BOMBARDIER
Toronto (de Havilland)
PROPRIETARY INFORMATION

PPS 27.09

PRODUCTION PROCESS STANDARD

REPAIR OF SURFACE DEFECTS IN ALUMINUM ALLOY TUBING

Issue 4
- This standard supersedes PPS 27.09, Issue 3.
- Vertical lines in the left hand margin indicate changes over the previous issue.
- Direct PPS related questions to PPS.Group@aero.bombardier.com or (416) 375-4365.
- This PPS is effective as of the distribution date.

Prepared By:	(Michael Wright)	September 7, 2011
	Production Process Standards (PPS)	
Approved By:	(L.K. John)	September 8, 2011
	Materials Technology	
	(B. DeVreede)	September 12, 2011
	Quality	

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1 SCOPE

1.1 This Production Process Standard (PPS) specifies the procedure and requirements for the removal of surface defects from special surface quality aluminum alloy tubing purchased to DHMS M2.21.

1.1.1 This PPS complements the engineering drawings that specify its use as an authorized instruction. The procedure specified in this PPS must be followed to ensure compliance with all applicable specifications. In general, if this PPS conflicts with the engineering drawing, follow the engineering drawing. The requirements specified in this PPS are necessary to fulfil the engineering design and reliability objectives.

1.1.2 Refer to PPS 13.26 for the subcontractor provisions applicable to this PPS.

1.1.3 Procedure or requirements specified in a Bombardier BAPS, MPS, LES or P. Spec. **do not** supersede the procedure or requirements specified in this PPS. Similarly, the procedure and requirements specified in this PPS are not applicable when use of a BAPS, MPS, LES or P. Spec. is specified.

2 HAZARDOUS MATERIALS

2.1 Before receipt at Bombardier Toronto (de Havilland), all materials must be approved and assigned Material Safety Data Sheet (MSDS) numbers by the Bombardier Toronto (de Havilland) Environment, Health and Safety Department. Refer to the manufacturer's MSDS for specific safety data on any of the materials specified in this PPS. If the MSDS is not available, contact the Bombardier Toronto (de Havilland) Environment, Health and Safety Department.

3 REFERENCES

3.1 PPS 13.26 - General Subcontractor Provisions.

3.2 PPS 25.55 - Bonding using DHMS A6.11 Type II Class 1 Adhesive.

3.3 PPS 32.03 - Chromic Acid Anodizing.

4 MATERIALS AND EQUIPMENT

4.1 Materials

4.1.1 Polishing Material, 3M Scotch Brite, Type A, Fine.

4.1.2 DHMS A6.11 Type II Class 1.

4.1.3 Sanding Disc, 3" diameter.

4.2 Equipment

4.2.1 Bombardier approved safety glasses.

4.2.2 Pneumatic drillmotor.

5 PROCEDURE

5.1 General

5.1.1 Refer all DHMS M2.21 aluminum alloy tubing with surface defects in excess of the limits specified by DHMS M2.21 to the Bombardier Toronto (de Havilland) MRB or Bombardier Toronto (de Havilland) delegated MRB for authorization to rework according to this PPS.

5.1.2 Refer all DHMS M2.21 aluminum alloy tubing which exhibits any surface defects within 3" of either end after having been fluorescent penetrant inspected according to PPS 20.03 (before magneforming) to Bombardier Toronto (de Havilland) MRB or Bombardier Toronto (de Havilland) delegated MRB for authorization to rework according to this PPS.

5.2 Preparation of Scotch Brite Polishing Discs

5.2.1 Prepare Scotch Brite polishing discs by bonding two layers of Scotch Brite to a sanding disc using DHMS A6.11 Type II Class 1 according to PPS 25.55. Trim the Scotch Brite so that it is approximately 1/16" larger than the sanding disc to which it is bonded.

5.3 Reworking of Defects

5.3.1 Blend out the defect using a Scotch Brite polishing disc mounted in a suitable pneumatic drillmotor. Operate the drillmotor so that the abrasive action of the polishing disc is at right angles to the defect. Only remove sufficient material to ensure complete removal of the defect.

5.4 Post Rework Procedure

5.4.1 Prepare tubing which has been repaired after anodizing for re-anodizing according to PPS 32.03 as follows:

Step 1. Using a Scotch Brite polishing disc, remove a 1/2" to 1" wide ring of the anodic coating around the tube circumference 6" to 12" from the tube end.

Step 2. Use a clean cloth to solvent clean all residue from the surface as specified by PPS 31.17.

6 REQUIREMENTS

6.1 Ensure defects have been completely removed.

6.2 Ensure that the tube thickness remains within the limits specified by the Bombardier Toronto (de Havilland) MRB or Bombardier Toronto (de Havilland) delegated MRB.

6.3 Parts repaired in the detail stage before any finish has been applied shall be finished to the detail drawing requirements on completion of rework.

6.4 Parts repaired after anodizing shall be re-anodized as specified in section 5.4 on completion of the rework.

7 SAFETY PRECAUTIONS

7.1 Wear safety glasses when using Scotch Brite polishing discs.

8 PERSONNEL REQUIREMENTS

8.1 Personnel responsible for the removal of surface defects from special surface quality aluminum alloy tubing purchased to DHMS M2.21 must have a good working knowledge of the procedure and requirements as specified herein and shall have exhibited their familiarity to their supervisor.