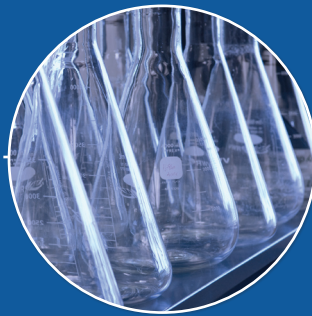




*NSF International Standard /  
American National Standard*

## NSF/ANSI 14 - 2018

Plastics Piping System Components  
and Related Materials



*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 Plastics  
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: [www.nsf.org](http://www.nsf.org)

NSF International Standard /  
American National Standard  
for Plastics —

**Plastics piping system components  
and related materials**

Standard Developer  
**NSF International**

**Designated as an ANSI Standard**  
June 21, 2018  
**American National Standards Institute**

Prepared by  
**The NSF Joint Committee on Plastics**

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

Adopted by  
**NSF International**  
**October 1965**

Revised February 1977  
Revised November 1983  
Revised August 1986  
Revised November 1990  
Revised December 1999  
Revised January 2003  
Revised March 2007  
Revised April 2010  
Revised March 2013  
Revised June 2016

Revised November 1978  
Revised November 1984  
Revised October 1987  
Revised September 1996  
Revised February 2001  
Revised September 2004  
Revised May 2008  
Revised April 2011  
Revised August 2014  
Revised June 2017

Revised November 1980  
Revised November 1985  
Revised December 1988  
Revised November 1998  
Revised January 2002  
Revised August 2006  
Revised December 2009  
Revised February 2012  
Revised May 2016  
Revised November 2018

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 14 – 2018".

Copyright 2018 NSF International

Previous editions © 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2004, 2003, 2002, 2001, 1999, 1998, 1996, 1990, 1988, 1987, 1986, 1985, 1984, 1983, 1980, 1978, 1977.

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 International (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. 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.

## Contents

1	General	
1.1	Purpose	1
1.2	Scope	1
1.3	Materials, design, and construction	1
2	Normative references	1
2.1	Normative references for plastic pipe and related components	2
2.2	Normative references for compounds and other materials	8
2.3	International and other normative references	9
3	Definitions	10
4	Requirements for plastic piping system components and related materials	15
4.1	Materials	15
4.2	Physical and performance requirements	15
4.3	Potable water requirements	15
4.4	Special engineered products	15
4.5	Marking requirements	16
4.6	Quality assurance	16
5	Physical and performance requirements	16
5.1	General	16
5.2	Long-term strength of plastic pipe	16
5.3	Requirements for PVC resins	16
5.4	Critical dimensions	17
5.5	PVC ingredients	17
5.6	Monitoring	17
5.7	Chlorine resistance – dependent transfer listing requirements	17
5.8	Chlorine resistance – equivalency for polyethylene compound modifications	18
5.9	Fittings and valves	19
6	Special engineered (SE) product requirements	20
6.1	General	20
6.2	SE specifications	20
7	Requirements for potable water plastic piping system components and related materials	20
7.1	General	20
7.2	Requirements for generic ingredients	20
7.3	Requirements for lead	22
7.4	Monitoring	22
8	Marking requirements	22
8.1	General	22
8.2	Pipe	22
8.3	Fittings and appurtenances	23
8.4	Thread compounds, sealants, gasket lubricants, solvent cement, and adhesives	23
8.5	Special engineered products	23
8.6	Ingredients	23
9	Quality assurance	23
9.1	General	23
9.2	Start-up and qualification	24
9.3	Generic ingredients	24
9.4	Verification of the calibration of equipment	24
9.5	Quality assurance records	25
9.6	Production code identification	25
9.7	Number of test specimens	25
9.8	Formulation verification for solvent cements and primers	25
9.9	Product-specific quality assurance requirements	25

## **Foreword<sup>2</sup>**

The purpose of this Standard is to establish minimum physical, performance, and health effects requirements for plastics piping system components and related materials.

This edition of the Standard contains the following revisions:

### **Issue 94**

Language was added in Section 4.1.2 to allow the use of rework for polyethylene materials.

### **Issue 96**

ASTM F3128 was added to Table 9.12 – PVC pipe test frequency.

### **Issue 97**

Language clarifying startup was revised in Section 3.5 and 9.2.

### **Issue 99**

Normative references were updated.

### **Issue 100**

The QC tables in Section 9 were updated.

This Standard was developed by the NSF Joint Committee on Plastics using the consensus process described in NSF Standards Development Policies and accredited by ANSI.

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 Plastics at [standards@nsf.org](mailto:standards@nsf.org), or c/o NSF International, Standards Department, PO 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.

NSF/ANSI Standard  
for Plastics —

# Plastics piping system components and related materials

## 1 General

### 1.1 Purpose

This Standard establishes minimum physical, performance, and health effects requirements for plastic piping system components and related materials. These criteria were established for the protection of public health and the environment.

### 1.2 Scope

The physical, performance, and health effects requirements in this Standard apply to thermoplastic and thermoset plastic piping system components including, but not limited to, pipes, fittings, valves, joining materials, gaskets, and appurtenances. The established physical, performance, and health effects requirements also apply to materials (resin or blended compounds) and ingredients used to manufacture plastic piping system components. This Standard provides definitions and requirements for materials, ingredients, products, quality assurance, marking, and recordkeeping. Plastic piping system components which are manufactured to one of the normative references in Section 2 and do not have integral connections specifically intended for plastic piping systems are not covered by this Standard.

### 1.3 Materials, design, and construction

For plastic piping system components and materials cited by the references in Section 2, the materials, design, and construction requirements of this Standard and the applicable product standard(s) in Section 2 shall apply. When materials, designs, or constructions are utilized that are not cited in Section 2, the plastic piping system components and related materials shall comply with the applicable requirements of this Standard. Plastic piping system components and related materials that incorporate materials, designs, or constructions not cited in Section 2 shall be acceptable, provided that such plastic piping system components and related materials can be demonstrated to be at least equivalent in terms of strength, quality, effectiveness, durability, and safety to those that are cited in this Standard.

## 2 Normative references

The following documents contain requirements that, by reference in this text, constitute requirements of this Standard. At the time of publication, the indicated editions were valid. All of the documents are subject to revision, and parties are encouraged to investigate the possibility of applying the recent editions of the documents indicated below. It is the responsibility of the user of this Standard to determine the acceptance of the referenced Standards to the application and requirements of the local jurisdictions. The most recent published edition of the document shall be used for undated references.