



Standard Practice for Measuring the Uniformity of Furnace Exposure on Test Specimens¹

This standard is issued under the fixed designation E2749; 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 standard provides general principles for measuring the uniformity of the furnace exposure on specimens tested in accordance with Test Methods [E119](#), [E814](#), [E1529](#), [E1725](#), [E1966](#) and [E2336](#).

1.2 This practice specifies the materials and the construction requirements for a standardized test specimen used to provide a mounting surface for the instrumentation that measures furnace exposure.

1.3 The instrumentation records temperatures, pressure differentials and oxygen content near the surface of the test specimen.

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

1.5 *This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.*

1.6 *Fire testing is inherently hazardous. Adequate safeguards for personnel and property shall be employed in conducting these tests.*

1.7 *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 This practice is under the jurisdiction of ASTM Committee [E05](#) on Fire Standards and is the direct responsibility of Subcommittee [E05.11](#) on Fire Resistance.

Current edition approved June 1, 2015. Published July 2015. Originally approved in 2010. Last previous edition approved in 2015 as E2749-15. DOI:10.1520/E2749-15A.

2. Referenced Documents

2.1 ASTM Standards:²

[C1396/C1396M](#) Specification for Gypsum Board
[E119](#) Test Methods for Fire Tests of Building Construction and Materials
[E176](#) Terminology of Fire Standards
[E814](#) Test Method for Fire Tests of Penetration Firestop Systems
[E1529](#) Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies
[E1725](#) Test Methods for Fire Tests of Fire-Resistive Barrier Systems for Electrical System Components
[E1966](#) Test Method for Fire-Resistive Joint Systems
[E2336](#) Test Methods for Fire Resistive Grease Duct Enclosure Systems

2.2 ISO Technical Report:

[ISO/TR 834-2](#) Fire resistance tests – Elements of building construction – Part 2: Guide on measuring uniformity of furnace exposure on test samples

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology [E176](#).

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *effective area of the furnace opening*—furnace opening within the boundaries of the monitoring instrumentation.

4. Summary of Practice

4.1 This practice consists of preparing a standardized test specimen to represent test specimens described in Test Methods [E119](#), [E814](#), [E1529](#), [E1725](#), [E1966](#) and [E2336](#). The

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.