AEROSPACE RECOMMENDED PRACTICE

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ARP 1536

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ABRASION TEST PROCEDURE FOR CHAFE GUARD

1. SCOPE

This Aerospace Recommended Practice (ARP) establishes a method of testing, and criteria for comparative evaluation of the abrasion resistance of chafe guard, and also establishes standard test equipment to be used in conducting these tests.

1.1 Purpose: This ARP establishes a standard test criteria for the evaluation of chafe guards intended to afford protection from abrasion and chafing of hose assemblies and adjacent components. For test purposes, a stainless steel wire braided hose assembly, such as MIL-H-25579, shall be used. The information obtained from testing will be applicable to any hose assembly because testing ceases when the chafe guard has worn through to the test assembly.

2. REQUIREMENTS

2.1 Test Assemblies: The hose, coupled with suitable hose end fittings, shall be similar to MIL-H-25579 and be at least 15 in. (380 mm) long. The chafe guard under test shall be installed over the hose and restrained by suitable clamps over the hose end fittings.

3. TEST CONDITIONS

Unless otherwise specified, the following conditions shall be maintained during the test:

3.1 Temperature: Ambient room temperature.

3.2 Pressure: Internal pressure on hose assembly: rated operating pressure.

3.3 Abrasive Force: A total weight of 15 lb (6.8 kg) shall be applied to the chafe guard under test.

3.4 Rate of Application: The abrasive force shall be applied at a rate of 200 ± 10 cycles per minute (cpm) through a total stroke of 3 in. (76 mm), 1.5 in. (38 mm) per side.

3.5 Abrasive Element: The abrasive element shall be a .50 in. (13 mm) precision ground drill rod in accordance with QQ-T-580 with specific heat treatment of Rc60 hardness, mounted as shown in Fig. 1.

4. TEST PROCEDURE

4.1 Mounting: A suitable hose assembly with chafe guard in place and restrained from lateral and rotational movement, as described in 2.1 shall be installed in a test fixture, as shown in Fig. 2, in a straight position and supported by clamps spaced approximately 12 in. (305 mm) apart. The hose assembly is pressurized to rated operating pressure.

4.2 Abrasive Element: The abrasive element specified in 3.5 shall be installed, as shown in Fig. 2, resting on the test specimen. Guides shall support the element in this position, allowing the full force specified in 3.3 to bear on the test sample.

4.3 Testing: The abrasive element shall be moved longitudinally along the hose assembly axis using the rate of application and stroke specified in 3.4.

4.4 Monitoring: The metal reinforcement of the hose assembly under test and the abrasive element shall be connected to an appropriate voltage source in series with the monitor-indicator to stop the test machine when the chafe guard has worn through to the hose assembly. The number of abrasion cycles shall be recorded.

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