Designation: F 1787 – 98 (Reapproved 2003)

An American National Standard

# Standard Test Method for Performance of Rotisserie Ovens[1]

This standard is issued under the fixed designation F 1787; 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 evaluates the energy consumption and cooking performance of rotisserie ovens. The food service operator can use this evaluation to select a rotisserie oven and understand its energy performance.

1.2 This test method is applicable to thermostatically-controlled gas and electric rotisserie ovens designed for batch cooking.

1.3 The rotisserie oven can be evaluated with respect to the following (where applicable):

1.3.1 Energy input rate (10.2),

1.3.2 Preheat energy and time (10.4),

1.3.3 Idle energy rate (10.5),

1.3.4 Pilot energy rate, if applicable (10.6),

1.3.5 Cooking energy efficiency and production capacity (10.9), and

1.3.6 Holding energy rate and product shrinkage (optional, 10.10),

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

1.5 *This test method 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.*

## 2. Referenced Documents

2.1 *ANSI Document:*

ANSI Standard Z83.11 American National Standard for Gas Food Service Equipment[2]

2.2 *ASHRAE Document:*

ASHRAE Guideline 2—1986 (RA90) Engineering Analysis of Experimental Data[3]

## 3. Terminology

3.1 *Definitions:*

3.1.1 *cooking cavity*, *n*—that portion of the appliance in which food products are heated or cooked.

3.1.2 *cooking energy*, *n*—energy consumed by the rotisserie oven as it is used to cook whole chickens under heavy- and light-load conditions.

3.1.3 *cooking energy efficiency*, *n*—quantity of energy imparted to the chickens and appropriate spits, expressed as a percentage of energy consumed by the rotisserie oven during the cooking event.

3.1.4 *cooking energy rate*, *n*—average rate of energy consumption (Btu/h or kW) during the cooking energy efficiency tests.

3.1.5 *cook time*, *n*—time required to cook thawed (38 to 40°F) whole chickens as specified in 7.4 to an average temperature of 195°F during a cooking energy efficiency test.

3.1.6 *energy input rate*, *n*—peak rate at which a rotisserie oven consumes energy (Btu/h or kW), typically reflected during preheat.

3.1.7 *idle energy rate*, *n*—the rate of energy consumed (Btu/h or kW) by the rotisserie oven while "holding" or "idling" the cooking cavity at the thermostat set point.

3.1.8 *holding energy rate*, *n*—the rate of energy consumed (Btu/h or kW) by the rotisserie oven while keeping cooked product warm for display or merchandising purposes.

3.1.9 *pilot energy rate*, *n*—average rate of energy consumption (Btu/h) by a rotisserie oven's continuous pilot (if applicable).

3.1.10 *preheat energy*, *n*—amount of energy consumed by the rotisserie oven while preheating the cooking cavity from ambient room temperature (75 ± 5°F) to a calibrated 350°F.

3.1.11 *preheat rate*, *n*—average rate (°F/min) at which the rotisserie oven's cooking cavity is heated from ambient temperature (75 ± 5°F) to 350°F.

3.1.12 *preheat time*, *n*—time required for the rotisserie oven to preheat from ambient room temperature (75 ± 5°F) to 350°F.

3.1.13 *production capacity*, *n*—maximum rate (lb/h) at which the rotisserie oven can bring thawed (38 to 40°F) whole chickens as specified in 7.4 to an average temperature of 195°F.

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[1] This test method is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.06 on Productivity and Energy Protocol.

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[2] Available from the International Approval Services, Inc., 8501 E. Pleasant Valley Road, Cleveland, OH 44131.

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

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