BOMBARDIER
Toronto (de Havilland)
PROPRIETARY INFORMATION

PPS 25.12

PRODUCTION PROCESS STANDARD

APPLICATION OF BOSTIK 1142 ADHESIVE

Issue 10 - This standard supersedes PPS 25.12, Issue 9.
- Vertical lines in the left hand margin indicate changes over the previous issue.

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This PPS is effective as of the distribution date specified on the accompanying distribution notice.

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1 SCOPE

1.1 This Production Process Standard (PPS) specifies the procedure and requirements for bonding aircraft parts and assemblies using Bostik 1142 adhesive.

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 13.13 - Personal Protective Respiratory Equipment.

3.2 PPS 13.26 - General Subcontractor Provisions.

3.3 PPS 13.28 - Storage Life of Adhesives, Sealants, Paints and Composite Products.

3.4 PPS 25.66 - Cleanliness Requirements for Application of Adhesives.

3.5 PPS 31.05 - Surface Treatment of Corrosion Resistant Steels.

3.6 PPS 31.17 - Solvent Usage.

3.7 PPS 32.08 - Application of Zinc Phosphate Coatings to Plated Parts.

4 MATERIALS AND EQUIPMENT

4.1 Materials

4.1.1 Aluminum oxide abrasive paper, 50 - 80 grit and 180 - 240 grit.

4.2 Equipment

4.2.1 Lint-free cotton gloves (e.g., DSC 422-1).

4.2.2 Cotton wiping cloths (e.g., DSC 378-2).

4.2.3 Suitable bristle brush.

4.2.4 Rubber or stitch roller.

5 PROCEDURE

5.1 Preparation of Parts

5.1.1 Do not touch the prepared surfaces with bare hands or contaminate the surface. Wear clean cotton gloves at all times when handling prepared bonding surfaces.

5.1.2 Prepare parts for bonding according to Table I.

TABLE I - PREPARATION OF PARTS FOR BONDING

MATERIAL	CLEANING PROCEDURE
Metal surfaces (bare or treated)	Step 1. Phosphate treat the bonding area on cadmium plated parts according to PPS 32.08. Step 2. Solvent clean the bonding area according to PPS 31.17.
Non-porous surfaces, except metal (fibreglass laminates, rubber, synthetic rubber, weatherbar, etc.)	Step 1. Lightly scuff the bonding surfaces with 180 to 240 grit abrasive paper. Step 2. Solvent clean the bonding area according to PPS 31.17.
Plastic surfaces	Solvent clean the bonding surfaces according to PPS 31.17.
Porous surfaces (felt, fabric, cloth tape, etc.)	Do not attempt to clean porous parts. Reject porous parts with contaminated bonding surfaces.
Wooden surfaces	Step 1. Lightly scuff the bonding surfaces with 50 to 80 grit abrasive paper. Step 2. Remove any sanding residue with a clean cloth.

5.2 Preparation of Adhesive

5.2.1 Immediately before use, stir the adhesive thoroughly.

5.3 Bonding

5.3.1 General

5.3.1.1 Perform bonding in a clean area according to PPS 25.66.

5.3.2 Open Time Method

5.3.2.1 Use the open time method if bonding plastic parts, porous materials or small areas.

5.3.2.2 Perform bonding according to the open time method as follows:

Step 1. Using a suitable bristle brush, apply a thin, even coat of adhesive to both bonding surfaces making as few strokes as possible.

Step 2. If necessary, apply two or more coats of adhesive to porous surfaces to ensure that sufficient adhesive remains on the surface. Allow each preceding coat to air dry until tack-free before the next coat is applied.

Step 3. Allow the final coat of adhesive to air dry until it is tacky, but does not transfer to the finger when touched lightly.

Step 4. Press the parts together and roll down with a rubber or stitch roller to ensure intimate contact over the full bonding surface.

5.3.3 Re-activation Method

5.3.3.1 The re-activation method is recommended if large areas of non-porous material are to be bonded or a strong intimate bond is desired.

5.3.3.2 Perform bonding according to the re-activation method as follows:

Step 1. Apply a thin, even coat of adhesive to both bonding surfaces using a suitable bristle brush making as few strokes as possible.

Step 2. If necessary, apply two or more coats of adhesive to porous surfaces to ensure sufficient adhesive remains on the surface. Allow each preceding coat to air dry until tack-free before the next coat is applied.

Step 3. Allow the final coat of adhesive to air dry completely.

Step 4. If the parts will not be bonded on the same shift as when the adhesive was applied, cover the adhesive coated surfaces with Kraft paper after the adhesive has dried to a tack-free condition.

Step 5. Re-activate the dry adhesive coating of the less porous material by wiping with a clean cloth dampened with the solvent specified in PPS 31.17.

Step 6. Immediately join the parts together and roll down with a rubber or stitch roller or press down firmly with the fingers to ensure intimate contact over the full bonding area.

5.4 Curing

5.4.1 Allow the bond to cure undisturbed for 24 hours minimum.

5.5 Clean-Up

5.5.1 Remove excess adhesive by solvent cleaning according to PPS 31.17.

6 REQUIREMENTS

6.1 Bonded parts and assemblies shall have intimate contact over the full bonding surface.

6.2 Visual indication of poor adhesion shall be cause for rejection.

6.3 Bonded assemblies shall be allowed to cure at room temperature (65° F minimum) for a minimum of 24 hours before being further worked or installed in the aircraft.

7 SAFETY PRECAUTIONS

7.1 Observe general shop safety precautions when performing the procedure specified herein.

7.2 Refer to PPS 31.17 for the safety precautions for handling and using solvents.

7.3 Keep adhesive away from fire and other sources of ignition.

7.4 Wear protective respiratory equipment according to PPS 13.13 when working with the adhesive in confined areas. Ensure sufficient ventilation is supplied at all times when using adhesive. Avoid inhalation of fumes or vapours from adhesive.

7.5 Wash hands thoroughly with soap and water immediately after using adhesive.

7.6 Avoid skin contact with adhesive. Do not use protective hand cream as it may contaminate cleaned or adhesive coated surfaces. If skin contact occurs, wash thoroughly with soap and water. If eye contact occurs, flush eyes immediately for 15 minutes minimum with large quantities of water at an eye wash station and report to the Health Centre.

8 PERSONNEL REQUIREMENTS

8.1 Personnel responsible for bonding aircraft parts and assemblies using Bostik 1142 adhesive must have a basic understanding of the procedure and requirements as specified herein and must have exhibited their familiarity to their supervisor.

9 STORAGE OF ADHESIVE

9.1 Store Bostik 1142 adhesive at a temperature of 60 to 80°F with the precautions necessary for flammable materials.

9.2 Keep containers or adhesive tightly closed when not in use.

9.3 Ensure that the containers are clearly stamped with the storage life expiry date. Refer to PPS 13.28 for the storage life of the adhesive.