

NSF/ANSI 2 – 2005a

# Food equipment

---

**NSF International Standard/  
American National Standard**

NSF/ANSI 2 – 2005a



*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 2 – 2005a**

NSF International Standard/  
American National Standard  
for Food Equipment –

## **Food equipment**

Standard Developer

**NSF International**

Adopted September 23, 2005

**NSF International Board of Directors**

**Designated as an ANSI Standard**

September 23, 2005

**American National Standards Institute**

Prepared by  
**The NSF Joint Committee on Food Equipment**

Recommended for Adoption by  
**The NSF Council of Public Health Consultants**

Adopted by  
**The NSF Board of Directors**  
**October 1952**

Revised April 1965  
Revised August 1968  
Revised July 1973  
Revised November 1977  
Revised December 1980  
Revised June 1982  
Revised November 1987  
Revised May 1992  
Revised May 1996  
Revised June 2002  
Editorial revision – April 2003  
Revised February 2005  
Revised September 2005

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 2 – 2005a."

Copyright 2005 NSF International  
Previous editions © 2002, 1996, 1992, 1987, 1982, 1980, 1977, 1973, 1968, 1965, 1952

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 requirements.

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. As such, 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 blank.

## Contents

Foreword .....	ix
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 .....	3
4.1 Conformance with NSF/ANSI 51 .....	3
4.2 Solder .....	3
4.3 Sound dampening material .....	3
4.4 Scrapping blocks .....	3
4.5 Wood-top bakers tables and cutting boards .....	3
5 Design and construction .....	3
5.1 General sanitation .....	3
5.2 Internal angles and corners, food zone .....	4
5.3 External angles and corners .....	4
5.4 Joint and seams .....	4
5.5 Fasteners .....	5
5.6 Insulation .....	5
5.7 Reinforcing and framing .....	5
5.8 Inspection and maintenance panels .....	5
5.9 Doors .....	5
5.10 Door tracks and guides .....	6
5.11 Door closers, handles, knobs, and pulls .....	6
5.12 Hinges .....	6
5.13 Covers .....	7
5.14 Edges and nosings .....	7
5.15 Openings to food zones .....	7
5.16 Louvers .....	8
5.17 Hardware .....	8
5.18 Handles and pulls .....	8
5.19 Latches and catches .....	8
5.20 Breaker strips .....	8
5.21 Equipment mounting .....	8
5.22 Legs and feet .....	9
5.23 Casters, rollers, and gliders .....	9
5.24 Open display stands and brackets .....	10
5.25 Counter tray slides .....	10
5.26 Shelving .....	10
5.27 Counter steps and platforms .....	11
5.28 Pipe chases .....	11
5.29 Enclosed spaces .....	11
5.30 Food and flatware containers and drawers .....	11
5.31 Pots, pans and utensils .....	11
5.32 Insets .....	11
5.33 Bins .....	12
5.34 Ice pans and bins .....	12

5.35	Food display cases .....	12
5.36	Food shields.....	12
5.37	Self-leveling storage systems .....	13
5.38	Dipper wells.....	13
5.39	Sinks .....	13
5.40	Dishtables and accessories .....	14
5.41	Sound dampening.....	15
5.42	Auxiliary cleaning facilities and accessories .....	15
5.43	Backsplashes .....	16
5.44	Tops of counters, tables, and back bars .....	16
5.45	Breakable glass components.....	16
5.46	Light fixtures.....	16
5.47	Thermometers.....	16
5.48	Beverage (urn) stands .....	17
5.49	Water stations .....	17
5.50	Drip pans.....	17
5.51	Syrup and crushed fruit containers .....	17
5.51	Food dispensing pumps.....	17
5.53	Canopies and hoods.....	18
5.54	Wood-top bakers tables and cutting boards .....	18
5.55	Synthetic bakers tables and cutting boards .....	19
5.56	Plumbing connections.....	19
5.57	Wheeled food service equipment.....	20
5.58	Conveyors .....	20
5.59	Enclosed food transport carts and cabinets.....	21
5.60	Custom equipment.....	21
6	Performance.....	21
6.1	Cleaning and sanitization procedures.....	21
6.2	Thermometers.....	23
7	Food equipment provided with a security package.....	24
7.1	General .....	24
7.2	Special tools.....	24
7.3	Fastening methods (splash zone).....	24
7.4	Fastening methods (nonfood zone).....	24
7.5	Hinges .....	24
7.6	Hardware.....	24
7.7	Shelf brackets, pilasters, slides, or cleats .....	24
7.8	Kick plate.....	24
7.9	Drawers .....	24
7.10	Conveyor units .....	24
7.11	Labeling.....	24
8	Supplemental requirements for marine food equipment.....	25
8.1	Materials.....	25
8.2	Design and construction .....	25
Figures		
	Figure 1 – External corners or angles.....	26
	Figure 2 – Single panel door.....	26
	Figure 3 – Openings and rims – food zone.....	27
	Figure 4 – Perforated false bottom .....	27
	Figure 5 – Diverting shelves .....	28
	Figure 6 – Interior fixed shelves.....	28
	Figure 7 – Rack slides.....	28

Figure 8 – Pipe chases .....	29
Figure 9 – Drawers.....	29
Figure 10 – Drop handle assemble.....	30
Figure 11 – Food shield .....	30
Figure 12 – Sinks .....	31
Figure 13 – Urn stands and water stations .....	31
Figure 14 – Notched wood test sample .....	32
Figure 15 – Sample placement under load cell .....	33

Annexes

A	Recommended field installation guidelines.....	A1
A.1	Purpose.....	A1
A.2	Field joints.....	A1
A.3	Service connections.....	A1
B		
B.1	Summary.....	B1
B.2	Equipment.....	B1
B.3	Microorganism.....	B1
B.4	Supplies .....	B1
B.5	Reagents.....	B2
B.6	Safety precautions and hazards .....	B2
B.7	Growth medium.....	B2
B.8	Culture of <i>Escherichia coli</i> .....	B3

This page is intentionally blank.

## Foreword<sup>2</sup>

The purpose of this Standard is to establish minimum food protection and sanitation requirements for the materials, design, fabrication, construction, and performance of food handling and processing equipment.

This Standard was revised to include editorial changes to clarify requirements, achieve consistency with the "boilerplate" language in the NSF food equipment standards and update the normative references. Section 5.39 Dishtables has been updated to combine sections 5.39 Dishtables and 5.41 Auxiliary cleaning facilities and accessories into a single section. The methods used for suspension preparation, controls and analysis of *Escherichia coli* were moved to annex A.

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, 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. As such, 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 blank.

## NSF International Standard for Food Equipment —

# Food equipment

## 1 General

### 1.1 Purpose

This Standard establishes minimum food protection and sanitation requirements for the materials, design, fabrication, construction, and performance of food handling and processing equipment.

### 1.2 Scope

Equipment covered by this Standard includes, but is not limited to, bakery, cafeteria, kitchen, and pantry units and other food handling and processing equipment such as tables and components, counters, hoods, shelves, and sinks.

Section 7 of this Standard pertains to food handling and processing equipment that has been designed and manufactured for special use purposes. Food equipment designed and manufactured with a security package is utilized in environments such as correctional facilities, mental health facilities, or some schools. For these environments, where both sanitation and security are concerns, 7 contains exceptions to this Standard that shall only be applicable to the splash and nonfood zones of food equipment provided with a security package.

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 intent of the applicable requirements herein.

### 1.4 Measurement

Decimal and SI conversions provided parenthetically shall be considered equivalent. Metric conversions 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.