DE HAVILLAND AIRCRAFT OF CANADA LIMITED

BOMBARDIER

Toronto Site

PPS 13.39 - DASH 8 & LEAR 45 CRITICAL AND SPECIAL PROCESSES PPS INDEX

Issue 8
- This standard supersedes PPS 13.39, Issue 7.
- Extensive changes have been made at this issue and, therefore, detail changes have not been noted.
- Direct PPS related questions to christie.chung@dehavilland.com or (416) 375-7641.
- This PPS is effective as of the distribution date.

THIS PPS IS CO-OWNED BY DE HAVILLAND AIRCRAFT OF CANADA LIMITED AND BOMBARDIER INC.

Prepared By:	(Christie Chung)	November 20, 2020
	De Havilland Canada PPS Group	
Approved By:	(Stephen Mabee)	November 23, 2020
	De Havilland Canada M&P Engineering	
	(*Denise Luk* for Kenneth Quon)	November 24, 2020
	Bombardier Inc. M&P Engineering	

Issue 8 - Summary of Changes (over the previous issue)

The following summaries are not detailed and are intended only to assist in alerting PPS users to changes which may affect them; refer to the applicable sections of this PPS for detailed procedure and requirements.

- Revised PPS title to be more reflective of PPS content.
- Specified this is a jointly owned PPS by both De Havilland Aircraft of Canada Limited and Bombardier Inc.
- Specified PPS 10.20, Set-Up and Operation of the Waterjet, is a controlled special process.
- Specified PPS 20.11, Ultrasonic Thickness Measurement, is a controlled special process.
- Specified use of BAPS 176-017, Radiographic Inspection, at frozen Revision A. Ref. Note 2 of Table I.

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1 SCOPE

1.1 This Production Process Standard (PPS) defines De Havilland Aircraft of Canada Limited (DHC) and Bombardier Inc. (BA) requirements for obtaining approval to parts processed per PPS requirements. Should conflicting information be stated elsewhere, the requirements as stated in this document shall take precedence.

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

1.2 This PPS is co-owned by De Havilland Aircraft of Canada Limited (DHC) and Bombardier Inc. (BA) due to its applicability for both the DHC DASH 8 and BA Lear 45 programs. Frozen revisions of Bombardier documents (e.g., BAPS, BAERD GEN, BAMS, etc.) specified herein apply only to the DASH 8 program.

1.3 For the purposes of this PPS, the term “Engineering” specified herein shall be considered to include DHC and BA Toronto Materials & Processes (M&P) Engineering, DHC Transport Canada Design Approval Designee (DAD), as applicable.

1.4 Qualification of a process is site and line specific and is not transferable under any circumstances.

1.4.1 Once a process is established and approved as specified herein, the approved process shall be adhered to. The approval shall be facility specific and shall not be transferred to another facility without Engineering approval as outlined herein. The process may require re-qualification if there is any technical changes (e.g., processing parameter, material, etc.) made to the initial approval. If unclear whether the change in question is technical in nature, contact Engineering prior to implementing such change on production parts.

1.4.2 For Critical and Special Processes, a desktop audit and/or facility self assessment is not sufficient nor acceptable.

1.5 The following are definitions of some key terms used throughout this document:

1.5.1 *Technical Auditor* - An Auditor performing an audit to PPS engineering requirements.

1.5.2 *Systems Auditor* - An Auditor performing an audit to Quality requirements.

1.5.3 *Technical Audit* - An audit performed by Engineering.

1.5.4 *Systems Audit* - An audit performed by a Systems Auditor, as listed on the DHC/BA Quality Register of approved auditors.

1.5.5 *Controlled Critical Process* - Non-destructive testing processes and processes that change the metallurgical properties for metallic parts are deemed Controlled Critical Processes. For metal bonded parts and composite parts, surface preparation and curing (time, temperature, and pressure) are deemed Critical Processes. These processes require process qualification, proper operator training and may include regulatory certifications, and special controls to consistently produce required results. These processes require Quality approval, a Technical Audit, and when stated Technical acceptance by Engineering of Facilities and Qualification Test report.

Upon a satisfactory controlled critical process technical audit, Engineering shall notify in writing to DHC or BA Supplier Quality Management (SQM), such that SQM can together with a satisfactory systems audit, provide the subcontractor an approval letter for the applicable process specifications.

In order to ensure ongoing compliance and adherence to engineering drawing and PPS requirements, regular ongoing detailed process audits are required.

- For composite and metal bonding processes (i.e., PPS 10.xx and PPS 36.xx), in particularly critical/primary structures, regular ongoing surveillance audits shall be performed a minimum of 2 years following initial approval until supplier confidence is established by DHC/BA at which time the surveillance audit may be reduced to a minimum of every 3 years. Additional tests may be requested at any time at the discretion of DHC/BA.
- For all other critical processes, such an audit shall be performed as requested by Engineering should it be deemed necessary by Engineering following the initial approval.

Personnel performing critical processes prescribed by Regulations or Engineering shall undergo training through theory, practice and formal evaluation. For regulated processes, re-certifications are mandatory. For other critical processes, periodic formal re-evaluations are necessary but may be replaced by a DHC/BA Quality approved instruction that ensure that competencies and performance are maintained through time. For subcontractors, training shall be approved by DHC/BA Quality.

All independent laboratories performing work to a critical process require a technical audit. In the case where a company has an on-site laboratory, the technical auditor auditing the process shall also perform the laboratory technical audit pertaining to the process being audited.

Examples of controlled critical processes are: High Strength Metal Bonding (PPS 36.xx), Magnetic Particle Inspection, Fluorescent Penetrant Inspection, Welding (Fusion welding and spot and seam welding), Heat Treatment of Ferrous and Non-Ferrous Alloys.

1.5.6 *Controlled Special Process* - Processes that involve but not limited to surface modification, surface treatment, and part condition relief or treatment for metallic parts are deemed Controlled Special Processes. Application of non-metallic materials for corrosion protection, bonding, or sealing is deemed Controlled Special Processes. Assembly and installation processes which may affect the operation and/or the reliability of an aircraft system or structure are also controlled special processes. Normally these processes require process qualification, specific operator training and close controls to consistently produce required results. These processes require Quality approval and when applicable Technical acceptance by Engineering of the Facilities and Qualification Test report.

Basic technical skills can be acquired through training given by an Aerospace educational institution or received in a recognized related field. Basic technical skills can be acquired through experience in Aerospace or a related field. Candidates will be evaluated to make sure that they have the skills required for the job category and the work place specific requirements. A Quality or HR instruction shall be in place to ensure that competencies and quality performance are maintained through time.
For subcontractors, training shall be approved by DHC/BA Quality.

Examples of controlled special processes are: Electrical Bonding of Aircraft, Application of Primer and Topcoats.

1.5.7 *Approval*: Acceptance of a processing source as a result of satisfactory Technical and/or Quality audits and/or Qualification reports.

1.5.8 *Processor/Processing Source*: The facility providing the required processes.

2 REFERENCES

2.1 PPS 13.26 - General Subcontractor Provisions.

3 APPLICABILITY

3.1 The requirements and conditions of this document apply to the processing and/or manufacturing of parts to the Production Process Standard (PPS) listed in Table I.

For PPS specifications not listed in Table I, DHC/BA Quality may elect to put in place instructions to ensure that competencies and quality performance are maintained through time.

Table I define those processes as “Controlled Critical Processes” or “Controlled Special Processes” requirements and “Engineering Signature” requirements (i.e., Engineering Signature required for approval of qualification package).

4 APPROVAL STATUS OF PROCESSING SOURCES

4.1 All processes and specific process approvals with limitations for the specifications listed in Table I are shown in the DHC/BA Aerospace Approved Supplier List (ASL).

4.2 Only approved subcontractors listed on the DHC/BA ASL shall be utilized to perform work to any special and/or critical processes with limitations as outlined in the DHC/BA ASL (i.e., the applicable PPS's and limitations on scope of work).

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 1.02	Forming Aluminum Alloys	SPECIAL	NO
PPS 1.03	Hot Joggling Aluminum Alloys	SPECIAL	NO
PPS 1.04	Modified Radius Dimpling Equipment	SPECIAL	NO
PPS 1.08	Magnetic Pulse Forming of End Fittings	SPECIAL	NO
PPS 1.13	Laser Cutting	CRITICAL	YES
PPS 1.34	Magnetic Pulse Forming of Tubes - Expansion and Compression	SPECIAL	NO
PPS 1.36	Forming of Titanium and Titanium Alloys	SPECIAL	NO
PPS 2.64	Installation of Potting Type Sandwich Panel Fasteners	CRITICAL	YES
PPS 2.70	Installation of Click Bond Adhesive Bonded Fasteners, Tie Mounts and Patches	SPECIAL	NO
PPS 3.02	Swaging Straight Shank Terminals	SPECIAL	NO
PPS 3.04	Swaging of Ball Terminals	SPECIAL	NO
PPS 3.05	Proof Loading Cable and Chain Assemblies	SPECIAL	NO
PPS 3.10	Brazing of Terminals to Steel Cables	SPECIAL	NO
PPS 6.10	Cleaning of Fluid System Components	SPECIAL	NO
PPS 6.13	Installation of Externally Swaged (Permaswage Type) Fittings	SPECIAL	NO
PPS 6.14	Swage Installation of Wiggins and Hydraflow Fittings	SPECIAL	NO
PPS 6.17	Repair of Hydraulic Lines using Externally Swaged (Permaswage Type) Fittings	SPECIAL	NO
PPS 6.18	Certification of Tooling used for Installation of Externally Swaged (Permaswage Type) Fittings	SPECIAL	NO
PPS 6.19	Installation of Internal Roller Swaged Fittings	SPECIAL	NO

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 6.20	Installation of Rynglok Swaged Fittings	SPECIAL	NO
PPS 6.21	Assembly and Installation of Quickfit Fittings	SPECIAL	NO
PPS 6.22	Assembly and Installation of Deutschlite Axial Swage Fittings	SPECIAL	NO
PPS 9.01	Crimping Electrical Terminal Lugs to Copper Wire	SPECIAL	NO
PPS 9.06	Electrical Bonding and Grounding of Aircraft Structures	SPECIAL	YES (NOTE 1)
PPS 9.09	Splicing Electrical Wires	SPECIAL	NO
PPS 9.19	Automatic Crimping of Size 16 - 22 Electrical Contacts	SPECIAL	NO
PPS 9.20	Crimping of Size 8 - 0 Electrical Contacts	SPECIAL	NO
PPS 9.35	Terminating and Splicing Aluminum Wire	SPECIAL	NO
PPS 9.36	Manual Crimping of Size 12 - 22 Contacts	SPECIAL	NO
PPS 9.39	Installation and Termination of Braided Shields for EMI & HIRF Protection of Wire Harnesses on Dash 8 Series 400 Aircraft	SPECIAL	YES (NOTE 1)
PPS 9.41	Termination of Individual Wire Shields at Glenair 550-003 & 557-581 Backshells	SPECIAL	YES (NOTE 1)
PPS 10.04	Wet Lay-Up of Glass Fabric/Polyester Resin Laminates	CRITICAL	YES
PPS 10.08	Forming Thermoplastic Sheet	CRITICAL	YES
PPS 10.10	Fabrication of Polyurethane Foam	CRITICAL	YES
PPS 10.12	Potting of Aircraft Parts and Assemblies	SPECIAL	NO
PPS 10.15	Wet Lay-Up Fabrication of Epoxy Resin/Glass Fabric Reinforced Laminates	CRITICAL	YES
PPS 10.17	Machining of Plastics	SPECIAL	NO
PPS 10.20	Set-Up and Operation of the Waterjet	SPECIAL	NO
PPS 10.21	Certification of Autoclaves	SPECIAL	YES
PPS 10.22	Preparation of Moulds	SPECIAL	NO
PPS 10.23	Storage, Handling and Preparation of Pre-Impregnated Materials	CRITICAL	YES
PPS 10.24	Preparation of Honeycomb Cores for Lay-Up in Sandwich Panel Assemblies	CRITICAL	YES
PPS 10.25	Storage and Application of Film Adhesives used in Composite Assemblies	CRITICAL	YES

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 10.26	Platen Press Curing of 250°F Cure, Epoxy Resin Pre-Impregnated, Fibre Reinforced Composite Parts	CRITICAL	YES
PPS 10.28	Assembly of Wire Thermocouples	SPECIAL	NO
PPS 10.30	Casting of Synthetic Resins	SPECIAL	NO
PPS 10.35	Fabrication of 250°F Cure, Epoxy Resin Pre-Impregnated, Fibre Reinforced Composite Parts	CRITICAL	YES
PPS 10.38	Repair of Decorative Film Covered Components	SPECIAL	NO
PPS 10.39	Machining of Fibre Reinforced Composite Parts	SPECIAL	NO
PPS 10.40	Repairs to Laminates & Sandwich Panels	CRITICAL	YES
PPS 10.43	Fabrication of 350°F Cure Epoxy Resin Pre-Impregnated, Fibre Reinforced Composite Parts	CRITICAL	YES
PPS 10.46	Application of Decorative Film	CRITICAL	YES
PPS 10.48	Fabrication of 280°F Cure, Phenolic Resin Pre-Impregnated, Fibre Reinforced Composite Parts	CRITICAL	YES
PPS 10.50	Cut and Fold Panel Structure Fabrication	CRITICAL	YES
PPS 10.51	Certification of Ovens	SPECIAL	YES
PPS 10.52	Certification of Platen Press	SPECIAL	YES
PPS 10.59	Manufacture of Net Resin System Epoxy Composite Components (179°C Autoclave Cure)	CRITICAL	YES
PPS 12.04	Installation of Interference Fit Bearings and Bushing using Liquid Nitrogen	SPECIAL	NO
PPS 17.03	Saturation Shot Peening	CRITICAL	YES
PPS 17.04	Shot Peen Forming	CRITICAL	YES
PPS 20.01	Magnetic Particle Inspection	CRITICAL	YES
PPS 20.03	Fluorescent Penetrant Inspection	CRITICAL	YES
PPS 20.04	Ultrasonic Inspection of Metals	CRITICAL	YES
PPS 20.05	Macro-Etch Examination of Machined or Ground, High-Strength Low Alloy Steels	SPECIAL	NO
PPS 20.06	Ultrasonic Inspection of Fibre Reinforced Composite Parts	CRITICAL	YES
PPS 20.07	Electrical Conductivity Testing of Aluminum Alloys	SPECIAL	NO

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 20.08	Hardness Testing of Metals	SPECIAL	NO
PPS 20.09	Eddy Current Crack Detection	CRITICAL	YES
PPS 20.10 (Note 2)	Radiographic Inspection	CRITICAL	YES
PPS 20.11	Ultrasonic Thickness Measurement	SPECIAL	NO
PPS 21.03	Priming, Sealing & Repair of Integral Fuel Tanks	SPECIAL	NO
PPS 21.20	Mixing and Handling Two-Part Sealants	SPECIAL	NO
PPS 21.21	General Sealing Practices	SPECIAL	NO
PPS 22.06	Screen Printing - Direct Process	Special	No
PPS 22.07	Screen Printing - Reverse Process	Special	No
PPS 22.12	Preparation of Gerber Labels	Special	No
PPS 24.01	Aluminum Wire Spray Coating (M1)	CRITICAL	YES
PPS 24.02	Ion Vapour Deposited Aluminum Coatings (M2)	CRITICAL	YES
PPS 24.04	Thermal Spray Deposition Coatings (M3)	CRITICAL	YES
PPS 25.08	Bonding using DHMS A6.10 Type II Adhesive	SPECIAL	NO
PPS 25.14	Bonding using DHMS A6.13 Adhesive	SPECIAL	NO
PPS 25.23	Bonding using DHMS A6.11 Type I Class 1 Adhesive	SPECIAL	NO
PPS 25.30	Bonding Using DHMS A6.09 Epoxy Adhesive	CRITICAL	YES
PPS 25.31	Bonding Using Bostik/Boscodur Adhesive	SPECIAL	NO
PPS 25.33	AQB-001 Aquabind Water Based Adhesive	SPECIAL	NO
PPS 25.50	Use of DSC 233 RTV Silicone Adhesive/Sealant	SPECIAL	NO
PPS 25.52	Bonding using DHMS A6.12 Type I Adhesive	CRITICAL	YES
PPS 25.53	Bonding using EC-2262 Adhesive	SPECIAL	NO
PPS 25.55	Bonding using DHMS A6.11 Type II Class 1 Adhesive	SPECIAL	NO
PPS 25.57	Application of DHMS A6.10 Type I Adhesive	SPECIAL	NO
PPS 25.63	Bonding using DHMS A6.11 Type I Class 2 Adhesive	SPECIAL	NO
PPS 30.01	Heat Treatment of Aluminum and Aluminum Alloys	CRITICAL	YES
PPS 30.02	Sub-Zero Treatment of Steel Parts	CRITICAL	YES
PPS 30.03	Heat Treatment and Control of 2024 (DD) Rivets	CRITICAL	YES

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 30.04	Steel Heat Treatment - Carbon and Low Alloy Steels	CRITICAL	YES
PPS 30.05	Steel Case Hardening - Gas Nitriding	CRITICAL	YES
PPS 30.06	Heat Treatment of Precipitation Hardenable (PH) Stainless Steels	CRITICAL	YES
PPS 30.07	Heat Treatment of Beryllium Copper Alloys	CRITICAL	YES
PPS 30.08	Heat Treatment of Martensitic Stainless Steels	CRITICAL	YES
PPS 30.10	Heat Treatment of Austenitic (Strain Hardenable) Stainless Steels	CRITICAL	YES
PPS 30.11	Steel Case Hardening (Carburizing)	CRITICAL	YES
PPS 30.12	General Steel Heat Treatment	CRITICAL	YES
PPS 30.13	Heat Treatment of Nickel and Nickel Alloys	CRITICAL	YES
PPS 30.14	Heat Treatment of Titanium and Titanium Alloys	CRITICAL	YES
PPS 30.16	Steel Case Hardening - Liquid Nitriding	CRITICAL	YES
PPS 30.17	Steel Case Hardening - Ion Nitriding	CRITICAL	YES
PPS 31.01	Cleaning of Aluminum and Aluminum Alloys for Resistance Welding	SPECIAL	NO
PPS 31.02	Cleaning Processes for Aluminum and Aluminum Alloys	SPECIAL	NO
PPS 31.03	Cleaning of Carbon and Low Alloy Steels	SPECIAL	NO
PPS 31.05	Surface Treatment of Corrosion Resistant Steel (C9)	SPECIAL	NO
PPS 31.06	Cleaning of Copper and Copper Alloys	SPECIAL	NO
PPS 31.07	Cleaning and Stripping of Painted Surfaces	SPECIAL	NO
PPS 31.09	Cleaning of Titanium and Titanium Alloys	SPECIAL	NO
PPS 31.11	Vapour Blast Cleaning	SPECIAL	NO
PPS 31.12	Cleaning Nickel and Nickel Alloys	SPECIAL	NO
PPS 31.13 (Note 3)	Cleaning Aluminum Alloys for High Strength Adhesive Bonding	CRITICAL	YES
PPS 31.14	Cleaning Aluminum Screen for Lay-Up in Composite Parts	SPECIAL	NO
PPS 32.01	C1 Chemical Conversion Coating of Aluminum and Titanium Alloys by Immersion	SPECIAL	NO

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 32.02	Manual Application of C1 Chemical Conversion Coatings	SPECIAL	NO
PPS 32.03	Chromic Acid Anodizing (A1)	CRITICAL	YES
PPS 32.04	Hard Anodizing (A2 and A6)	CRITICAL	YES
PPS 32.05	Colour or Colourless Anodizing - Sulphuric Acid Process (A3)	CRITICAL	YES
PPS 32.06	Application of Manganese Phosphate (C2) to Steel Parts	SPECIAL	NO
PPS 32.07	Corrosion Protection of Magnesium Alloys	SPECIAL	NO
PPS 32.08	Application of Zinc Phosphate Coatings to Plated Parts (C5)	SPECIAL	NO
PPS 32.09	Application of Dry Film Lubricants (C3, C7 and C8)	SPECIAL	NO
PPS 32.11 (Note 3)	Chromic Acid Anodizing for High Strength Adhesive Bonding	CRITICAL	YES
PPS 32.35	Chemical Conversion Coating for Low Electrical Resistance (C10)	SPECIAL	YES (NOTE 1)
PPS 32.36	Thin Film Sulphuric Acid Anodizing (A7)	CRITICAL	YES
PPS 33.01	Cadmium Plating (E1)	CRITICAL	YES
PPS 33.02	Removal of Metallic Coatings	SPECIAL	NO
PPS 33.03	Electro Deposited Nickel Plating (E3)	CRITICAL	YES
PPS 33.04	Hard Chromium Plating (E2 and E9)	CRITICAL	YES
PPS 33.05	Copper Plating (E7)	CRITICAL	YES
PPS 33.06	Electroless Nickel Plating (E4)	CRITICAL	YES
PPS 33.07	Satin Finish Decorative Chromium Plating	SPECIAL	NO
PPS 33.09	Electroless Nickel Boron Plating	CRITICAL	YES
PPS 33.11	Cadmium-Titanium Plating (E8)	CRITICAL	YES
PPS 33.12	Low Hydrogen Embrittlement Stylus Cadmium Plating	SPECIAL	NO
PPS 34.03	Application of Polyurethane Enamel	SPECIAL	NO
PPS 34.08	Application of Epoxy-Polyamide Primer (F19 and F45)	SPECIAL	NO
PPS 34.11	Priming and Painting of DASH 8 Aircraft Exterior Surfaces	SPECIAL	NO
PPS 34.16	Application of Urethane Compatible Primer (F23)	SPECIAL	NO

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 34.19	Application of F41 Anti-Static Coating	SPECIAL	NO
PPS 34.25	Application of the DHMS C4.30 Primer/Base Coat/Clear Coat Paint System (F47)	SPECIAL	NO
PPS 34.34	Surface Finishing Compounds (F33)	SPECIAL	NO
PPS 34.35	Application of Powder Coatings (F28)	SPECIAL	NO
PPS 34.41	Application of Epoxy-Polyamide Enamel (F22)	SPECIAL	NO
PPS 35.01	Macro Etch Inspection of Extruded Aluminum Alloy Bar and Rod	SPECIAL	NO
PPS 35.04	Requirements for Steel Forgings	CRITICAL	YES
PPS 35.07	Requirements for Investment and Sand Castings	CRITICAL	YES
PPS 35.08	Requirements for Aluminum Alloy Forgings	CRITICAL	YES
PPS 35.09	Requirements for Titanium Alloy Forgings	CRITICAL	YES
PPS 36.02	Bonding Balsa Core to Aluminum Alloy Sheet	CRITICAL	YES
PPS 36.07	Metal to Metal and Metal to Metal Honeycomb High Strength Bonding using DHMS A6.03 Adhesive Film and Primer	CRITICAL	YES
PPS 36.09	Bonding of Aluminum Pads to DASH 8 Wing Struts	CRITICAL	YES
PPS 36.10	Metal Bonding of de Havilland Parts to BAC 5555 and BAC 5514	CRITICAL	YES
PPS 37.01	Resistance Welding Aluminum Alloys	CRITICAL	YES
PPS 37.02	Resistance Welding of Non-Hardening Steels, Nickel Alloys and Titanium	CRITICAL	YES
PPS 37.03	Fusion Welding of Aluminum Alloys	CRITICAL	YES
PPS 37.04	Fusion Welding of Ferrous and Nickel Alloys	CRITICAL	YES
PPS 37.05	Fusion Welding of Titanium	CRITICAL	YES
PPS 37.06	Testing and Certification of Aircraft Fusion Welders	SPECIAL	NO
PPS 37.07	Brazing Processes	SPECIAL	NO
PPS 37.09	Special Welding Procedure	CRITICAL	YES
PPS 37.10	Requirements for Fusion Welds	CRITICAL	YES
PPS 37.11	Requirements for Resistance Welding	CRITICAL	YES
PPS 37.12	Qualification and Certification: Resistance Welding Machines	CRITICAL	YES
PPS 37.13	Induction Brazing	SPECIAL	NO

TABLE I - CATEGORIZATION OF PRODUCTION PROCESS STANDARDS (PPS)

SPECIFICATION	TITLE	CATEGORY	ENGINEERING SIGNATURE REQUIRED
PPS 37.16	Orbital Fusion Welding of Fittings to Titanium Tubing	CRITICAL	YES
PPS 39.06	Installation of DASH 8 Airframe De-Icer Boots	CRITICAL	YES
PPS 39.07	Installation of DASH 8 Air Intake De-Icer Boots	CRITICAL	YES
PPS 39.08	Replacement of Autoclave Bonded De-Icer Boots on DASH 8 Composite Leading Edges	CRITICAL	YES
PPS 42.01	Chemical Milling of Aluminum and Aluminum Alloys	CRITICAL	YES
PPS 42.06	Chemical Milling of Titanium and Titanium Alloys	CRITICAL	YES

Red shaded cells indicate Critical processes.

Yellow shaded cells indicate Special processes.

Note 1. This standard specifies manufacturing processes which are critical to the lightening protection and Transport Canada certification of DHC Aircraft. Therefore, the DHC Lightening/EMI/HIRF Transport Canada Design Approval Designee (DAD) approval and signature of the qualification package is required.

Note 2. Facilities approved to process parts according to BAPS 176-017, Rev. A, are considered approved to process parts according to PPS 20.10.

Note 3. Facilities approved to process parts according to PPS 36.07 are considered approved to process parts according to PPS 31.13 and PPS 32.11.