



### ENVIRONMENTAL CONTROL REQUIREMENTS FOR HIGH STRENGTH BONDING ROOMS

- Issue 8
- This standard supersedes PPS 36.21, Issue 7.
  - PPS ACN 36.21/1 has been superseded in this or previous issues.
  - Vertical lines in the left hand margin indicate changes over the previous issue.

- THIS STANDARD SPECIFIES MANUFACTURING PROCESSES WHICH ARE CRITICAL TO THE STRUCTURAL INTEGRITY AND TRANSPORT CANADA CERTIFICATION OF BOMBARDIER AEROSPACE TORONTO AIRCRAFT.
- IT IS IMPERATIVE THAT THE PROCEDURE SPECIFIED HEREIN BE STRICTLY ADHERED TO.
- THE CURRENT ISSUE OF THIS PPS AND ANY SUBSEQUENT REVISIONS TO THE PROCEDURE AND REQUIREMENTS SPECIFIED HEREIN MUST BE AUTHORIZED BY AN UNDERSIGNED TRANSPORT CANADA DESIGN APPROVAL DESIGNEE (DAD).

(Erl Cromie, DAD 222)

May 11, 2004

Prepared By:

(Christie Chung)

April 27, 2004

Production Process Standards Group

Approved By:

(L.K. John)

April 29, 2004

Materials Technology

(W. Cleland)

May 4, 2004

Quality

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## 1 SCOPE

- 1.1 This Production Process Standard (PPS) specifies the cleanliness, temperature and humidity requirements applicable to all facilities carrying out high strength adhesive bonding for Bombardier Aerospace Toronto according to [PPS 36.01](#), [PPS 36.03](#), [PPS 36.04](#) or [PPS 36.07](#).
  - 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 Aerospace Process Specification (BAPS) or Bombardier Aerospace Montreal (Canadair) Materials and Processes Specification (MPS) **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 or MPS is specified.

## 2 HAZARDOUS MATERIALS

- 2.1 Before receipt at Bombardier Aerospace Toronto, all materials must be approved and assigned Material Safety Data Sheet (MSDS) numbers by the Bombardier Aerospace 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 Aerospace Toronto Environment, Health and Safety Department.

## 3 REFERENCES

- 3.1 ASTM F25 - Procedure for the Determination of Particle Count Method.
- 3.2 [PPS 13.26](#) - General Subcontractor Provisions.

## 4 MATERIALS AND EQUIPMENT

### 4.1 Materials

- 4.1.1 Protective wrapping, neutral Kraft paper.



## 4.2 Equipment

- 4.2.1 Temperature and humidity control equipment capable of maintaining the requirements specified herein.
- 4.2.2 Temperature and relative humidity continuous chart recording equipment.
- 4.2.3 Suitable equipment to determine air contamination levels according to ASTM F25.

## 5 PROCEDURE

- 5.1 The procedure employed in meeting the requirements specified herein shall be as defined by the subcontractor performing bonding operations for Bombardier Aerospace Toronto.

## 6 REQUIREMENTS

### 6.1 Priming and Bonding Work Area Condition

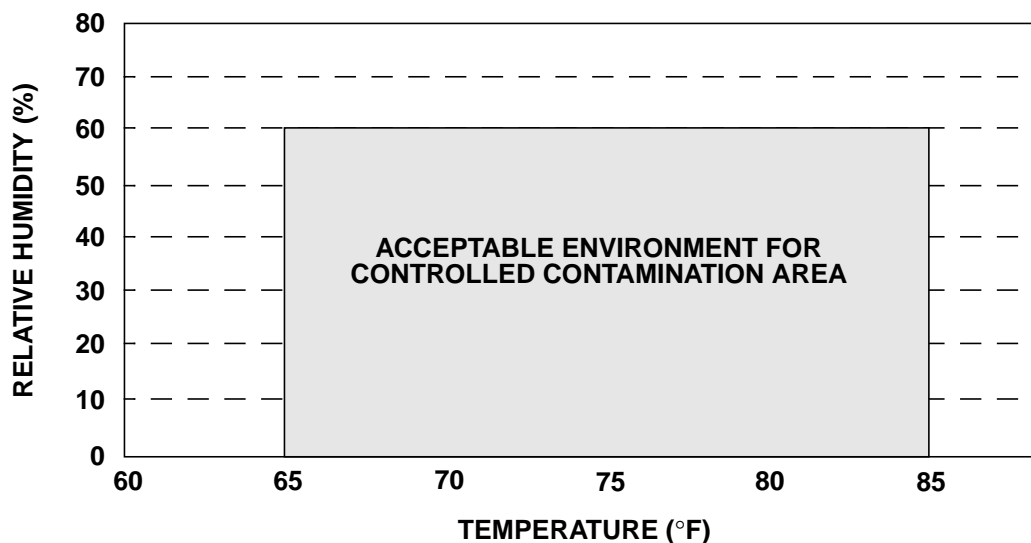
- 6.1.1 Inspect and clean priming and bonding work areas at the intervals specified in [Table I](#) or sooner if any accumulation of dust, dirt or other contamination is evident.
  - 6.1.1.1 Maintain records of dates of cleaning.
- 6.1.2 Air contamination must not exceed 1000 particles larger than 5 microns each per cubic foot as determined according to ASTM F25.
  - 6.1.2.1 The maximum interval between air contamination checks must be as specified in [Table I](#).
- 6.1.3 Maintain a positive air pressure differential so that unfiltered air does not enter the priming and bonding area through access doors and other openings.

**TABLE I - SCHEDULE FOR INSPECTING AND CLEANING OF WORK AREAS**

ITEMS	MAXIMUM INSPECTION TIME INTERVAL	MAXIMUM CLEANING TIME INTERVAL	METHOD OF CLEANING
Tables	24 hours	24 hours	Re-cover with clean kraft paper
Floors	24 hours	24 hours	Vacuum and damp mop
Equipment	24 hours	24 hours	Wipe with damp cloth
Walls from the floor to a height of 7 ft.	7 days	30 days	Wash with water
Walls above 7 ft. high, ceilings, beams, light fixtures, etc.	30 days	6 months	Wash with water
Air contamination levels	7 days	Continuous	Suitable air filters

- 6.1.4 Maintain the temperature and relative humidity of the priming and bonding areas within the range specified in [Figure 1](#).

- 6.1.5 Record the temperature and relative humidity of the priming and bonding areas on continuous chart recording equipment when parts are being processed for Bombardier Aerospace Toronto.



**FIGURE 1 - TEMPERATURE AND HUMIDITY LIMITS FOR CONTROLLED CONTAMINATION AREA)**

## **7 SAFETY PRECAUTIONS**

- 7.1 *Safety precautions applicable to the materials and procedures specified herein shall be as defined by the subcontractor performing such work for Bombardier Aerospace Toronto.*

## **8 PERSONNEL REQUIREMENTS**

- 8.1 Personnel responsible for ensuring that the requirements specified herein are met must have a basic understanding of the procedure and requirements as specified herein and must have exhibited their familiarity to their supervisor.