



*NSF International Standard /  
American National Standard*

## NSF/ANSI 3 - 2017

### Commercial Warewashing Equipment



*NSF International, an independent, not-for-profit, non-governmental organization, is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders.*

This Standard is subject to revision.  
Contact NSF to confirm this revision is current.

Users of this Standard may request clarifications and interpretations, or propose revisions by contacting:

Chair, Joint Committee on Food Equipment  
c/o NSF International  
789 North Dixboro Road, P.O. Box 130140  
Ann Arbor, Michigan 48113-0140 USA  
Phone: (734) 769-8010 Telex: 753215 NSF INTL  
FAX: (734) 769-0109 E-mail: [info@nsf.org](mailto:info@nsf.org)  
Web: <http://www.nsf.org>

**NSF/ANSI 3-2017**

NSF International Standard/  
American National Standard  
for Food Equipment –

# **Commercial warewashing equipment**

Standard Developer

**NSF International**

**NSF International**

**Designated as an ANSI Standard**

April 11, 2017

**American National Standards Institute**

Recommended for Adoption by  
**The NSF Joint Committee on Food Equipment**  
**The NSF Council of Public Health Consultants**

Adopted by  
**The NSF Board of Directors**  
**May 1953**

Revised April 1965  
Revised November 1977  
Revised June 1982  
Revised July 1996  
Revised May 2001  
Revised April 2003  
Revised November 2005  
Revised March 2007  
Revised April 2008  
Revised April 2009  
Revised November 2010  
Revised August 2012  
Revised April 2017

Published by

**NSF International**  
**PO Box 130140, Ann Arbor, Michigan 48113-0140, USA**

For ordering copies or for making inquiries with regard to this Standard, please reference the designation "NSF/ANSI 3 – 2017."

Copyright 2017 NSF International

Previous Editions © 2012, 2010, 2009, 2008, 2007, 2005, 2003, 2001, 1996, 1982, 1977, 1965

Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from NSF International.

Printed in the United States of America.

## Disclaimers<sup>1</sup>

NSF, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of NSF represent its professional judgment. NSF shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. NSF shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

NSF Standards provide basic criteria to promote sanitation and protection of the public health. Provisions for mechanical and electrical safety have not been included in this Standard because governmental agencies or other national standards-setting organizations provide safety requirement.

Participation in NSF Standards development activities by regulatory agency representatives (federal, local, state) shall not constitute their agency's endorsement of NSF or any of its Standards.

Preference is given to the use of performance criteria measurable by examination or testing in NSF Standards development when such performance criteria may reasonably be used in lieu of design, materials, or construction criteria.

The illustrations, if provided, are intended to assist in understanding their adjacent standard requirements. However, the illustrations may not include **all** requirements for a specific product or unit, nor do they show the only method of fabricating such arrangements. Such partial drawings shall not be used to justify improper or incomplete design and construction.

Unless otherwise referenced, the annexes are not considered an integral part of NSF Standards. The annexes are provided as general guidelines to the manufacturer, regulatory agency, user, or certifying organization.

---

<sup>1</sup> The information contained in this Disclaimer is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Disclaimer may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

This page is intentionally left blank.

Contents

1	General .....	1
1.1	Purpose .....	1
1.2	Scope .....	1
1.3	Alternate materials, design, and construction .....	1
1.4	Measurement .....	1
2	Normative references .....	1
3	Definitions .....	2
4	Materials .....	2
4.1	Corrosion resistance .....	2
4.2	Smoothness and cleanability .....	2
4.3	Coatings .....	3
4.4	Solder .....	3
4.5	Copper water lines .....	3
5	Design and construction .....	3
5.1	General sanitation .....	3
5.2	Joints and seams .....	3
5.3	Reinforcing and framing .....	3
5.4	Inspection and maintenance panels .....	4
5.5	Louvers .....	4
5.6	Equipment mounting .....	4
5.7	Legs and feet .....	4
5.8	Temperature indicating devices .....	5
5.9	Plumbing connections .....	5
5.10	Thermostatic control .....	6
5.11	Separation of residual food waste .....	6
5.12	Pumps .....	6
5.13	Spray assemblies .....	6
5.14	Racks .....	6
5.15	Sanitizing rinse .....	7
5.16	Pressure gauges .....	7
5.17	Condensers and blowers .....	7
5.18	Curtains and similar devices .....	7
5.19	Rinse aid, detergent, and chemical sanitizer feeders .....	7
5.20	Additional design and construction requirements for specific machine designs .....	8
6	Performance .....	9
6.1	Soil removal .....	10
6.2	Sanitization efficacy .....	14
6.3	Thermostat differential .....	20
7	Manufacturer's specifications .....	20
7.1	Hot water sanitizing machines .....	20
7.2	Chemical sanitizing machines .....	21
7.3	Equipment labeling .....	22
7.4	Manufacturer's instructions .....	22
8	Warewashing equipment provided with a security package .....	22
8.1	General .....	22
8.2	Special tools .....	22
8.3	Fastening methods .....	22

8.4 Drawers .....	23
8.5 Labeling.....	23
9 Warewashing equipment for use in marine environments .....	23
9.1 Materials.....	23
9.2 Design and construction.....	23
Annex A Heat Unit Equivalent (HUE) values corresponding to temperature in degrees Fahrenheit .....	25
Annex B Ingredients for pie filling .....	27
Annex C Food Equipment Joint Committee.....	29



## Foreword<sup>2</sup>

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](mailto:standards@nsf.org) or, c/o NSF International, Standards Department, P.O. Box 130140, Ann Arbor, Michigan 48113-0140, USA.

---

<sup>2</sup> The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. Therefore, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

This page is intentionally left blank.

## 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)*<sup>3</sup>

ANSI/ASSE 1001 – 2008. *Atmospheric Type Vacuum Breakers*<sup>4</sup>

<sup>3</sup> U. S. Government Printing Office, Washington, DC 20402. <[www.gpo.gov](http://www.gpo.gov)>.

<sup>4</sup> ASSE International 18927 Hickory Creek Drive, Suite 220 Mokena, Illinois 60448. <[www.asse-plumbing.org](http://www.asse-plumbing.org)>.