



Standard Classification System for Nonmetallic Gasket Materials¹

This standard is issued under the fixed designation F104; 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 reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This classification system² provides a means for specifying or describing pertinent properties of commercial nonmetallic gasket materials. Materials composed of asbestos, cork, cellulose, and other organic or inorganic materials in combination with various binders or impregnants are included. Materials normally classified as rubber compounds are not included, since they are covered in Classification **D2000**. Gasket coatings are not covered, since details thereof are intended to be given on engineering drawings or in separate specifications. Facing materials for laminate composite gasket materials (LCGM) are included in Classification System F104. Assembled LCGMs are covered in Classification **F868**.

1.2 Since all of the properties that contribute to gasket performance are not included, use of the classification system as a basis for selecting materials is limited.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *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.*

2. Referenced Documents

2.1 ASTM Standards:²

C561 Test Method for Ash in a Graphite Sample

D1170 Specification for Nonmetallic Gasket Materials for General Automotive and Aeronautical Purposes (Withdrawn 1968)³

¹ This classification is under the jurisdiction of ASTM Committee **F03** on Gaskets and is the direct responsibility of Subcommittee **F03.30** on Classification. Current edition approved April 1, 2011. Published May 2011. Originally approved in 1968. Last previous edition approved in 2009 as F104 – 03 (2009). DOI: 10.1520/F0104-11.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

D2000 Classification System for Rubber Products in Automotive Applications

D5964 Practice for Rubber IRM 901, IRM 902, and IRM 903 Replacement Oils for ASTM No. 1, ASTM No. 2, and ASTM No. 3 Oils

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

F36 Test Method for Compressibility and Recovery of Gasket Materials

F37 Test Methods for Sealability of Gasket Materials

F38 Test Methods for Creep Relaxation of a Gasket Material

F146 Test Methods for Fluid Resistance of Gasket Materials

F147 Test Method for Flexibility of Non-Metallic Gasket Materials

F148 Test Method for Binder Durability of Cork Composition Gasket Materials

F152 Test Methods for Tension Testing of Nonmetallic Gasket Materials

F433 Practice for Evaluating Thermal Conductivity of Gasket Materials

F607 Test Method for Adhesion of Gasket Materials to Metal Surfaces

F868 Classification for Laminated Composite Gasket Materials

F1315 Test Method for Density of a Sheet Gasket Material

G21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

3. Significance and Use

3.1 This classification system is intended to encourage uniformity in reporting properties; to provide a common language for communications between suppliers and consumers; to guide engineers and designers in the test methods commonly used for commercially available materials; and to be versatile enough to cover new materials and test methods as they are introduced.

3.2 This system is based on the principle that nonmetallic gasket materials can be described in terms of specific physical and mechanical properties. This enables the user, or producer, to characterize a nonmetallic gasket based on properties that are important for the application.