

Commercial warewashing equipment

**NSF International Standard/
American National Standard**

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for Food Equipment —

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Foreword²

The purpose of this Standard is to establish minimum public health and sanitation requirements for the materials, design, construction, and performance of commercial spray-type dishwashing, glasswashing, and pot, pan and utensil washing machines.

The Standard covers commercial dishwashing, glasswashing, and pot, pan and utensil washing machines that wash their contents by applying sprays of detergent solutions and sanitize their contents by applying either hot water sprays or chemical sanitizing solutions. Both stationary rack and conveyor machines are covered by the scope of this Standard. All equipment previously covered by NSF 26 – 1980: *Pot, pan, and utensil commercial spray-type washing machines* is also covered by the scope of this Standard.

The 2003 revision of this Standard includes changes to the sections pertaining to detergent and chemical sanitizer feeders. Changes to these sections were made to ensure consistency with NSF/ANSI 29, *Detergent and chemical feeders for commercial spray-type dishwashing machines*, and with section 4-204.117 of the 2001 FDA Model Food Code.

The microbiological performance tests currently used in this Standard to evaluate the efficacy of chemical sanitizers utilize a selective media (VRB agar) and pour plate method for the enumeration of the challenge organism. The use of nonselective media for the recovery of potentially injured challenge organisms (i.e., *Escherichia coli* exposed to a sanitizer) is currently being investigated for possible consideration in future revisions of this Standard.

If a value for measurement is followed by a value in other units in parenthesis, the second value may be only approximate. The first stated value is the requirement.

This Standard was developed by the NSF Joint Committee on Food Equipment using the consensus process described by the American National Standards Institute.

Suggestions for improvement of this Standard are welcome. Comments should be sent to Chair, Joint Committee on Food Equipment, c/o NSF International, Standards Department, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

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NSF/ANSI Standard for Food Equipment –

Commercial warewashing equipment

1 General

1.1 Purpose

This Standard establishes minimum public health and sanitation requirements for the materials, design, construction, and performance of commercial warewashing machines and their related components.

1.2 Scope

This Standard applies to commercial dishwashing, glasswashing, and pot, pan, and utensil washing machines that wash their contents by applying sprays of detergent solutions with or without blasting media granules and sanitize their contents by applying sprays of hot water or chemical sanitizing solutions. Stationary rack and conveyor machines are covered under this Standard. Equipment components and materials covered under other NSF or NSF/ANSI Standards or criteria shall also comply with the requirements therein. This Standard is not intended to restrict new unit design, provided such design meets the minimum specifications described herein.

1.3 Alternate materials, design, and construction

While specific materials, design, and construction may be stipulated in this Standard, equipment that incorporates alternate materials, design, or construction may be acceptable when such equipment meets the intent of the applicable requirements herein. This Standard is not intended to restrict new unit design, provided such design meets the minimum specifications described herein.

2 Normative references

The following documents contain provisions that, through reference, constitute provisions of this NSF/ANSI Standard. At the time this Standard was balloted, the editions listed below were valid. All documents are subject to revision, and parties are encouraged to investigate the possibility of applying the recent editions of the documents indicated below.

ANSI/ASSE Standard No. 1001 – 1990, *Pipe Applied Atmospheric Type Vacuum Breakers*³

ANSI/ASSE Standard No. 1004 – 1990, *Commercial Dishwashing Machines*³

APHA, *Standard Methods for the Examination of Dairy Products*, sixteenth edition⁴

APHA, *Standard Methods for the Examination of Water and Wastewater*, twentieth edition⁴

³ American Society of Sanitary Engineering, PO Box 40362, Bay Village, OH 44140

⁴ American Public Health Association, 800 I Street, NW, Washington, DC 20001

Code of Federal Regulations, Title 21, (21 CFR) Part 178, *Indirect Food Additives: Adjuvants, Production Aids, and Sanitizers*⁵

NSF/ANSI 29 – 2003, *Detergent and chemical feeders for commercial spray-type dishwashing machines*

NSF/ANSI 170 – 2002: *Glossary of food equipment terminology*

3 Definitions

Terms used in this Standard that have special technical meaning are defined in NSF/ANSI 170.

4 Materials

The requirements contained in this section are intended to ensure that the materials used in the construction of warewashing machines resist wear and penetration by vermin and are unaffected by detergents, sanitizers, and other substances present in the intended use environment.

4.1 Corrosion resistance

Exposed surfaces shall be corrosion resistant. Surfaces, other than interior surfaces exposed to wash and rinse water, may be rendered corrosion resistant by the application of a coating or coatings. Coatings shall conform to the requirements in 4.3.

NOTE – Some surfaces may require additional treatment following fabrication in order to render them corrosion resistant.

4.2 Smoothness and cleanability

Exposed surfaces shall be smooth and easily cleanable. Interior surfaces repeatedly exposed to wash water, rinse water, or both are not required to be smooth.

4.3 Coatings

4.3.1 Coatings containing lead as an intentional ingredient shall not be used. Coatings with an unintentional lead content (lead impurity) greater than 0.06% shall not be used.

4.3.2 Coatings shall resist cracking and chipping under use conditions.

4.4 Solder

Solder with lead as an intentional ingredient shall not be used on surfaces in contact with wash water or rinse water.

4.5 Copper water lines

Copper water lines shall not pass through a machine tank. They shall not be used in any recirculating system or be in contact with solutions of detergents, chemical sanitizers, or other chemicals. Copper water lines are exempt from the corrosion resistance requirement in 4.1.

⁵ U.S. Government Printing Office, Washington, DC 20402