



AEROSPACE MATERIAL SPECIFICATION	AMS2615™	REV. F
	Issued 1945-08 Revised 2006-09 Reaffirmed 2018-08 Superseding AMS2615E	
Pressure Testing, Hydraulic Pressure as Specified		

RATIONALE

AMS 2615F is a Five Year Review and update of this specification.

1. SCOPE

1.1 Application

This specification provides requirements and procedures for hydraulic-pressure leak testing of parts.

1.2 Classification

The following classes of tests establish the allowable leakage as follows:

Class A - No visible leakage permitted.

Class B - 2 mL/minute.

Class C - 2 mL/minute for any area bounded by a 1-inch (25-mm) diameter circle.

Class D - Very slow leak allowing the surface to become slightly moist or damp.

Class E - A specified leakage rate acceptable to purchaser.

1.2.1 If a class is not specified, Class A shall apply.

1.3 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

Not applicable.

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3. TECHNICAL REQUIREMENTS

3.1 Equipment

3.1.1 Fixtures

Test fixtures and apparatus shall be designed and constructed to seal off only the ports and passages required to pressurize the part, and to permit 100% evaluation of all areas of the part where leakage could occur. The design shall not induce any stress on the part other than that provided by the test media. If pressure testing cannot be accomplished without inducing additional stresses, the design, including fitting types, shall be approved by the purchaser.

3.1.2 Gaskets

Gasket material shall be used with plugs or blanking plates to prevent damage to finished surfaces when sealing. Flanges or fittings designed for use with specific O-rings or gaskets shall use those for test. Formed-in-place gaskets that could mask dimensional or surface flaws shall not be used except for unmachined castings.

3.1.3 Bleeder Ports

Valved bleeder ports shall be provided to release entrapped air.

3.1.4 Instruments

Pressure gauges and flow meters shall have sufficient dial divisions or readability to permit monitoring of specified pressure, with maximum gauge capacity not more than five times test pressure and readability not less than 5% of test pressure. Gauges shall have been calibrated, within one year of use, using either primary standards or standards traceable to the National Institute of Standards and Technology.

3.1.5 Safety Tank or Screen

A suitable tank or screen shall be provided to protect the operator in case of failure of a part (See 8.2).

3.1.6 Drying Oven

A circulating-air oven shall be used for drying parts subject to corrosion.

3.2 Test Media

Water, hydraulic fluid, or suitable petroleum-base test media shall be used. The test media shall be inert to the part and shall have a viscosity of 25 centistokes or less.

3.3 Preparation

3.3.1 Cleaning

The part shall be thoroughly cleaned and dried before testing so that any leaks will be visible. Loose particles, machine shop chips, oils, and other foreign materials shall be removed before pressure testing.

3.3.2 Processes

The part or subassembly shall be tested following all machining, forming, straightening, welding, brazing, anodizing, etc, and prior to application of other protective finishes such as paint, plating, coating, and surface finishes that may mask or blank off areas of possible leakage.