

# De Havilland

## Material Specification

<b>TITLE:</b>	<b>SEALING COMPOUND, LOW ADHESION, FOR REMOVABLE PANELS AND FUEL TANK INSPECTION PLATES</b>
<b>SPECIFICATION NUMBER:</b>	<b>DHMS S3.02</b>
<b>ISSUE:</b>	<b>D</b>
<b>AMENDMENT:</b>	<b>--</b>
<b>DATE:</b>	<b>November 25, 2020</b>
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Prepared by:

Approved by:

**SIGNED ORIGINAL ON FILE**

**Shiraz Haniff**

Materials Technology

**Hai Yen Tran**

Materials Technology

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### REVISION RECORD

Issue	Page	Description and Reason for Change
A		This is a complete revised issue. Detail changes have not been noted.
Amd. 1	2	Spelling mistake has been corrected.
	6	QPL update - delete PR 1321/A2, B2 and S-200/B2, and add PR 1428/B2
Amd. 2	6	QPL: The supplier's address has been changed.
Amd. 3	6	QPL: PR 1428/A2 added.
Amd. 4	6	QPL: Courtlads Aerospace has been changed to PRC DeSoto Int.
B		This is a complete revised issue. Detail changes have not been noted.
		Para. 3.0.1 Storage life: Was "6 months from date of Manufacture"
		Now: "9 months from date of Manufacture when store below 80° F"
C		Table 1: Clarified flow test requirement
		This is a complete revised issue.
Amd. 1	QPL	Added product PR 1428 B 1/2
D		This is a complete revised issue.
		Updated Company name
		Format changed, standardize with other specification
	8	Para. 8, Revised Health and Safety section.
		Para 8.1 Added environmental section, standardize with other specifications
	QPL	Added note "PPG Products will have suffix "F" in their lot number indicating OPPE free



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## 1 SCOPE

This specification covers the requirements for a two component synthetic rubber, with low adhesion, for sealing access doors and accessories of integral fuel tanks, fuel cell cavities, and accessories when gaskets are required.

### 1.1 Classification

1.1.1 The sealing compound shall be supplied in one of the following classes:

Class A - Sealing material, Suitable for brush application;

Class B - Sealing material, Suitable for application by Injection or Extrusion Gun and Spatula.

1.1.2 The following dash numbers shall be used to designate the minimum application time in hours:

Class A dash numbers shall be -1/2 and -2

Class B dash numbers shall be -1/2 and -2

## 2 APPLICABLE DOCUMENTS

The following document shall form the specification of the sealant defined herein.

MIL-S-8784B - Sealing Compound, Low Adhesion, for Removable Panels and Fuel Tank Inspection Plates

## 3 REQUIREMENTS

The sealing compounds noted shall meet all the requirements of MIL-S-8784B.

3.0.1 Storage Life - The storage life of the product shall be a minimum of 9 months from the date of manufacture when stored below 80° F in the original unopened container..

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#### 4 MATERIAL QUALIFICATION REQUIREMENTS

##### 4.1 Request For Qualification

All requests for qualification to this specification shall be addressed to De Havilland Materials Technology Engineering department for approval.

All material qualification shall be site specific.

An audit of the manufacturers and/or test facilities by Materials Technology Engineering may be necessary prior to approval.

##### 4.2 Qualification testing

Potential suppliers shall submit a written qualification test report based on 3 batches/lots of materials showing compliance with the requirements contained in section 3. The test report shall contain actual numerical test values, average test results as well as failure modes where applicable.

4.2.1 A sample shall be submitted for testing at the discretion of De Havilland Materials Technology for evaluation.

##### 4.3 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.

##### 4.4 Process Control Document

4.4.1 The manufacturer shall develop and maintain a Process Control Document (PCD). The PCD shall define the manufacturing and quality control requirements and procedures for assuring consistent, uniform and compliant products. The PCD shall identify baseline chemical constituents, in-process test procedures and requirements, and manufacturing procedures. All specifications and test procedures employed during the process shall also be listed and issue/date controlled.

4.4.2 When qualification has been granted, the PCD shall be signed by the supplier and De Havilland Materials Technology Engineering and shall not be changed without prior written approval.

4.4.3 The PCD and all production data shall be available to any De Havilland auditors when requested.

##### 4.5 Qualification Approval

4.5.1 Upon review of supplier's data, PCD and De Havilland tests, the supplier will be advised either of product qualification or reasons for disqualification. Products that are qualified will be listed in the Qualified Products List of this specification.

4.5.2 No changes in the method of manufacture and/or formulation shall be made without notification and prior written approval of Materials Technology Department.

4.5.3 Re-qualification of the product may be requested by the De Havilland Materials Technology if there are any changes in the method of manufacture and/or formulation.



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## 5 QUALITY ASSURANCE REQUIREMENTS

### 5.1 Manufacturer Batch/Lot Acceptance Tests

- 5.1.1 The manufacturer/supplier is responsible for the performance of all sampling, inspection and testing of each batch/lot as specified in [Table 1](#).
- 5.1.2 The manufacturer/supplier shall issue with each batch of product one copy of an Acceptance Test Report showing actual test data conformance to the acceptance tests specified in [Table 1](#). The report shall include the supplier's batch identification, materials specification and date of testing.
- 5.1.3 De Havilland Materials Technology Engineering 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.
- 5.1.4 The manufacturer/supplier shall certify with a Certificate Conformance that each batch of each shipment meets the requirements of this specification.

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## 5.2 Purchaser Batch/Lot acceptance tests

The purchaser is required to perform of all sampling, inspection and testing of each batch/lot as specified in [Table 1](#).

**Table 1: Qualification and Batch Acceptance Tests**

Test	Qualification as per MIL-S-8784B	Acceptance as per MIL-S-8784B
Colour	X	
Specific Gravity	X	
Non-Volatile Content	X	
Viscosity	X	
Flow <sup>1</sup>	X	X
Application Time	X	X
Tack Free Time	X	X
Hardness	X	
Adhesion	X	
Resistance to Heat	X	
Resistance to Salt Water and Hydro-carbon	X	
Resistance to Hydrocarbons	X	
Low-Temperature Flexibility	X	
Accelerated Storage Stability	X	

1. Flow requirement for Class B sealant shall be 0.10-0.75 inches

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### 5.3 Sampling

5.3.1 Sampling Schedule - Sampling shall be in accordance with **Table 2**.

**Table 2: Sampling Schedule**

Number of Can in Batch	Frequency of Inspection
1 - 10	1 can
11 - 39	2 cans
40 and more	3 cans

5.3.2 Batch is defined as the end product of all the raw materials mixed and/or manufactured at the same time and place, The weight and volume may vary, depending upon the capacity of the manufacturers facilities.

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

## 6 PROCUREMENT DOCUMENTS

Procurement documents shall specify the following:

- Title, number, issue and amendment number of this specification
- Manufacturers Name and Product Identification (Trade name or Code number)
- Type or size of containers
- Total quantity

## 7 PREPARATION FOR DELIVERY

### 7.1 Packaging and Packing

The sealant shall be packaged and packed for shipping in accordance with MIL-S-8784B

### 7.2 Identification

Each kit shall be legibly marked with the following information:

- DHMS S3.02 plus Class, ( ie. A or B), and Type ( ie. -1/2 or -2)
- Manufacturers Name and Product Identification
- Batch number
- Quantity
- Date of Manufacture
- Expiry Date

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### 7.3 SHIPPING DOCUMENTATION

Shipping document shall show:

- Purchase Order No's.
- Specification Number
- Number of Containers
- Batch Number
- Total Quantity (Imperial or U.S. measure)
- Certificate of Conformance including Batch Acceptance Test Report





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## **| 8 HEALTH AND SAFETY DATA**

When supplying samples for qualification per [Para.4.2](#), the supplier shall submit a Safety Data Sheet (SDS) complying with Workplace Hazardous Material Information System (WHMIS) 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 (SDS) must then be supplied with a completed EHS-FO-025 "Application To Introduce A New Material" form to the Material Safety Review Committee.

Upon receipt of EHS-FO-025 "Recommendation" form that approves the use of the material, it can then be included on the Qualified Products List.

### **| 8.1 Environmental Compliance**

Materials and ingredients use in manufacturing the product shall comply to environmental regulations such as REACH, EPA, CEPA. Prohibited substances or restricted from certain uses under an Environmental Regulation shall not be used for the specified prohibited applications.

Supplier shall notify De Havilland Aircraft of Canada Limited, Materials Technology Engineering department if the product contains targeted substances.



## QUALIFIED PRODUCTS LIST

**As of July 2020, PPG Products will have suffix “F” in their lot number indicating OPPE free. PPG sealants lots without suffix "F" may be used to depletion.**