



Standard Test Method for Prerinse Spray Valves¹

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1. Scope

1.1 This test method covers the water consumption flow rate and cleanability of prerinse spray valves (here after referred to as spray valves). The food service operator can use this evaluation to select a spray valve and understand its water consumption and cleaning effectiveness.

1.2 The following procedures are included in this test method:

1.2.1 Water consumption (see 10.2).

1.2.2 Cleanability (see 10.3).

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

1.4 *This test method may involve hazardous materials, operations, and equipment. It does not address all of the potential safety problems associated with its use. It is the responsibility of the users of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to its use.*

2. Referenced Documents

2.1 NSF Documents:

NSF Listings Food Equipment and Related Products, Components and Materials, NSF International²

3. Terminology

3.1 Definitions:

3.1.1 *cleanability*—the effectiveness of the prerinse spray valve to remove soil from the plate before it is placed in a dishwashing machine.

3.1.2 *test method*—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 a test result.

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

3.2 Abbreviations:

3.2.1 *gpm*—gallons per minute.

4. Summary of Test Method

4.1 The flow rate of the spray valve is determined at the manufacturer's specified water pressure to verify that the spray valve is operating at the manufacturer's rated flow rate. If the measured rate is not within 5 % of the rated flow rate, all further testing ceases and the manufacturer is contacted. The manufacturer may make appropriate changes or adjustments to the spray valve.

4.2 The spray valve's water flow rate is measured at 60 ± 1 psi (2.9 ± 0.5 kPa) settings at a temperature of $120 \pm 4^\circ\text{F}$ ($49 \pm 2^\circ\text{C}$).

4.3 The spray valve's cleanability (effectiveness) is determined at 60 ± 1 psi (2.9 ± 0.5 kPa), with a water temperature of $120 \pm 4^\circ\text{F}$ ($49 \pm 2^\circ\text{C}$).

5. Significance and Use

5.1 The flow rate test is used to confirm that the spray valve is operating at the manufacturer's rated flow rate at the specified water pressure. This test would also assist the operator in controlling the water and sewer consumption and reduce the water heating bills.

5.2 The cleanability test is used to verify the spray valve's effectiveness at cleaning the plates before they are sent into the dishwashing machine.

6. Apparatus

6.1 *Analytical Balance Scale*, or equivalent, for measuring the weight of the plates and water container. It shall have a resolution of 0.01 lb (5 g) and an uncertainty of 0.01 lb (5 g).

6.2 *Calibrated Exposed Junction Thermocouple Probes*, with a range from 50 to 200°F (10 to 93°C), with a resolution of 0.2°F (0.1°C) and an uncertainty of 1.0°F (0.5°C), for measuring water line temperatures. Calibrated K-type 24-GA thermocouple wire with stainless steel sheath and ceramic insulation is the recommended choice for measuring the water line temperatures. The thermocouple probe can be fed through a compression fitting so as to submerge exposed junction in the water lines.

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 NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140.