



Standard Classification for Multi-Layer Steel (MLS) and Other Metal Layer Gaskets for Transportation Applications¹

This standard is issued under the fixed designation F 2325; 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 Multi-Layer Steel (MLS) and other Metal Layer Gaskets for Transportation Applications by application and construction. These structures are composed of one or more steel or metal layers of material, which may have coatings or embossments. Commercial materials designated as composite or enveloped gaskets are excluded from this classification and are covered by Classification F 868 and Practice F 336, respectively.

1.2 Since all of the properties that contribute to gasket performance are not included, use of this classification as a basis for selecting an MLS or Metal Layer gasket 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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

A 109 Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled²

A 666 Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar²

D 1418 Practice for Rubber and Rubber Lattices—Nomenclature³

D 2000 Classification System for Rubber Products in Automotive Applications⁴

F 336 Practice for Design and Construction of Nonmetallic Enveloped Gaskets for Corrosive Service⁴

F 868 Classification for Laminated Composite Gasket Materials⁴

2.2 SAE Standard:

AE-13 Gasket and Joint Design Manual for Engine and Transmission Systems⁵

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *active layer(s)*—an embossed layer(s) used to provide the primary sealing function.

3.1.2 *embossment (emboss)*—a raised area of a steel or metal layer in relief from the rest of the layer with a defined geometry typically used at the sealing interface. Embossments may also be used to shift load to areas, which require better sealing performance.⁶

3.1.3 *exterior coating*—a supplemental coating applied to the exterior of the gasket for anti-fret, anti-blocking, or sealing enhancement.

3.1.4 *inactive layer(s)*—the flat or non-embossed layer(s) used for spacing or other purposes within the gasket.

3.1.5 *load stop (stopper)*—a device used to control compression between layers in an MLS or Metal Layer gasket.

4. Significance and Use

4.1 This classification is intended to encourage uniformity in reporting properties of MLS and Metal Layer gaskets, to provide a common language for communications between producers and users, and to guide engineers and designers in the application and construction of commercially available gaskets.

5. Basis of Classification

5.1 This classification is based on the principle that MLS and Metal Layer gaskets should be described, in terms of the transportation application and construction. Thus, users of MLS and Metal Layer gaskets can, by selecting different combinations, define various parts needed for specific applications. Likewise, producers can report applications and construction of available products.

¹ This classification is under the jurisdiction of ASTM Committee F03 on Gaskets and is the direct responsibility of Subcommittee F03.10 on Composite Gaskets.

Current edition approved Oct. 1, 2003. Published October 2003.

² *Annual ASTM Book of Standards*, Vol 01.03.

³ *Annual ASTM Book of Standards*, Vol 09.01.

⁴ *Annual ASTM Book of Standards*, Vol 09.02.

⁵ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

⁶ Load shifting reference from SAE AE-13 “Gasket and Joint Design Manual for Engine and Transmission Systems.”