BOMBARDIER
Toronto Site
PROPRIETARY INFORMATION

PPS 16.12

PRODUCTION PROCESS STANDARD

APPLICATION OF INTUMESCENT FIRE-PROOF COATING (F38)

Issue 4
- This standard supersedes PPS 16.12, Issue 3.
- 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) 375-7641.
- 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 the application of an intumescent fire-proof coating (F38) onto epoxy primed substrates.

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 13.13 - 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 31.07 - Cleaning and Stripping of Painted Surfaces.

3.5 PPS 31.17 - Solvent Usage.

3.6 PPS 34.03 - Application of Polyurethane Enamel.

3.7 PPS 34.08 - Application of Epoxy-Polyamide Primer (F19 & F45).

3.8 QAMTR 018 - Testing Paints and Finishes.

4 MATERIALS AND EQUIPMENT

4.1 Materials

4.1.1 Intumescent paint, Ocean No. 1522, Ocean Chemicals Inc.

4.2 Equipment

4.2.1 Suitable spraying equipment (e.g., De Vilbis type gun fitted with a No. 60 nozzle).

4.2.2 Tack rags (e.g., DSC 375-1).

4.2.3 Abrasive paper, aluminum oxide, 180 - 220 grit size.

5 PROCEDURE

5.1 General

5.1.1 Intumescent fire-proof coating as specified herein, consists of a thick coating of specially formulated paint which “puffs up” to form a thick spongy foam crust when exposed to flame. The resultant foam layer acts as an insulator to protect the under-surface from penetration of heat which could damage or destroy the part in the event of a fire.

5.2 Preparation of Parts

5.2.1 F19 prime all parts or areas to be coated with F38 intumescent paint according to PPS 34.08 immediately before applying the paint. Cure F19 primer according to the appropriate schedule specified in PPS 34.08 before over-coating with intumescent paint. If the F19 primer coating has cured for more than 8 hours before applying the intumescent paint, lightly scuff the primed surface with 180 - 220 grit abrasive paper followed by tack ragging to remove loose dust particles.

5.3 Preparation of Intumescent (F38) Paint

5.3.1 Stir F38 intumescent paint thoroughly in its container to a uniform consistency immediately before using. If necessary, F38 paint may be thinned with the solvent specified in PPS 31.17. Only use F38 intumescent paint within its storage life (as marked on the container). Submit F38 intumescent paint which has exceeded its storage life for shelf life extension testing according to QAMTR 018.

5.4 Application of Intumescent (F38) Paint

5.4.1 Apply 5 to 7 heavy, wet coats of F38 intumescent paint by brush or spray so as to obtain a total dry film thickness of 0.030" - 0.035". If spray application is used, a standard De Vilbis type spray gun fitted with a #60 nozzle is recommended. Allow each coat of paint to dry for a minimum of 30 minutes before applying the next coat. Allow the final coat of F38 to dry for a minimum of 48 hours before applying the polyurethane top coat.

5.5 Application of Polyurethane (F37) Top Coat

5.5.1 Finish all parts which have been coated with F38 intumescent paint with a top coat of F37 polyurethane enamel applied according to PPS 34.03. The colour of enamel to be used shall be as specified on the engineering drawing. Allow polyurethane top coat to cure according to PPS 34.03 before further handling. Allow the completed assembly to cure for a minimum of 5 days at room temperature before further working, installing or subjecting to in-service conditions.

5.6 Removal of Coating

5.6.1 If necessary, remove defective coatings from parts by stripping according PPS 31.07.

5.7 Clean-Up

5.7.1 Uncured F38 material may be removed from tools, equipment and work surfaces by solvent cleaning according to PPS 31.17.

6 REQUIREMENTS

6.1 Visually check F38 intumescent paint coatings to ensure that the coating is coherent and uniform over the entire surface with no evidence of bare spots.

6.2 The dry film thickness of F38 coatings as measured using a suitable micrometer shall be 0.030" - 0.035". Measure the dry film thickness any time after the paint is dry and before applying F37 polyurethane top coat.

7 SAFETY PRECAUTIONS

7.1 Observe standard plant safety precautions when performing the procedure specified herein.

7.2 Smoking or eating is prohibited in paint spraying areas.

7.3 Provide adequate ventilation in areas where painting operations are being carried out.

7.4 Keep paint components away from fire and other sources of ignition.

7.5 Avoid skin contact with paint.

7.6 Operators shall wear protective respiratory equipment according to PPS 13.13 for spray or brush application of intumescent fire-proof (F38) coatings.

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

8 PERSONNEL REQUIREMENTS

8.1 Personnel responsible for the application of an intumescent fire-proof coating onto epoxy primed substrates 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

9.1 Store solvents according to PPS 31.17.

9.2 Store paint according to the precautions necessary for flammable materials.

9.3 Store paint at a temperature of 10 - 26°C (60 - 80°F).

9.4 The storage life of intumescent paint shall be according to PPS 13.28.

9.5 Clearly mark containers with the storage life expiry date.

9.6 When not in use, keep containers of paint tightly closed.