



Standard Test Method for Capture and Containment Performance of Commercial Kitchen Exhaust Ventilation Systems¹

This standard is issued under the fixed designation F1704; 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 Characterization of capture and containment performance of hood, appliance(s), and replacement air system during cooking and non-cooking conditions (idle):

1.2 Parametric evaluation of operational or design variations in appliances, hoods, or replacement air configurations.

1.3 The test method to determine heat gain to space from commercial kitchen ventilation/appliance systems has been re-designated as Test Method F2474.

1.4 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *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.*

1.6 *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

F1275 Test Method for Performance of Griddles

F1361 Test Method for Performance of Open Deep Fat Fryers

F1484 Test Methods for Performance of Steam Cookers

F1496 Test Method for Performance of Convection Ovens

F1521 Test Methods for Performance of Range Tops

F1605 Test Method for Performance of Double-Sided Griddles

F1639 Test Method for Performance of Combination Ovens (Withdrawn 2012)³

F1695 Test Method for Performance of Underfired Broilers

F1784 Test Method for Performance of a Pasta Cooker

F1785 Test Method for Performance of Steam Kettles

F1787 Test Method for Performance of Rotisserie Ovens

F1817 Test Method for Performance of Conveyor Ovens

F1964 Test Method for Performance of Pressure Fryers

F1965 Test Method for Performance of Deck Ovens

F1991 Test Method for Performance of Chinese (Wok) Ranges

F2093 Test Method for Performance of Rack Ovens

F2144 Test Method for Performance of Large Open Vat Fryers

F2237 Test Method for Performance of Upright Overfired Broilers

F2239 Test Method for Performance of Conveyor Broilers

F2474 Test Method for Heat Gain to Space Performance of Commercial Kitchen Ventilation/Appliance Systems

2.2 *ASHRAE Standards:*⁴

ASHRAE Guideline 2-1986 (RA90) Engineering Analysis of Experimental Data

2.3 *ANSI Standard:*⁵

ANSI/ASHRAE 41.2 Standard Methods for Laboratory Air-Flow Measurement

ANSI/ASHRAE 51 and ANSI/AMCA 210 Laboratory Method of Testing Fans for Rating

NOTE 1—The replacement air and exhaust system terms and their definitions are consistent with terminology used by the American Society of Heating, Refrigeration, and Air Conditioning Engineers, see Ref (1).⁶ Where there are references to cooking appliances, an attempt has been

¹ This test method are under the jurisdiction of ASTM Committee F26 on Food Service Equipment and are the direct responsibility of Subcommittee F26.07 on Commercial Kitchen Ventilation.

Current edition approved April 1, 2017. Published April 2017. Originally approved in 1996. Last previous edition approved in 2012 as F1704 – 12. DOI: 10.1520/F1704-12R17.

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.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), 1791 Tullie Circle, NE, Atlanta, GA 30329.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁶ The boldface numbers in parentheses refer to the list of references at the end of these test methods.