



Designation: C1166 – 06(Reapproved 2011)

Standard Test Method for Flame Propagation of Dense and Cellular Elastomeric Gaskets and Accessories¹

This standard is issued under the fixed designation C1166; 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 test method covers a laboratory procedure for determining flame propagation characteristics of a dense or cellular elastomeric gasket (such as expansion, lock-strip or compression gasket) or an accessory (such as a setting block, spacer or shim) when exposed to heat and flame, with no significance being attached to such matters as fuel contribution, rate of flame spread, smoke developed, or the nature and temperature of the products of combustion.

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

1.3 *This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of the test may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.*

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 The committee with jurisdiction over this standard is not aware of any comparable standards published by other organizations.

2. Referenced Documents

2.1 *ASTM Standards:*

C717 Terminology of Building Seals and Sealants

C864 Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers

¹ This test method is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.73 on Compression Seal and Lock Strip Gaskets.

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3. Terminology

3.1 *Definitions*—For definitions of terms used in this standard, see Terminology **C717**.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *dense material, n*—material that is free of porosity, as described in Specification **C864**.

4. Summary of Test Method

4.1 In this test method, a specimen 13 by 25 by 460 mm ($\frac{1}{2}$ by 1 by 18 in.) mounted in a vertical position within the test chamber, is exposed to a gas flame at the lower end for 15 min with dense materials or 5 min with cellular materials, and ventilated at no more than 18.3 m/min (60 ft/min). The length of the flame is measured and provides a numerical value for the propagation of flame along the specimen.

5. Significance and Use

5.1 This test method is designed to differentiate the flame propagation characteristics of dense or cellular elastomeric compounds used in gaskets, setting blocks, shims, or spacers. It is a small scale test which enables the specifier to exercise engineering judgment in the selection of materials.

5.2 In this test method, the specimens are subjected to a specific laboratory fire test exposure condition. If different test conditions are substituted or the anticipated end-use conditions are changed, it may not be possible by or from this test method to predict changes in the performance characteristics. Therefore, the results are valid only for the fire test exposure condition described in this test method.

5.3 If the results obtained by this test method are to be considered in the total assessment of fire risk, then all pertinent established criteria for fire risk assessment developed by ASTM Committee E-5 must be included in the consideration.

6. Apparatus

6.1 *The Test Chamber*, may be any enclosure that will permit circulation of air past the specimen during burning. A hood or ventilated spray booth is recommended to remove any noxious products of combustion, provided the velocity of air past the specimen does not exceed 18.3 m/min (60 ft/min).

NOTE 1—Air velocities greater than 18.3 m/min (60 ft/min) will have an