

NSF International Standard / American National Standard

NSF/ANSI 2 - 2012

Food Equipment









NSF International, an independent, notfor-profit, non-governmental organization, is dedicated to being the leading global provider of public health and safetybased 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

Web: http://www.nsf.org

NSF/ANSI 2 - 2012

NSF International Standard/ American National Standard for Food Equipment –

Food equipment

Standard Developer

NSF International

NSF International Board of Directors

Designated as an ANSI StandardOctober 16, 2012 **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
Revised May 2007

Revised March 2008 Revised May 2009 Revised May 2010 Revised October 2012

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 – 2012."

Copyright 2012 NSF International

Previous editions © 2010, 2009, 2008, 2007, 2005, 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.

Disclaimers¹

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.

.

¹ 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						
		pose				
		ppe				
		ernate materials, design, and construction				
	1.4 Me	asurement	. 1			
_			_			
2	Normat	ive references	. 2			
_	5 6 111		_			
3	Definition	ons	. 3			
4	N 4 = 4 = 1 = 1	1_	_			
4	Materia	lsnformance with NSF/ANSI 51	. ა			
		derder				
		und dampening material				
		apping blocks				
		od-top bakers tables and cutting boards				
		ven fabric materials				
	4.0 000	ven labile materials				
5	Design	Design and construction4				
•		neral sanitation				
		ernal angles and corners, food zone				
		ernal angles and corners				
		nts and seams				
		steners				
	5.6 Inst	ulation	. 5			
	5.7 Rei	5.7 Reinforcing and framing				
		5.8 Inspection and maintenance panels				
	5.9 Dod	5.9 Doors				
	5.10	Door tracks and guides	. 6			
	5.11	Door closers, handles, knobs, and pulls				
	5.12	Hinges				
	5.13	Covers				
	5.14	Edges and nosings				
	5.15	Openings into food zones				
	5.16	Louvers				
	5.17	Hardware				
	5.18	Latches and catches				
	5.19	Breaker strips				
	5.20	Equipment mounting				
	5.21 5.22	Legs and feet				
	5.23	Open display stands and brackets				
	5.23 5.24	Counter tray slides				
	5.25	Shelving				
	5.26	Counter steps and platforms				
	5.27	Pipe chases				
	5.28	Enclosed spaces				
	5.29	Food and flatware containers and drawers				
	5.30	Pots, pans and utensils				
	5.31	Insets				
	5.32	Bins				
	5.33	Ice pans and bins				
	5.34	Food display cases				
	5.35	Food shields				

	5.36	Self-leveling storage systems	14			
	5.37	Dipper wells	15			
	5.38	Sinks				
	5.39	Dishtables and accessories				
	5.40	Sound dampening				
	5.41	Backsplashes	17			
	5.42	Tops of counters, tables, and back bars	17			
	5.43	Breakable glass components	17			
	5.44	Light fixtures	17			
	5.45	Thermometers				
	5.46	Beverage stands (beverage counter)	18			
	5.47	Drip troughs	19			
	5.48	Counter-top openings	19			
	5.49	Water stations				
	5.50	Syrup and crushed fruit containers	19			
	5.51	Food dispensing pumps	19			
	5.52	Canopies and hoods	19			
	5.53	Wood-top bakers tables and cutting boards	20			
	5.54	Synthetic bakers tables and cutting boards	20			
	5.55	Plumbing connections				
	5.56	Wheeled food service equipment	21			
	5.57	Conveyors				
	5.58	Enclosed food transport carts and cabinets				
	5.59	Custom equipment				
6	Perforn	Performance				
	6.1 Cleaning and sanitization procedures					
	6.2 Wc	ood cutting boards and bakers tables	24			
	6.3 The	ermometers	25			
7	Food e	equipment provided with a security package	26			
7	7.1 Ge	neral	26			
7	7.1 Ge 7.2 Sp	eneralecial tools	26 26			
7	7.1 Ge 7.2 Sp 7.3 Fas	erialecial toolsstening methods (splash zone)stening m	26 26 26			
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas	eneralecial toolsstening methods (splash zone)stening methods (nonfood zone)	26 26 26 26			
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas	erialecial toolsstening methods (splash zone)stening m	26 26 26 26			
7	7.1 Ge 7.2 Spo 7.3 Fas 7.4 Fas 7.5 Hir	eneralecial toolsstening methods (splash zone)stening methods (nonfood zone)	26 26 26 26			
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha	eneralecial toolsstening methods (splash zone)stening methods (nonfood zone)stening methods (nonfood zone)				
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh	eneral ecial tools stening methods (splash zone) stening methods (nonfood zone) stening metho				
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kic	eneral ecial tools stening methods (splash zone) stening methods (nonfood zone) nges urdware elf brackets, pilasters, slides, or cleats ck plate awers				
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kic	eneral ecial tools stening methods (splash zone) stening methods (nonfood zone) nges rdware elf brackets, pilasters, slides, or cleats				
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kio 7.9 Dra	eneral ecial tools stening methods (splash zone) stening methods (nonfood zone) nges urdware elf brackets, pilasters, slides, or cleats ck plate awers				
7	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kic 7.9 Dra 7.10	eneral				
	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kic 7.9 Dra 7.10 7.11	eneral				
	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma	erial methods (splash zone) stening methods (nonfood zone) nges rdware elf brackets, pilasters, slides, or cleats ck plate awers Conveyor units Labeling emental requirements for marine food equipment aterials				
	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma	erial stening methods (splash zone) stening methods (nonfood zone) stening methods (splash zone) stening stening stening methods (splash zone) stening steni				
	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma	erial methods (splash zone) stening methods (nonfood zone) nges rdware elf brackets, pilasters, slides, or cleats ck plate awers Conveyor units Labeling emental requirements for marine food equipment aterials				
8	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma	erial methods (splash zone) stening methods (nonfood zone) nges rdware elf brackets, pilasters, slides, or cleats ck plate awers Conveyor units Labeling emental requirements for marine food equipment aterials				
8	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De	ecial tools stening methods (splash zone) stening methods (nonfood zone) nges urdware elf brackets, pilasters, slides, or cleats ck plate awers Conveyor units Labeling emental requirements for marine food equipment sterials esign and construction.				
8	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De	ecial tools stening methods (splash zone) stening methods (nonfood zone) nges rdware elf brackets, pilasters, slides, or cleats ck plate awers Conveyor units Labeling emental requirements for marine food equipment sterials esign and construction				
8	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De nex A A.1 Sur A.2 Eq	ecial tools				
8	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De nex A A.1 Sur A.2 Eqr A.3 Mio	ecial tools				
8	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De nex A A.1 Su A.2 Eq A.3 Mio A.4 Su	eneral				
8	7.1 Ge 7.2 Sp 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Sh 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De nex A A.1 Su A.2 Eq A.3 Mio A.4 Su A.5 Re	ecial tools				
7 8	7.1 Ge 7.2 Spr 7.3 Fas 7.4 Fas 7.5 Hir 7.6 Ha 7.7 Shr 7.8 Kio 7.9 Dra 7.10 7.11 Supple 8.1 Ma 8.2 De nex A A.1 Sur A.2 Eq A.3 Mio A.4 Sur A.5 Re A.6 Sar A.7 Gro	ecial tools				

Annex B		B´
B.1 Puri	pose	B [,]
B.2 Fiel	ld joints	B [,]
B.3 Ser	vice connections	B
Annex C		
Annex D		D

This page is intentionally left blank.

Foreword²

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 edition of the Standard contains the following revision:

Issue 18

This revision updated the Normative References and boilerplate language in: 1.4 Measurement; 5.43 Breakable glass components and 6.1 Cleaning and sanitization procedures.

Issue 21

This revision updated the requirement in 5.46 – Beverage (urn) stands to reflect advancements and changes in commercial hot and cold beverage equipment.

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

_

² 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.

© 2012 NSF NSF/ANSI 2 – 2012

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 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.