



Designation: F 363 – 99

Standard Test Method for Corrosion Testing of Gaskets¹

This standard is issued under the fixed designation F 363; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the evaluation of gaskets under corrosive conditions at varying temperature and pressure levels. The test unit may be glass lined if the flanges are sufficiently plane (industry accepted), thus providing resistance to all chemicals, except hydrofluoric acid, from cryogenic temperatures to 260°C (500°F) at pressures from full vacuum to the allowable pressure rating of the unit, or made of other suitable material. The test unit described (Fig. 1) has an internal design pressure rating of 1034 kPa (150 psi) at 260°C (500°F).

1.2 The values stated in SI units are to be regarded as the standard.

1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. For specific precautionary statements, see Section 5.

2. Referenced Documents

2.1 ASTM Standards:

F 112 Test Method for Sealability of Enveloped Gaskets²

2.2 Other Documents
B16.21 Nonmetallic Gaskets for Pipe Flanges³

3. Significance and Use

3.1 This test method is designed to compare all types of gaskets under simulated field operating conditions. Performance of a gasket can thus be measured prior to the start-up of chemical processes.⁴ The design of the test unit provides maximum range of corrosion resistance so that meaningful results are possible. This test method may be used as a routine test when agreed upon between the purchaser and the seller.

¹ This test method is under the jurisdiction of ASTM Committee F-3 on Gaskets and is the direct responsibility of Subcommittee F03.40 on Chemical Test Methods. Current edition approved Sept. 10, 1999. Published November 1999. Originally published as F 363 – 73. Last previous edition F 363 – 89 (1994).

² Annual Book of ASTM Standards, Vol 09.02.

³ Available from American National Standards Institute, 11 West 42nd St., NY, NY 10036.

⁴ Supporting data have been filed at ASTM Headquarters as RR: F03-1002.

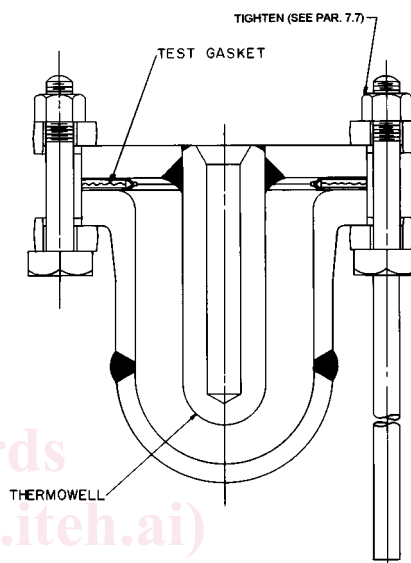


FIG. 1 Test Unit

4. Apparatus

4.1 *Corrosion Test Unit*—The unit⁵ shall contain a suitable thermowell, strategically placed near the center so that correct temperature readings may be made. The gasket seating size shall be such as to accommodate a standard 102-mm (4-in.) size gasket.

4.2 *Heat Source*—A 3-A (660-W, 220-V) electric heater has been found to be satisfactory to heat the unit in the vertical position to 232°C (450°F). If the unit is to be tested horizontally, the fixture should be in a suitable environmental chamber or oven capable of attaining the desired temperatures.

4.3 *Necessary Control Equipment*—A suitable thermostat with damping capacitor and indicator light to provide means of adjusting as well as control of temperature. The circuitry shown in Fig. 2 will control the unit within $\pm 3^\circ\text{C}$ ($\pm 5^\circ\text{F}$).

⁵ Detailed drawings of the test unit are available at a nominal cost from ASTM Headquarters, 100 Barr Harbor Drive, Conshohocken, PA 19428. Request ADJF0363. A suitable test unit can be obtained from The Pfaunder Co., P.O. Box 1600, Rochester, NY 14692.