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BOMBARDIER
Toronto (de Havilland)
PROPRIETARY INFORMATION

PPS 9.05

PRODUCTION PROCESS STANDARD

Potting Electrical Connectors

Issue 12
- This standard supersedes PPS 9.05, Issue 11.
- 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.

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1 Scope

1.1 This Production Process Standard (PPS) specifies the procedure and requirements for potting electrical connectors.

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 21.20 - Mixing and Handling Two Part Sealants.

3.4 PPS 21.21 - General Sealing Practices.

3.5 PPS 25.65 - DSC 479-1 One Part Urethane Adhesive.

3.6 PPS 31.17 - Solvent Usage.

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

4 Materials and Equipment

4.1 Materials

4.1.1 Sealing compound to DHMS S3.05/2 Class B (high viscosity).

4.1.2 DSC 479-1 urethane adhesive.

4.1.3 Release agent, silicone-free, water soluble, PARTALL #10.

4.2 Equipment

4.2.1 Brush for applying release agent.

4.2.2 Disposable, wax free paperboard containers (e.g., Melo take-out food containers).

5 Procedure

5.1 General

5.1.1 For the purposes of this PPS, the following definitions apply:

Potting - The process of sealing and insulating electrical wires and terminals by filling the receptacles with liquid sealant or adhesive (potting compound) which cures at room temperature to a solid material.

Pot life - The time and condition during which mixed sealant remains suitable for application.

5.1.2 If the potting compound to be used is not specified on the engineering drawing, use potting compound to DHMS S3.05/2 Class B. Use DSC 479-1 adhesive for potting only if it is specified on the engineering drawing.

5.2 Preparation of Parts

5.2.1 Immediately before potting, prepare the contacting surfaces of the parts to be potted by solvent cleaning according to PPS 31.17.

5.3 Preparation of Moulds

5.3.1 If the potting compound is going to be moulded into shape, lightly coat the mould surfaces with PARTALL #10 release agent immediately before assembly and potting.

5.4 Preparation of Potting Compounds

5.4.1 Prepare DSC 479-1 one part urethane adhesive for application by thoroughly stirring until a uniform consistency is obtained.

5.4.2 Prepare DHMS S3.05/2 Class B potting/sealing compound according to PPS 21.20.

5.5 Potting

5.5.1 After assembling the cable harness, apply potting compound as follows:

Step 1. Insert the cable harness into the connector case or mould.

Step 2. Taking care to avoid air entrapment, completely fill the case or mould with potting material using one of the following methods:

- Dip the case or mould into the potting compound
- Pour potting compound into the case or mould
- Use a pressure gun to inject potting compound into the case or mould.

5.6 Curing

5.6.1 Cure DHMS S3.05/2 Class B potting compound according to PPS 21.20.

5.6.2 Cure DSC 479-1 adhesive according to PPS 25.65.

5.7 Clean-Up

5.7.1 Use the solvent specified in PPS 31.17 to remove un-cured sealant form tools and other areas.

6 Requirements

6.1 Potted assemblies must be substantially free of voids and air pockets.

7 Safety Precautions

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

7.2 Refer to PPS 31.17 for safety precautions related to the usage and handling of solvents.

7.3 Refer to PPS 21.21 for safety precautions related to the usage and handling of sealants.

7.4 Refer to PPS 25.65 for safety precautions related to the usage and handling of DSC 479-1 adhesive.

7.5 Avoid inhalation of fumes or vapours from mixed sealants or components. Wear protective respiratory equipment and gloves as specified in PPS 13.13 when applying potting compound.

8 Personnel Requirements

8.1 Personnel responsible for potting electrical connectors must have a good working knowledge of the applicable procedure and requirements as specified herein and shall have exhibited their competency to their supervisor.

9 Storage

9.1 Store solvents according to PPS 31.17.

9.2 Store DSC 479-1 adhesive according to PPS 25.65.

9.3 Store sealants at 60°F - 80°F. Observe the precautions necessary for flammable material.

9.4 Refer to PPS 13.28 for the storage life of sealants. Clearly mark the storage life expiry date on all containers of sealant.

9.5 Keep containers of sealants tightly closed when not in use.