



Designation: F868 – 17

Standard Classification for Laminated Composite Gasket Materials¹

This standard is issued under the fixed designation F868; 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.

1. Scope

1.1 This classification covers a means for specifying or describing pertinent properties of commercial laminate composite gasket materials (LCGM). These structures are composed of two or more chemically different layers of material. These materials may be organic or inorganic, or combinations with various binders or impregnants. Gasket coatings are not covered since details thereof are intended to be given on engineering drawings, or as separate specifications. Commercial materials designated as enveloped gaskets are excluded from this classification; they are covered in Practice F336. This classification system does not cover multilayer steel (MLS) gaskets currently used for some automotive exhaust and head gaskets. MLS gaskets are classified under Classification F2325.

1.2 Since all of the properties that contribute to gasket performance are not included, use of this classification as a basis for selecting LCGM 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.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

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 May 1, 2017. Published May 2017. Originally approved in 1984. Last previous edition approved in 2009 as F868 – 02 (2009). DOI: 10.1520/F0868-17.

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.

A109/A109M Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled

D2000 Classification System for Rubber Products in Automotive Applications

F104 Classification System for Nonmetallic Gasket Materials

F146 Test Methods for Fluid Resistance of Gasket Materials

F336 Practice for Design and Construction of Nonmetallic Enveloped Gaskets for Corrosive Service

F433 Practice for Evaluating Thermal Conductivity of Gasket Materials

F1276 Test Method for Creep Relaxation of Laminated Composite Gasket Materials

F2325 Classification for Multi-Layer Steel (MLS) and Other Metal Layer Gaskets for Transportation Applications

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *board*—the term board is used in the context of a thick (generally greater than 1.52 mm (0.060 in.)) and rigid nonmetallic material often purchased in sheet or strip form.

3.1.2 *composite gasket material*—a gasket structure composed of two or more different materials joined together in flat, parallel layers.

4. Significance and Use

4.1 This classification is intended to encourage uniformity in reporting properties; to provide a common language for communications between producers and users; to guide engineers and designers in the use, construction, and properties of commercially available materials; and to be versatile enough to cover new materials and test methods as they are introduced.

5. Basis of Classification

5.1 This classification is based on the principle that LCGM should be described, insofar as possible, in terms of use, composition, combining method, and specific physical and mechanical characteristics. Thus, users of gasket materials can, by selecting different combinations of materials and properties, define various parts. Suppliers, likewise, can report uses, composition, and properties of available products.