

de Havilland
Material Specification

TITLE:	FIREWALL FAIRLEAD MATERIAL
SPECIFICATION NUMBER:	DHMS P 1.25
ISSUE:	C
AMENDMENT:	--
DATE:	August 19, 2008
PAGE:	1 of 7

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REVISION RECORD

Issue	Page	Description and Reason for Change
A	3	Para. 2.1, 2.1.1 and 2.2 were added.
	4	Table 1, Test Methods were changed from Federal Test Method to ASTM. Para. 4.1 Requirements was added and Para. 4.2 Test Procedure was revised.
	5 & 6	Quality Assurance Section was changed to the standard format.
	6	Table 2 was revised.
	7	Para. 7.0 Preparation for Delivery as revised.
	8	Para. 8.0 Health and Safety Data was added.
	9	Qualified Products List - Qualified Material was changed from FM 11547 to FM 8130. Thickness 0.25".
A Amd.1	5	Para. 5.3.2: per para. 4.3.1, change to 5.3.1.
	6	Acceptance test on flammability deleted.
B		This is a complete revised issue. Detail changes have not been noted.
Amd.1	4	Acceptance test on flammability deleted.
C		This is a complete revised issue. Detail changes have not been noted. QPL, removed reference to thickness of sheet. General updated.

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1 SCOPE

This specification covers the requirements for a non metallic, fireproof firewall fairlead material supplied in sheet form.

2 APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extend specified herein. In the event of conflicting requirements between this and the specifications listed below, the requirements of this specification shall govern. Where a specific issue of a document is not specified, the current issue shall be used.

2.1 U.S. Government Specifications

- 2.1.1 FAR 25.1191 (b)(1)-Fireproof Materials
Amd. 25-83

2.2 American Society for Testing Materials

- ASTM D256 - Impact Resistance of Plastics and Electrical Insulating Materials
ASTM D638 - Tensile Properties of Plastics
ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

3 REQUIREMENTS**3.1 General**

Materials used in the manufacture of this product shall be of the highest quality and suitable for the intended purpose.

- 3.1.1 The sheets shall be free of surface blister, foreign inclusions, and internal or external defects detrimental to fabrication of the material or performance of the parts.
3.1.2 Sheet Thickness - The sheet thickness shall be within $\pm 10\%$ of the specified dimension.
3.1.3 Colour - The sheets shall have an even black colour density.

3.2 Flammability

- FAR 25.1191 (b)(1) - Fireproof Materials
Amd. 25-83

3.3 Mechanical Properties

The sheet material shall conform to the properties specified in **Table 1**.

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Table 1:

Property	Test Method No.	Minimum Values
Ultimate Tensile Strength	ASTM D638	6 000 psi
Flexural Strength	ASTM D790	10 000 psi
Impact Strength	ASTM D256	1.5 ft.lb/ inch notch

4 TEST SAMPLES AND TEST METHODS

4.1 Requirements

FAR 25.1191 (b)(1) Amd. 25-83 requires that a 10" x 10" sample of a material should withstand a flame temperature of 2000°F ± 50°F over a 5" x 5" area for a period of 15 minutes without flame penetration.

4.2 Test Procedure

The specimen shall be positioned 1-1/4" in front of the burner, the position at which the flame is calibrated, and the burner shall then be ignited. The specimen shall be subjected to the flame for a period of 15 minutes. During this period, the flame temperature shall be monitored and the panel shall be examined visually for flame penetration.

5 QUALITY ASSURANCE

5.1 Qualification

- 5.1.1 A supplier is responsible for the performance of all qualification testing, as specified in **Table 2** of this specification. A three lots/batches qualification is required.
- 5.1.2 A supplier desiring qualification shall submit one copy of a report showing actual qualification test data and a sufficient quantity of product for de Havilland evaluation tests.
- 5.1.3 Upon review of supplier's data and de Havilland tests, the supplier will be advised either of product qualification or reasons for disqualification.
- 5.1.4 Products that are qualified will be listed in the Qualified Products List of this specification.
- 5.1.5 No changes in the method of manufacture and/or formulation shall be made without notification and prior written approval of Materials Technology and Quality Assurance Departments of de Havilland Inc.
- 5.1.6 Requalification of the product may be requested by the purchaser if there are any changes in the method of manufacture and/or formulation.

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5.2 Qualification by Similarity

Where a product has been qualified to another similar specification, the supplier may submit the qualification data applicable to this specification for consideration. The similar specification may be a government, company, or other specification where the requirements are similar to this specification.

5.3 Acceptance Tests

5.3.1 Unless otherwise specified in the contract or purchase order, the supplier is responsible for all acceptance tests, as specified in **Table 2** of this specification.

5.3.2 The supplier, performing acceptance tests per **Para.5.3.1**, shall furnish with each batch of product one copy of the Acceptance Test Report showing actual test data conformance to the acceptance tests specified in **Table 2**. The report shall include the supplier's batch identification.

5.3.3 de Havilland reserves the right to perform any or all of the tests set forth in this specification to ensure that the product continues to meet specification requirements. Any product not meeting the requirements of this specification will be returned to the supplier at the supplier's expense.

Table 2: Qualification and Batch Acceptance Tests

Test	Paragraph	Qualification	Acceptance
Colour	Para.3.1.3	x	x
Workmanship	Para.3.1	x	x
Tensile Strength	Table 1	x	
Flexural Strength	Table 1	x	
Impact Strength	Table 1	x	
Flammability	Para.4.1	x	

5.4 Definitions

Batch is defined as the end product of all the raw materials mixed and/or manufactured at the same time and place.

Lot is defined as the total quantity of product in a shipment taken from the same batch.

6 ORDERING DATA

6.1 Prerequisite

Material furnished under this specification for production use shall be qualified and listed on the Qualified Products List prior to issuing of a Purchase Order.

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6.2 Procurement Documents

Procurement documents shall specify the following:

- Title, Number, Issue, and Amendment Number of this Specification
- Manufacturer's Material Designation
- Total Quantity.

7 PREPARATION FOR DELIVERY**7.1 Identification**

Each sheet shall be legibly marked with the following information:

- Firewall Fairlead Material
- DHMS P1.25, latest Issue & Amendment
- Manufacturer's Material Designation
- Purchase Order Number
- Batch Number
- Date of Manufacture

7.2 Shipping Documentation

The shipping document shall show:

- Firewall Fairlead Material
- DHMS P1.25, latest Issue & Amendment
- Manufacturer's Material Designation
- Purchase Order Number
- Batch Number
- Quantity

Each shipment shall contain a copy of the Material Safety Data Sheet.

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8 HEALTH AND SAFETY DATA

When supplying samples for qualification per **Para.5.1.2**, the supplier shall submit a Material Safety Data Sheet (MSDS) complying with the "Controlled Products Regulations" of the Hazardous Products Act (also known as W.H.M.I.S. Regulations). The document must state all hazardous ingredients, safe-handling procedures, first-aid measures, fire and explosion data, re-activity data, physical properties, preparation information and procedures for storage and disposal.

This (MSDS) must then be supplied with a completed DH 4339 "Application To Introduce A New Material" form to the Material Safety Committee.

Upon receipt of DH 4340 "Recommendation" form that approves the use of the material, it can then be included on the Qualified Products List.

NOTE: Any changes in the formulation of the material require a re-submission of the Material Safety Data Sheet.

BOMBARDIER

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QUALIFIED PRODUCTS LIST

MANUFACTURER'S NAME AND ADDRESS	MANUFACTURER'S PRODUCT IDENTIFICATION NO.	MATERIALS SAFETY DATA SHEET NO.	DE HAVILLAND QUALIFICATION SHEET NO.	DATE OF PRODUCT APPROVAL
I Fiberite Corp., 501 W. Third St., Winona, Minn. 55987 Tel: (507) 454-3611	FM 8130	900	PQS #1	March 26, 1987