



Standard Specification for Feeders, Detergent, Rinse Agent, and Sanitizing Agent for Commercial Dishwashing and Glasswashing Machines¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers detergent feeders, rinse additive feeders, and sanitizing agent feeders intended to automatically maintain the concentration of additives in the wash, recirculated rinse, or non-recirculated rinse water of commercial spray-type dishwashing and glasswashing machines.

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

2. Referenced Documents

2.1 ASTM Standards:²

[A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip](#)
[D3951 Practice for Commercial Packaging](#)
[F760 Specification for Food Service Equipment Manuals](#)

2.2 NSF International Standards:

[NSF No. 29 Detergent/Chemical Feeders for Commercial Dishwashing Machines](#)³
[NSF No. 51 Plastic Material and Components Used in Food Equipment](#)³
[NSF Food Service Equipment Listing](#)³

2.3 Underwriters Laboratories Standards:

[UL 94 Test for Flammability of Plastic Materials for Parts in Devices and Appliances](#)⁴
[UL 73 Motor Operated Appliances](#)⁴

¹ This specification is under the jurisdiction of ASTM Committee F26 on Food Service Equipment and is the direct responsibility of Subcommittee F26.01 on Cleaning and Sanitation Equipment.

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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.

³ Available from NSF International, P.O. Box 130140, 789 N. Dixboro Rd., Ann Arbor, MI 48113-0140, <http://www.nsf.org>.

⁴ Available from Underwriters Laboratories (UL), 333 Pfingsten Rd., Northbrook, IL 60062-2096, <http://www.ul.com>.

2.4 *American Society of Sanitary Engineering Standards: ASSE 1001 Pipe Applied Atmospheric Vacuum Breakers*⁵

2.5 *Building Officials and Code Administrators International Standard:*

[BOCA Basic Plumbing Code](#)⁶

3. Terminology

3.1 Definitions:

3.1.1 *detergent feeder*—a device that automatically feeds detergents into wash tanks of commercial dishwashing and glasswashing machines.

3.1.2 *rinse additive feeder*—a device that automatically feeds rinse additives into rinse water of commercial dishwashing and glasswashing machines.

3.1.3 *sanitizing agent feeder*—a device that automatically feeds sanitizer into rinse water of commercial dishwashing and glasswashing machines.

4. Classification

4.1 *General*—Detergent, rinse additive, and sanitizing agent feeders shall be of the following types and styles as specified.

4.2 Types:

4.2.1 *Type I*—Detergent feeder, concentration sensing or controlling.

4.2.2 *Type II*—Detergent feeder, timed delivery.

4.2.3 *Type III*—Rinse additive feeder, flow/pressure, or electrically activated.

4.2.4 *Type IV*—Rinse additive feeder, timed delivery.

4.2.5 *Type V*—Sanitizing agent feeder, flow/pressure, or electrically activated.

4.2.6 *Type VI*—Sanitizing agent feeder, timed delivery.

4.3 Styles:

4.3.1 *Style I*—Detergent feeder, powder product.

4.3.2 *Style II*—Detergent feeder, liquid product.

4.3.3 *Style III*—Detergent feeder, slurry product.

⁵ Available from American Society of Sanitary Engineering, 901 Canterbury, Suite A Westlake, OH 44145, <http://www.asse-plumbing.org>.

⁶ Available from Building Officials and Code Administrators International, 4051 West Flossmoor Rd., Country Club Hills, IL 60477, <http://www.iccsafe.org>.

- 4.3.4 *Style IV*—Detergent feeder, solid cast product.
- 4.3.5 *Style V*—Rinse additive feeder, liquid product.
- 4.3.6 *Style VI*—Rinse additive feeder, solid cast product.

4.4 All detergent, rinse additive, and sanitizing feeders of the same manufacture, classification, and model designation shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, and spare parts.

5. Ordering Information

5.1 Purchasers should select from the types and styles of feeders from this specification and include the following information in the procurement document:

- 5.1.1 Title, number, and year of this specification.
- 5.1.2 Type and style of feeder(s) required.
 - 5.1.2.1 Individual feeders.
 - 5.1.2.2 Combined feeder systems.
- 5.1.3 Type and manufacturer's model and electrical characteristics of dishmachine or glasswasher for which the feeder is intended.
- 5.1.4 Manufacturer's certification, when required (see Section 11).

6. Materials and Manufacture

6.1 All materials shall be as follows:

6.1.1 Materials used shall be free from defects that would adversely affect the performance or maintainability of individual components or of the overall assembly. Detergent, rinse additive, and sanitizing agent feeders shall meet the material design and construction requirements of NSF No. 29.

6.1.2 *Corrosion-Resistant Steel*—Corrosion-resistant steel shall conform to the requirements of any 300 series stainless steel unless otherwise specified in Specification A167.

6.1.3 *Corrosion-Resisting Material*—Corrosion-resisting material is other than corrosion-resistant steel that is equivalent in the feeder application.

6.1.4 *Plastics*—All plastic materials and components shall conform to NSF No. 51 and UL 94 as applicable.

6.1.5 *Alternate Materials*—Whenever specific materials are mentioned, it is understood that the use of materials proven to be equally satisfactory from the standpoint of performance shall be permitted.

7. Construction Requirements

7.1 *General*—The feeder shall be complete so that when connected to the specified source of power (electrical or water, or both), the unit can be used for its intended function. Detergent, rinse additive, and sanitizing agent supplying housings (hoppers, reservoirs, or containers) shall be designed to minimize splash and spillage during operation and at the time of product replenishment.

7.2 *Electrical Requirements:*

7.2.1 Feeders shall be designed, when applicable, to utilize the properly marked dishmachine or glasswasher terminal connections as a power source.

7.2.2 All electrical equipment shall meet the applicable requirements for UL 73 and shall be capable of operation in an ambient room temperature of $115 \pm 9^\circ\text{F}$ ($46 \pm 5^\circ\text{C}$).

7.3 *Water Inlets*—All water inlets to feeders shall be provided with protection against backflow by a vacuum breaker, air gap, or other approved method or in accordance with BOCA Basic Plumbing Code.

7.4 *Vacuum Breakers*—Vacuum breakers shall comply with ASSE 1001.

7.5 *Rinse/Sanitizing Agent Feeder Water Supply*—Type III and Type V Feeders shall be provided with a 1/8-in. (3.175-mm) NPT male pipe fitting for installation in the dishmachine final rinse line at a point 6 in. (152 mm) below the vacuum breaker.

7.6 *Sensing Probe*—Type I detergent feeders shall be provided with a sensing probe and appropriate hardware for installation through a 7/8-in. (22.22-mm) diameter hole in the machine wash tank wall.

7.7 *Corrosion-Resistance*—All metal components and assemblies that come in direct contact with the chemical solution being dispensed shall be of corrosion-resistant steel or equivalent. Metal parts not in direct contact with the chemical solution shall be of corrosion-resisting material.

8. Performance Requirements

8.1 *Performance Standards Compliance*—Detergent and rinse additive feeders shall conform to the requirements of UL 73.

9. Quality Assurance

9.1 Unless otherwise specified in the contract or purchase order, the manufacturer is responsible for the performance of all requirements as indicated in this specification. Except as otherwise specified in the contract or purchase order, the manufacturer may use his own or any other facility suitable for the testing of the feeder requirements specified herein.

10. Test Methods

10.1 *Operational*—Feeders shall be tested in accordance with manufacturer's standard practice to determine compliance with requirements of NSF 29.

11. Certification

11.1 Certification of compliance with the standards cited in this specification shall be provided to the purchaser if required in the purchase document.

11.2 *UL Listing*—Acceptable evidence of meeting the requirements of UL 73 shall be UL listing mark, or UL label, or a certified test report from a recognized independent testing laboratory, acceptable to the user.

11.3 *NSF Listing*—Acceptable evidence of meeting the requirements of NSF 29 shall be the NSF mark on the feeder and listing in the NSF Official Listing of Food Service Equipment or a certified test report from a recognized independent testing laboratory, acceptable to the user.

12. Product Marking

12.1 *Feeder Identification*—Identification shall be permanently and legibly marked directly on the feeder or on a corrosion-resisting material securely attached to the feeder at

the source of manufacture. Identification shall include the manufacturer's model, name, and trademark to be readily identifiable. Information required by NSF 29 and UL 73 shall be included on the feeder data plate.

12.2 *Operating Instructions*—Operating instructions shall be provided in accordance with the requirements of NSF 29.

13. Manuals

13.1 The following information shall be supplied in the manuals:

- 13.1.1 Installation instructions,
- 13.1.2 Operating guide,
- 13.1.3 Maintenance and service procedures, and

13.1.4 Service parts list.

13.2 Manuals shall be in compliance with Specification F760.

14. Packaging Requirements

14.1 Unless otherwise specified, packaging shall be manufacturer's standard commercial packaging as meets interstate shipping requirements and in accordance with Practice D3951.

15. Keywords

15.1 chemical feeder; detergent dispenser; rinse additive; rinse injector; sanitizer

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