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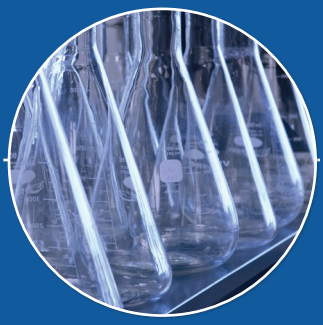
NSF/ANSI 3 - 2017

Commercial Warewashing Equipment



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for Food Equipment –

Commercial warewashing equipment

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Foreword[2]

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.

This edition of the Standard contains the following revision:

Issue 12

This revision updated normative references in section 2 and revised language in section 5.9.2.

The figure titles in this edition have also been updated to maintain consistency with other NSF Standards:

Previous edition of NSF/ANSI 3	Current edition of NSF/ANSI 3
Figure 6.1	Figure 1
Figure 6.2	Figure 2
Figure 6.3	Figure 3
Figure 6.4	Figure 4
Figure 6.5	Figure 5

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. This Standard is maintained on a Continuous Maintenance schedule and can be opened for comment at any time. Comments should be sent to Chair, Joint Committee on Food Equipment at standards@nsf.org or, c/o NSF International, Standards Department, P.O. 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 that 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.

1.4 Measurement

Decimal and SI conversions provided parenthetically shall be considered equivalent. Metric conversions and significant figure rounding have been made according to IEEE/ASTM SI 10.

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. The most recent published edition of the document shall be used for undated references.

40 C.F.R. §180.940 *Tolerance exemptions for active and inert ingredients for use in antimicrobial formulations (Food-Contact Surface Sanitizing Solutions)*[3]

ANSI/ASSE 1001 – 2008. *Atmospheric Type Vacuum Breakers*[4]

[3] U. S. Government Printing Office, Washington, DC 20402. <www.gpo.gov>.

[4] ASSE International 18927 Hickory Creek Drive, Suite 220 Mokena, Illinois 60448. <www.asse-plumbing.org>.

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ANSI/ASSE.1004 – 2008. *Backflow Prevention Requirements for Commercial Dishwashing Machines*[4]

APHA, *Standard Methods for the Examination of Dairy Products*, seventeenth edition[5]

APHA, *Standard Methods for the Examination of Water and Wastewater,* 22nd edition[5]

IAPMO – *Uniform Plumbing Code* 2015[6]

ICC – *International Plumbing Code* 2015[7]

IEEE/ASTM SI 10 – 2010. *American National Standard for Metric Practice*[8]

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

NSF/ANSI 170. *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 manufacture of warewashing machines resist wear and penetration by vermin (insulation in sealed, non-food zone enclosures is exempt) 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 in the intended use environment. 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 conforming to NSF/ANSI 51, as applied, may be used to render a material corrosion resistant.

NOTE — Materials that are worked (e.g., bent, cut, sheared, extruded, drawn) during equipment manufacture 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.

[5] American Public Health Association, 800 I Street, NW, Washington, DC 20001. <www.apha.org>.

[6] International Association of Plumbing and Mechanical Officials, 5001 E. Philadelphia St., Ontario, CA 91761. <www.iapmo.org>.

[7] International Code Council, 5203 Leesburg Pike, Suite 600; Falls Church, VA 22041. <www.iccsafe.org>.

[8] ASTM International, 100 Barr Harbor Dr., West Conshohocken, PA 19428. <www.astm.org>.

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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 containing 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 Design and construction

This section contains design and construction requirements for equipment covered within the scope of this Standard.

5.1 General sanitation

5.1.1 Equipment shall be designed and manufactured to prevent the harborage of vermin and the accumulation of dirt and debris, and to permit the inspection, maintenance, servicing, and cleaning of the equipment and its components.

5.1.2 Surfaces exposed to wash water, rinse water, routine splashes, spills, or other soiling shall be readily accessible and easily cleanable. Additional access openings shall be provided when the installation of a machine would otherwise prevent these surfaces from being readily accessible and easily cleanable. Valves and pipes shall not obstruct access openings or interfere with cleaning.

5.1.3 Equipment parts and components that require removal for routine equipment operation or cleaning shall be readily removable.

NOTE — Safety devices required by federal, state, or local regulations are not required to be readily removable.

5.2 Joints and seams

5.2.1 Permanent joints and seams in a tank shall be sealed and smooth. Tanks shall be of integral construction or integrally welded.

5.2.2 Permanent joints and seams, other than those in the tank, shall be sealed. Joints made by overlapping sheets of metal shall not create upward-facing horizontal ledges.

5.2.3 Permanent joints and seams that result from the installation of functional parts, baffles, and accessories, or from the joining of machine components, shall be readily accessible and easily cleanable.

5.3 Reinforcing and framing

5.3.1 Exposed reinforcing and framing members and gussets shall be easily cleanable. Reinforcing and framing members shall be designed and manufactured to prevent the harborage of vermin.

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