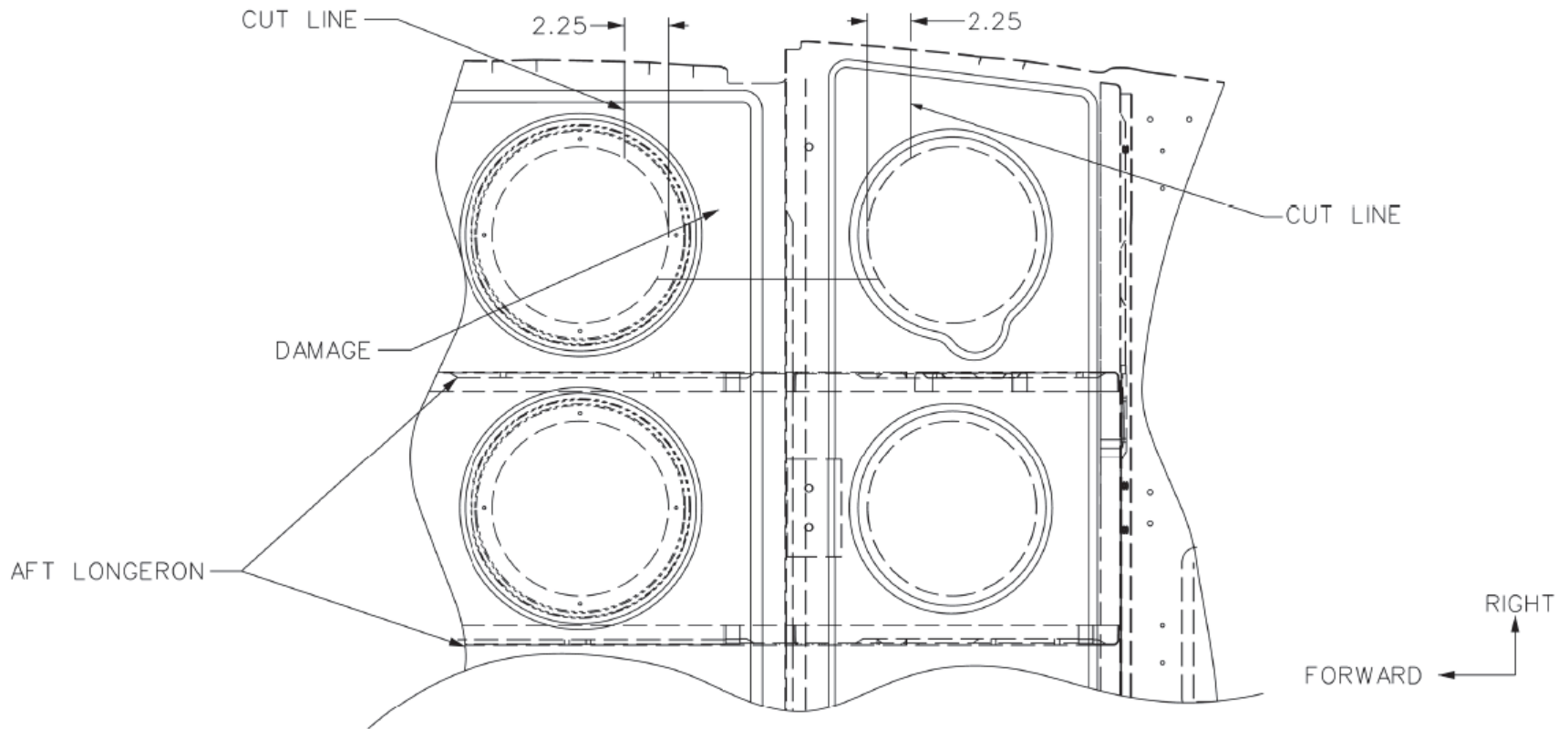


FIGURE 1
AFT FLOOR DAMAGE REMOVAL AREA
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AFT FLOOR BOND FLANGE INSTALLATION:

1. FABRICATE BOND FLANGES FOR AFT FLOOR REPAIR SECTION. REFER TO FIGURE 2.
 - A. USE 52005-003 TO FABRICATE FLANGES. ORIENT PRECURE 0° W.R.T ROSETTE IN FIGURE 2.
2. PREPARE FAYING SURFACES FOR BONDING PER AMM 51-20, "REPAIR SURFACE PREPARATION."
 - A. PREPARE THE FAYING SURFACES ON THE AFT FLOOR AND PRECURE BOND FLANGES.
 - B. PREPARE SURFACES BEYOND THE AREAS TO BE BONDED TO ENSURE PROPER ADHESION.
3. BOND PRECURE BOND FLANGES TO BAGSIDE SURFACE OF AFT FLOOR.
 - A. USE STRUCTURAL ADHESIVE PER AMM 51-30: PTM&W ES6292-A/B.
 - B. MIX ADHESIVE PER AMM 51-30, "STRUCTURAL REPAIR SYSTEM."
 - C. APPLY ADHESIVE PER AMM 51-30 "REPAIR PROCESSES."
 - D. ACHIEVE BOND THICKNESS OF 0.005" (MINIMUM) AND 0.060" (MAXIMUM).
 - E. SECURE PRECURE BOND FLANGES IN POSITION WITH FIXTURING AS REQUIRED TO PREVENT MOVEMENT DURING CURE.

****NOTE: MOVEMENT DURING CURE WILL CAUSE BOND VOIDS.****
4. CURE PRECURE FLANGE BONDS CURE PER AMM 51-20.

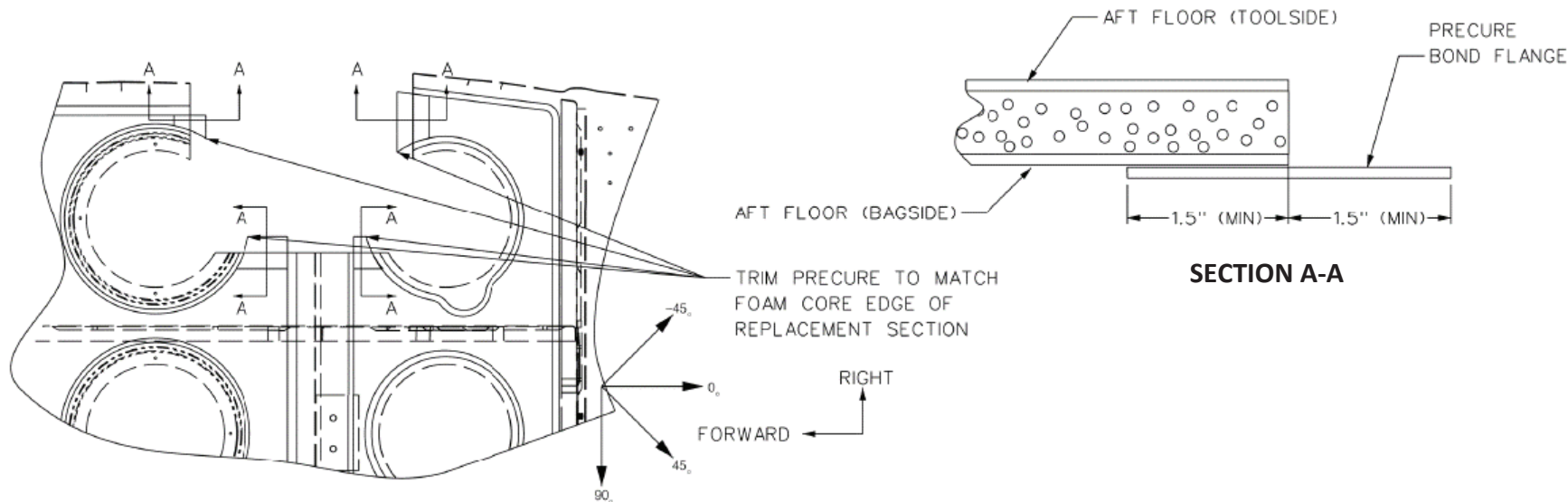


FIGURE 2
 PRECURE BOND FLANGE INSTALLATION
 VIEW LOOKING DOWN ON INTERIOR AFT FLOOR
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AFT FLOOR REPAIR SECTION INSTALLATION:

1. FIT REPAIR SECTION TO AFT FLOOR. REFER TO FIGURE 3.
 - A. TRIM AFT FLOOR REPAIR SECTION TO FIT INTO OPENING IN FIGURE 1.
 - B. SAND PERIMETER OF REPAIR SECTION AS REQUIRED TO FIT.
 - C. MAXIMUM GAP OF 0.10" AROUND PERIMETER OF REPAIR SECTION IS PERMISSIBLE.
2. PERPREARE FAYING SURFACES FOR BONDING PER AMM 51-20, "REPAIR SURFACE PREPARATION."
 - A. PREPARE THE FAYING SURFACES ON THE AFT FLOOR BOND FLANGES, FUSELAGE SKIN, AND REPAIR SECTION.
 - B. PREPARE AREAS SUFFICIENTLY BEYOND BOND AREA TO ENSURE PROPER ADHESION.
3. BOND REPAIR SECTION TO AFT FLOOR AND FUSELAGE SKIN.
 - A. USE STRUCTURAL ADHESIVE PER AMM 51-30: PTM&W ES6292-A/B.
 - B. MIX ADHESIVE PER AMM 51-30, "STRUCTURAL REPAIR SYSTEM."
 - C. APPLY ADHESIVE PER AMM 51-30, "REPAIR PROCESSES."
 - D. ACHIEVE BOND THICKNESS OF 0.005" (MINIMUM) AND 0.080" (MAXIMUM).
 - E. SECURE REPAIR SECTION IN PLACE WITH FIXTURING AS REQUIRED TO PREVENT MOVEMENT DURING CURE.

****NOTE: MOVEMENT DURING CURE WILL CAUSE BOND VOIDS.****
4. CURE BOND PER AMM 51-20.

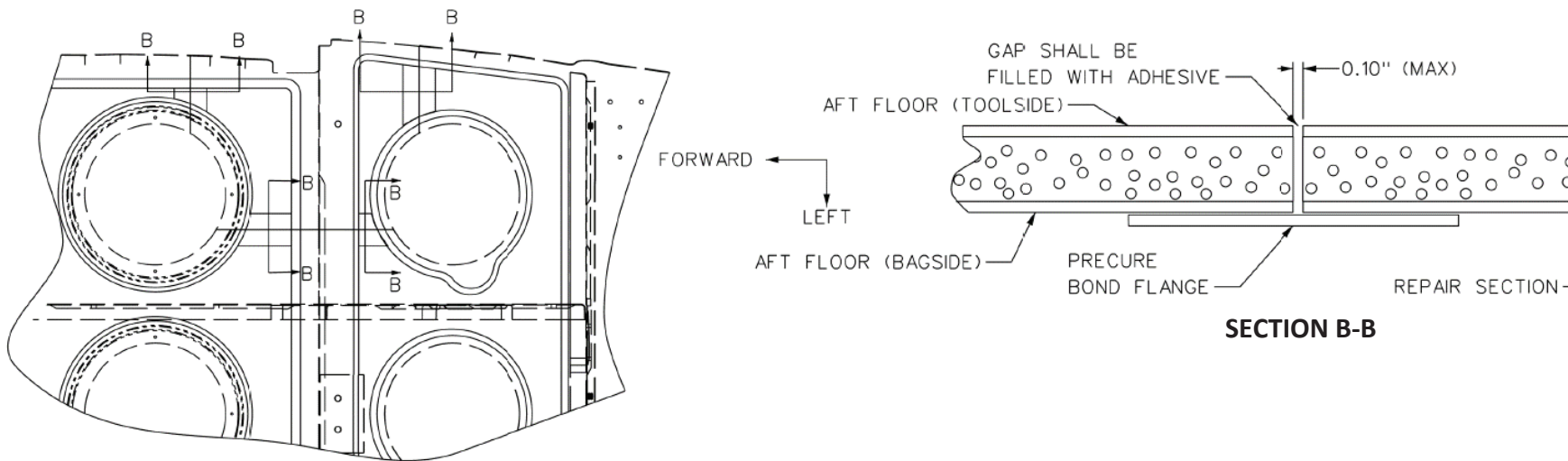


FIGURE 3
 REPAIR SECTION INSTALLATION
 VIEW LOOKING DOWN ON INTERIOR AFT FLOOR
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AFT FLOOR TOOLSIDE REPAIR:

1. FABRICATE PRECURE REPAIR PATCH FOR AFT FLOOR TOOLSIDE SURFACE. REFER TO FIGURE 4.
 - A. USE 52005-003 TO FABRICATE PRECURE REPAIR PATCH. ALIGN 0° OF PRECURE PATCH W.R.T. ROSETTE IN FIGURE 4.
 - B. OVERLAP REPAIR SECTION SEAM AND DOUBLER PLATE FASTENER HOLES IN INBOARD AND OUTBOARD DIRECTIONS BY 2.0" (MINIMUM), AND BUTT TO RADIUS TANGENTS IN UPPER AND LOWER DIRECTIONS.
2. PREPARE FAYING SURFACES FOR BONDING PER AMM 51-20, "REPAIR SURFACE PREPARATION."
 - A. PREPARE THE FAYING SURFACES ON THE AFT FLOOR TOOLSIDE SURFACE AND PRECURE PATCH.
 - B. PREPARE SURFACE SUFFICIENTLY BEYOND THE BOND AREA TO ENSURE PROPER ADHESION.
3. BOND PRECURE PATCH TO AFT FLOOR TOOLSIDE SURFACE.
 - A. USE STRUCTURAL ADHESIVE PER AMM 51-30: PTM&W ES6292-A/B.
 - B. MIX ADHESIVE PER AMM 51-30, "STRUCTURAL REPAIR SYSTEM."
 - C. APPLY ADHESIVE PER AMM 51-30 "REPAIR PROCESSES."
 - D. ACHIEVE BOND THICKNESS OF 0.005" (MINIMUM) TO 0.060" (MAXIMUM).
 - E. SECURE PRECURE PATCH IN POSITION AS REQUIRED TO PREVENT MOVEMENT DURING CURE.

****NOTE: MOVEMENT DURING CURE WILL CAUSE BOND VOIDS.****
4. CURE BOND PER AMM 51-20.

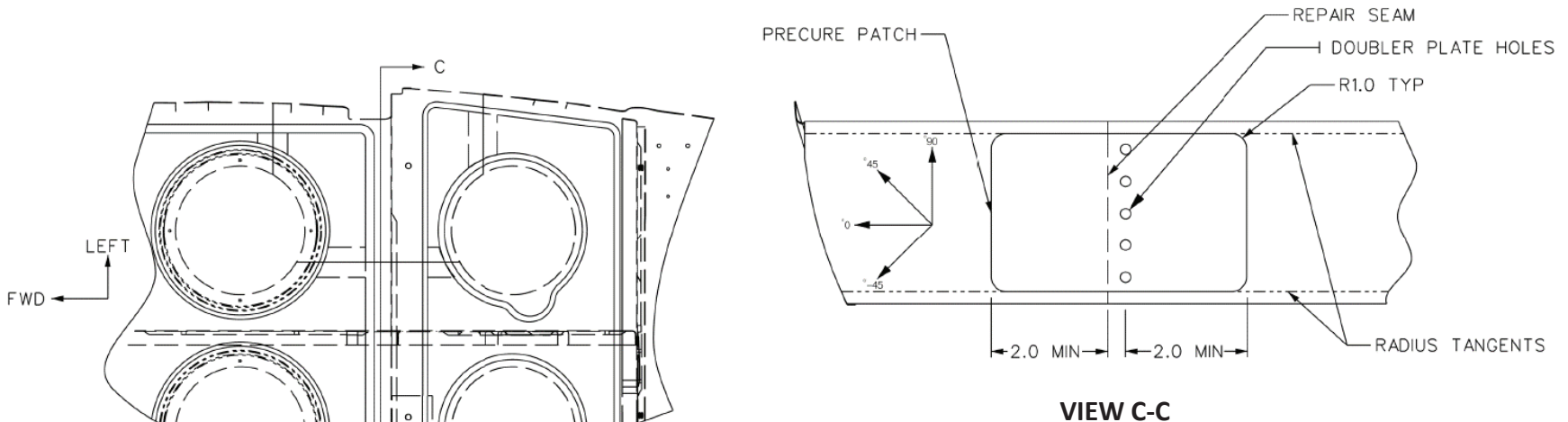


FIGURE 4
 AFT TOOLSIDE PRECURE PATCH
 VIEW LOOKING DOWN ON INTERIOR AFT FLOOR
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AFT FLOOR TOOLSIDE WET-LAY:

1. FABRICATE THREE (3) REPAIR PLYS FOR THE AFT FLOOR TOOLSIDE SURFACE. REFER TO FIGURE 5.
 - A. USE STRUCTURAL FABRIC PER AMM 51-30: HEXCEL 7781/F16.
 - B. ORIENT REPAIR PLYS AS FOLLOWS (IN ORDER OF PLY APPLICATION): +45°/ 0°/-45° W.R.T. ROSETTE IN FIGURE 5.
 - C. FOR FIRST PLY, MAINTAIN 0.25" (MINIMUM) OVERLAP BEYOND PRECURE PATCH AND REPAIR SECTION SEAMS IN ALL DIRECTIONS UNLESS NOTED OTHERWISE.
 - i. BUTT PLY TO ACCESS PANEL(S).
 - D. FOR SUBSEQUENT PLYS, MAINTAIN 0.25" (MINIMUM) OVERLAP BEYOND PRECEDING PLYS IN ALL DIRECTIONS UNLESS NOTED OTHERWISE.
 - i. BUTT PLYS TO ACCESS PANEL(S).
2. PREPARE THE AREA FOR WET-LAY PER AMM 51-20, "REPAIR SURFACE PREPARATION."
 - A. PREPARE SURFACES SUFFICIENTLY BEYOND THE AREA OF THE LARGEST REPAIR PLY TO ENSURE PROPER ADHESION.
3. WET-LAY REPAIR PLYS ONTO AFT FLOOR TOOLSIDE SURFACE.
 - A. USE STRUCTURAL RESIN SYSTEM PER AMM 51-30: L285/H287.
4. CURE WET-LAY PER AMM 51-20.

AFT FLOOR BAGSIDE WET-LAY:

1. FABRICATE THREE (3) REPAIR PLYS FOR THE AFT FLOOR BAGSIDE SURFACE. REFER TO FIGURE 5.
 - A. USE STRUCTURAL FABRIC PER AMM 51-30: HEXCEL 7781/F16.
 - B. ORIENT REPAIR PLYS AS FOLLOWS (IN ORDER OF PLY APPLICATION): +45°/ 0°/-45° W.R.T. ROSETTE IN FIGURE 5.
 - C. FOR FIRST PLY, MAINTAIN 0.25" (MINIMUM) OVERLAP BEYOND PRECURE PATCH, REPAIR SEAMS, AND DOUBLER PLATE FASTENER HOLES IN ALL DIRECTIONS UNLESS NOTED OTHERWISE.
 - i. BUTT PLY TO ACCESS PANEL(S).
 - D. FOR SUBSEQUENT PLYS, MAINTAIN 0.25" (MINIMUM) OVERLAP BEYOND PRECEDING PLYS IN ALL DIRECTIONS UNLESS NOTED OTHERWISE.
 - i. BUTT PLYS TO ACCESS PANEL(S).
2. PREPARE THE AREA FOR WET-LAY PER AMM 51-20, "REPAIR SURFACE PREPARATION."
 - A. PREPARE SURFACES SUFFICIENTLY BEYOND THE AREA OF THE LARGEST REPAIR PLY TO ENSURE PROPER ADHESION.
3. FILL REMAINING HOLES FROM TEMPORARY REPAIR DOUBLER WITH FILLER PASTE.
 - A. MIX AND APPLY FILLER PASTE PER AMM 51-20, "FILLER PASTE APPLICATION."
 - i. USE STRUCTURAL RESIN SYSTEM PER AMM 51-30: L285/H287.
 - B. INITIAL CURE FILLER PASTE PER AMM 51-20.
4. WET-LAY REPAIR PLYS ONTO AFT FLOOR BAGSIDE SURFACE.
 - A. USE STRUCTURAL RESIN SYSTEM PER AMM 51-30: L285/H287.
5. CURE WET-LAY PER AMM 51-20.

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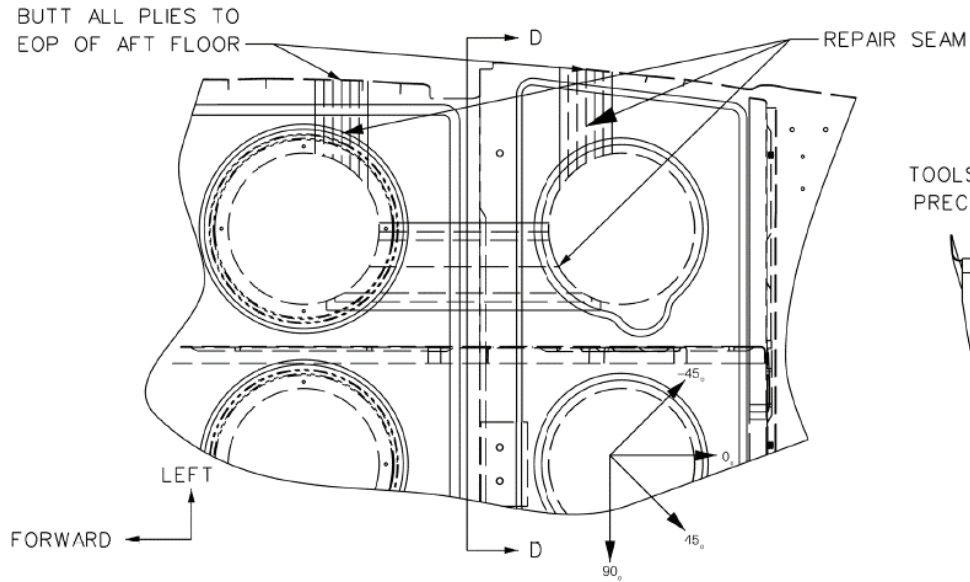
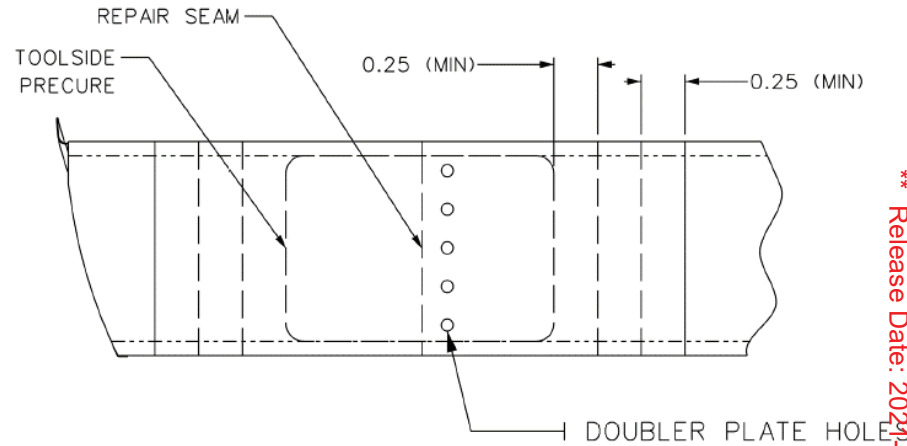


FIGURE 5

AFT TOOLSIDE AND BAGSIDE WET-LAYS
 VIEW LOOKING DOWN ON INTERIOR AFT FLOOR
 NTS



VIEW D-D

RE-DRILL AFFECTED HOLES:

1. BACKLIGHT AND MATCH-DRILL ALL HOLES COVERED BY WET-LAY PLYS AND/OR PRECURE PATCH.

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 ** Release To: Cirrus Approved - Revision: A.7 **
 ** Release Date: 2024-09-16 14:09:43 CDT **