

BOMBARDIER

Toronto Site

PROPRIETARY INFORMATION

PPS 25.33

PRODUCTION PROCESS STANDARD

AQB-001 AQUABIND WATER BASED ADHESIVE

- Issue 6
- This standard supersedes PPS 25.33, Issue 5.
 - Vertical lines in the left hand margin indicate changes over the previous issue.
 - Direct PPS related questions to christie.chung@aero.bombardier.com or (416) 375-7641.
 - This PPS is effective as of the distribution date.

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Quality

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1 SCOPE

- 1.1 This Production Process Standard (PPS) specifies the procedure and requirements for bonding fabric to interior furnishing panels using AQB-001 Aquabind water based adhesive.
 - 1.1.1 This PPS complements the engineering drawings that specify its use as an authorized instruction. The procedure specified in this PPS shall 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, all materials shall be approved and assigned Material Safety Data Sheet (MSDS) numbers by the Bombardier Toronto 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 Environment, Health and Safety Department.

3 REFERENCES

- 3.1 [PPS 13.26](#) - General Subcontractor Provisions.
- 3.2 [PPS 13.28](#) - Storage Life of Adhesives, Sealants, Paints and Composite Products.
- 3.3 [PPS 13.39](#) - Bombardier Toronto Engineering Process Manual.
- 3.4 [PPS 31.17](#) - Solvent Usage.

4 MATERIALS, EQUIPMENT AND FACILITIES

4.1 Materials

- 4.1.1 AQB-001 Aquabind water based adhesive (Manufacturer: Akzo Nobel).
- 4.1.2 Masking tape, 2" wide.

4.2 Equipment

- 4.2.1 Protective gloves, neoprene (e.g., DSC 422-5).
- 4.2.2 V-grooved trowel as shown in [Figure 1](#).
- 4.2.3 4" X 1" hard rubber or plastic roller.

4.3 Facilities

- 4.3.1 This PPS has been identified as a "Critical or Special" process according to [PPS 13.39](#) and as such only facilities specifically approved according to [PPS 13.39](#) are authorized to perform bonding fabric to interior furnishing panels using AQB-001 Aquabind water based adhesive according to this PPS.
- 4.3.2 Bombardier subcontractors shall direct requests for approval to Bombardier Aerospace Supplier Quality Management. Bombardier Aerospace facilities shall direct requests for approval to the appropriate internal Quality Manager.
- 4.3.3 Facility approval shall be based on a facility report, a facility survey and completion of a qualification test program, if required. The facility report shall detail the materials and equipment to be used, the process sequence to be followed and the laboratory facilities used to show compliance with the requirements of this PPS. Any deviation from the procedure or requirements of this PPS shall be detailed in the facility report. Based upon the facility report, Bombardier Toronto Engineering may identify additional qualification and/or process control test requirements. During the facility survey, the facility requesting qualification shall be prepared to demonstrate their capability. Once approved, no changes to subcontractor facilities may be made without prior written approval from Bombardier Aerospace Supplier Quality Management.
 - 4.3.3.1 For approval of subcontractor facilities to perform bonding fabric to interior furnishing panels using AQB-001 Aquabind water based adhesive according to this PPS, completion of a test program and submission of suitable test samples representative of production parts is required. Test samples shall meet the requirements specified in [section 6](#).

5 PROCEDURE

5.1 Preparation of Parts

- 5.1.1 In order to limit the spread of adhesive, mask off the perimeter of the bond area on the panel using 2" wide masking tape.
- 5.1.2 Immediately before applying the adhesive, solvent wipe the panel bonding surface according to [PPS 31.17](#).

5.2 Preparation of adhesive

- 5.2.1 Immediately before application, thoroughly stir the adhesive to a uniform consistency. If this consistency cannot be obtained, reject the adhesive.

5.3 Bonding

- 5.3.1 Perform bonding in a clean area as specified in [section 6.2](#).

- 5.3.2 Perform bonding using AQB-001 Aquabind adhesive as follows:

- Step 1. Apply 50 to 70 grams of adhesive for every square foot of bond area to the bond surface of both the panel and the fabric. Spread the adhesive uniformly over the bond area of both the panel and the fabric using a V-grooved trowel as shown [Figure 1](#).
- Step 2. Immediately after applying the adhesive to both bond surfaces, align the fabric in the correct position and starting at one end, press down lightly to tack the fabric in place.
- Step 3. Ensure that the fabric is free of bulges or wrinkles before rolling down firmly over the entire bond area using a roller (see [paragraph 4.2.3](#)).
- Step 4. Remove the masking tape immediately after rolling.
- Step 5. Allow the bonded assembly to cure for a minimum of 24 hours before further working or installing the assembly.

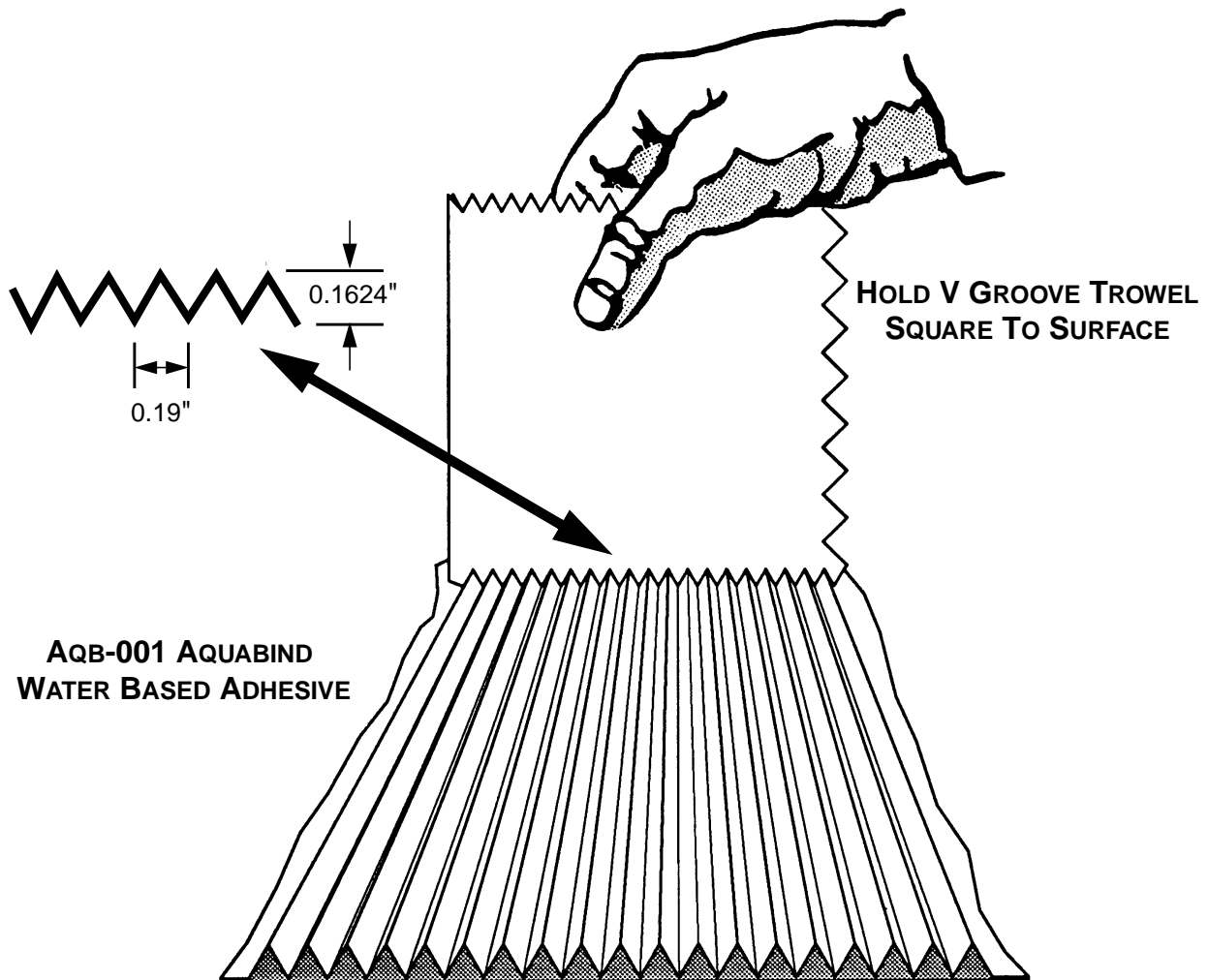


FIGURE 1 - APPLICATION OF ADHESIVE

5.4 Repair

5.4.1 If it is necessary to remove the bonded fabric from a panel for repair or replacement, proceed as follows.

- Step 1. Peel off the fabric from the panel starting at one edge or corner.
- Step 2. Remove all swarf or chips from the panel or fabric.
- Step 3. Remove the adhesive from the fabric and the panel using water or solvent wipe according to [PPS 31.17](#).
- Step 4. After repair or replacement, bond the fabric to the panel as specified in [section 5.3](#).

5.5 Clean-Up

- 5.5.1 Remove residual adhesive from equipment using water or solvent wiping according to [PPS 31.17](#).

6 REQUIREMENTS

6.1 General

- 6.1.1 Ensure the applied fabric is correctly positioned and firmly bonded to the panel over the entire surface.
- 6.1.2 The assembly shall not have any evidence of bulges, wrinkles, lack of adhesion or lifting of the fabric at the edges.
- 6.1.3 Ensure bonded assemblies have been cured for a minimum of 24 hours before being further worked or installed in the aircraft.

6.2 Bonding Area Conditions

- 6.2.1 The cleanliness of the bonding area (e.g., tables, floors, equipment, walls, etc.) shall be checked and cleaned as necessary to ensure that dust accumulation, dirt or other contamination will not be evident. Maintain records of dates of cleaning.
- 6.2.2 Maintain the temperature and relative humidity of the bonding areas within the range specified in [Figure 2](#). Bonding when the relative humidity is below 30% will increase the chance of static discharge and worker discomfort, but will not affect part quality.

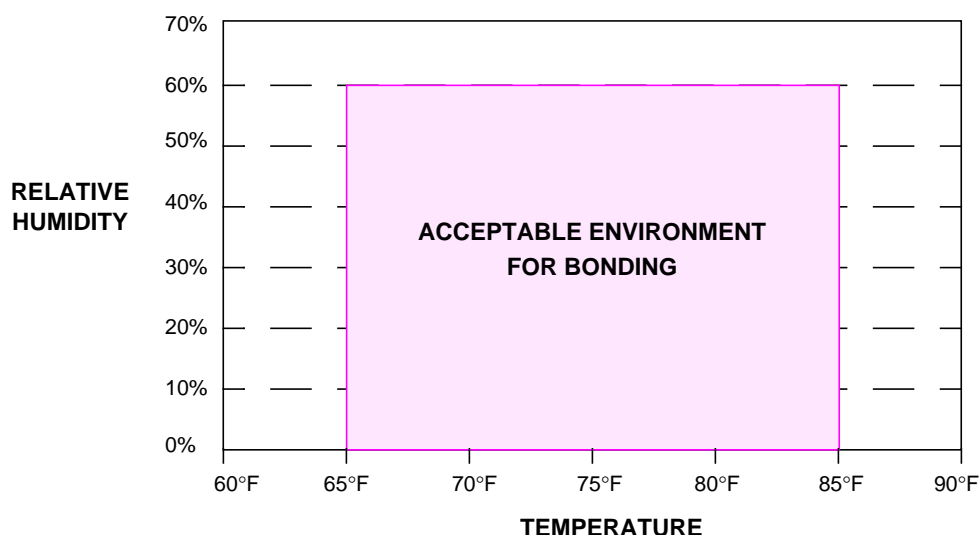


FIGURE 2 - TEMPERATURE AND HUMIDITY LIMITS

7 SAFETY PRECAUTIONS

- 7.1 *Observe standard plant 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 *Avoid skin contact with adhesive. If contact occurs, wash the contact area thoroughly with soap and water.*
- 7.4 *Avoid eye contact with adhesive. If eye contact occurs, immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure completed irrigation of all eye and lid tissue. Contact the Health Centre and a physician.*
- 7.5 *Avoid ingestion of adhesive. If ingestion occurs, seek immediate medical attention.*
- 7.6 *Exposure to AQB-101 Aquabind adhesive by inhalation is unlikely, but if irritation occurs, move affected personnel to fresh air.*
- 7.7 *Keep adhesive away from fire and other sources of ignition. If AQB-101 Aquabind adhesive is on fire, use a type A, B, C or combination type extinguisher.*

8 PERSONNEL REQUIREMENTS

- 8.1 This PPS has been categorized as a “Critical or Special Process” according to [PPS 13.39](#). Refer to [PPS 13.39](#) for personnel requirements.

9 STORAGE

- 9.1 Store AQB-001 Aquabind water based adhesive at a temperature of 60°F - 80°F (16°C - 26°C) to avoid coagulation and combustion respectively. Store adhesive according to the precautions necessary for flammable materials
- 9.2 Refer to [PPS 13.28](#) for the storage life of the adhesive components.
- 9.3 Clearly mark the storage life expiry date on each adhesive component container.
- 9.4 Keep adhesive component containers tightly closed when not in use.