

NFPA® 259

Standard Test Method for Potential Heat of Building Materials

2013 Edition



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An International Codes and Standards Organization

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NFPA® 259

Standard Test Method for Potential Heat of Building Materials

2013 Edition

This edition of NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, was prepared by the Technical Committee on Fire Tests. It was issued by the Standards Council on November 27, 2012, with an effective date of December 17, 2012, and supersedes all previous editions.

This edition of NFPA 259 was approved as an American National Standard on December 17, 2012.

Origin and Development of NFPA 259

This standard is based on a test method developed at the National Bureau of Standards in 1961. Consideration of the test method by the NFPA was begun in 1973, culminating in the standard that was adopted in 1976, reconfirmed in 1981, and revised at the 1986 Fall Meeting. The 1993 edition was a reconfirmation of the 1987 edition.

The 1998 edition was completely rewritten, incorporating editorial changes with the elimination of nonmandatory language. The only significant technical change was the incorporation of the requirement of two tests for a product to determine its heat of combustion. A maximum 10 percent variation was permitted; otherwise, a third test was required.

Also in 1998, a new Appendix A was added, providing explanatory material. A new Appendix C containing material extracted from Appendix C of NFPA 220, *Standard on Types of Building Construction*, was added for informational purposes.

The 2003 edition of NFPA 259 was updated to incorporate the requirements of the *Manual of Style for NFPA Technical Committee Documents*.

The 2008 edition of NFPA 259 was a reconfirmation of the 2003 edition.

The 2013 edition was updated to include a new test limitation, revised oxygen bomb calorimeter requirements, and revised annex material.



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Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

Information on referenced publications can be found in Chapter 2 and Annex D.

Chapter 1 Administration

1.1* Scope. This method of test shall provide a means of determining, under controlled laboratory conditions, the potential heat of building materials subjected to a defined high-temperature exposure condition.

1.2* Purpose. This test method shall yield a property-type measurement of the amount of heat that can potentially be given off by building materials when they are exposed to a heat source at 750°C.

1.3 Units and Formulas.

1.3.1 SI Units. Units of measurement in this standard are in accordance with the modernized metric system known as the International System of Units (SI).

1.4 Test Method Summary.

1.4.1 One of four specimens removed from the material to be evaluated shall be pulverized, pelleted, and combusted in a high-pressure oxygen atmosphere. This shall determine the gross heat of combustion per unit mass of the material.

1.4.2 Another specimen shall be heated in air for 2 hours at a temperature of 750°C. The resulting residue of this specimen, if any, shall be ground or pulverized, mixed with a combustion promoter, and pelleted for combusting in the same manner as the first specimen.

1.4.3 After correcting for the heat produced by the combustion promoter, the difference in the measured heat per unit mass of the first specimen and the residue, if any, of the second specimen shall be the potential heat of the material as defined in Chapter 3.

1.4.4 The test procedure shall follow the schematic illustrated in Figure 1.4.4.

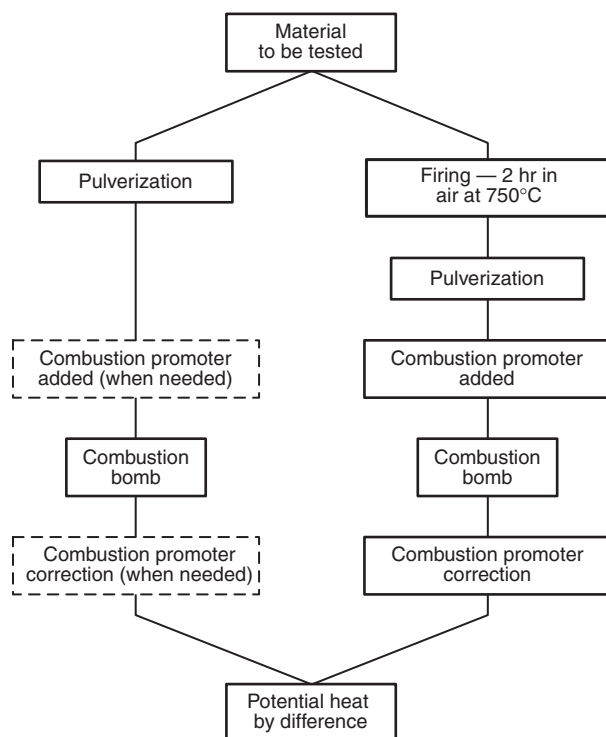


FIGURE 1.4.4 Schematic Diagram of Test Procedure for Potential Heat Measurements.

1.4.5* Test Limitations.

1.4.5.1 This test method shall not be used to measure heat release rates of materials.

1.4.5.2 These data alone shall not be used to describe the fire hazard of a material's specific end use or predict its response to real fires.

1.4.5.3 Nonhomogeneous or layered materials greater than 76 mm in thickness shall not be tested in accordance with this test method due to specimen size limitations.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. (Reserved)

2.3 Other Publications.

2.3.1 ASTM Publications. ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

• ASTM D 5865, *Standard Test Method for Gross Calorific Value of Coal and Coke*, 2011a.

2.3.2 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections. (Reserved)