

BOMBARDIER

Toronto Site

PROPRIETARY INFORMATION

PPS 21.18

PRODUCTION PROCESS STANDARD

SEALING FIREWALLS AND HIGH TEMPERATURE ZONES

- Issue 9
- This standard supersedes PPS 21.18, Issue 8.
 - Vertical lines in the left hand margin indicate technical 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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1 SCOPE

- 1.1 This Production Process Standard (PPS) specifies the procedure and requirements for sealing firewalls and high temperature zones.
 - 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, 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 ASTM D2240 - Standard Test Method for Rubber Property - Durometer Hardness.
- 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 21.20](#) - Mixing and Handling Two-Part Sealants.
- 3.5 [PPS 21.21](#) - General Sealing Practices.
- 3.6 [PPS 31.09](#) - Cleaning of Titanium and Titanium Alloys.
- 3.7 [PPS 31.17](#) - Solvent Usage.

4 MATERIALS AND EQUIPMENT

4.1 Materials

- 4.1.1 DHMS S3.04 sealing compound, flame resistant.

4.2 Equipment

4.2.1 Equipment as specified in [PPS 21.21](#).

■ 4.2.2 Durometer to ASTM D2240.

5 PROCEDURE

5.1 General

5.1.1 If specified by the engineering drawing, perform firewall and high temperature zone sealing to prevent the passage of air, fluid or hot gases from one area of the aircraft structure to another.

5.2 Sealant Preparation

5.2.1 Prepare DHMS S3.04 sealant according to [PPS 21.20](#).

5.3 Part Preparation

5.3.1 Refer to [PPS 21.21](#) for general part preparation procedures.

5.3.2 Clean titanium and titanium alloys according to [PPS 31.09](#).

5.4 Sealing

5.4.1 Refer to [PPS 21.21](#) for general sealant application procedures.

5.4.2 Apply sealant so as to completely fill holes and edge gaps.

5.4.3 Ensure that the sealant extends approximately 1/4" onto the firewall from any hole, edge gap or fillet edge.

5.4.4 Apply sealant in as uniform a thickness as possible. The minimum thickness is 1/8".

5.4.5 If possible, seal both faces of firewalls.

5.5 Curing

■ 5.5.1 Allow sealant to fully cure according to [PPS 21.20](#) (minimum hardness of 30 Shore A Durometer) before subjecting the part to heat.

5.6 Clean-Up

- 5.6.1 Remove excess uncured sealant from structures, parts and equipment using sealant scrapers and solvent cleaning according to [PPS 31.17](#).

6 REQUIREMENTS

- 6.1 Sealant beads and fillets shall overlap onto the structure or part by 1/4" minimum.
- 6.2 The minimum acceptable sealant bead or fillet thickness is 1/8".
- 6.3 Complete adhesion of the sealant is required. Loose sealant or visual breakaway at the fillet or coating edges shall be cause for rejection of the affected portion.

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 *Keep sealant materials away from fire and other sources of ignition.*
- 7.4 *Avoid skin and eye contact with sealant materials. If skin contact occurs, wash the affected area thoroughly with soap and water. If eye contact occurs, flush eyes in the nearest eye wash fountain for 15 minutes minimum and report to the Health Centre.*
- 7.5 *Avoid ingestion of any of the materials specified herein. Always wash hands before eating or smoking. Obtain immediate medical attention if ingestion occurs.*

8 PERSONNEL REQUIREMENTS

- 8.1 Personnel responsible for sealing firewalls and high temperature zones shall 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 OF SEALING COMPOUND

- 9.1 Always use the oldest stock first (i.e., first in/first out (FIFO) basis).
- 9.2 Refer to [PPS 13.28](#) for the storage life of DHMS S3.04 flame resistant sealing compound.