



Standard Test Method for Energy Performance of Powered Open Warewashing Sinks¹

This standard is issued under the fixed designation F 2379; 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 of powered open warewashing sinks. The food service operator can use these tests to evaluate and select a suitable washing device and understand its energy consumption.

1.2 This test method applies to powered open warewashing sinks (powered sinks) with the following characteristics: a large main water sink with electrically powered water pump(s) and multiple high flow water nozzles. The unit may include gas or electric heaters to maintain water temperature. These powered sinks are designed to run for predetermined cycle duration and accommodate pots and pans of various shapes and sizes as well as cooking utensils. They are intended for stand alone use and require little supervision. The powered sink will be tested for the following (where applicable):

- 1.2.1 Maximum energy input rate (10.2),
- 1.2.2 Preheat energy consumption and duration (10.3),
- 1.2.3 Idle energy rate (10.4),
- 1.2.4 Pilot energy rate, if applicable (10.5), and
- 1.2.5 Washing cycle energy consumption (10.6).

NOTE 1—This test method applies only to the powered portion of the unit. Other compartments (sanitizing, rinsing, and so forth) are not evaluated.

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

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.*

2. Referenced Documents

- 2.1 *ASTM Standards:*²

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 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.

D 3588 Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels

2.2 *ANSI Standard:*

2000 International Fuel Gas Code³

2.3 *ASHRAE Documents:*

ASHRAE Guideline 2 (RA90) Engineering Analysis of Experimental Data⁴

ASHRAE 1993 Fundamentals Handbook⁴

3. Terminology

3.1 *Definitions:*

3.1.1 *powered open warewashing sink, or powered sink, n*—an all-purpose, stainless steel water sink with electrically powered water pump(s) and multiple high flow water nozzles designed for cleaning pots, pans, and utensils. The main washing sink holds 60 to 100 gal of heated water. The unit may or may not feature a scrapper sink, rinse tank, sanitizing tank, scrap table, or a drain table, or both.

3.1.2 *test method, n*—a definitive procedure for the identification, measurement, and evaluation of one or more qualities, characteristics, or properties of a material, product, system, or service that produces test results.

3.1.3 *uncertainty, n*—measure of systematic and precision errors in specified instrumentation or measure of repeatability of a reported test result.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *energy input rate, n*—peak rate at which a powered sink consumes energy (Btu/h or kW (kJ/h)).

3.2.2 *idle energy rate, n*—the rate of energy consumed (Btu/h or kW (kJ/h)) by the powered sink while holding or maintaining a water-filled wash sink at the 115°F (46°C) setpoint.

3.2.3 *pilot energy rate, n*—average rate of energy consumption (Btu/h) by a powered sink's continuous pilot (if applicable).

3.2.4 *preheat energy, n*—amount of energy consumed by the powered sink while preheating the wash sink water from 70

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

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

