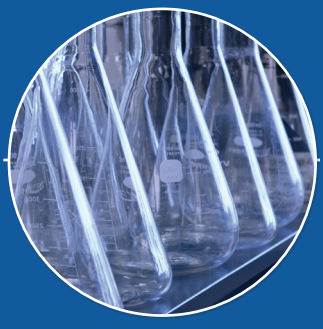
NSF International Standard /
American National Standard

NSF/ANSI 42 - 2012

Drinking Water Treatment Units - Aesthetic Effects


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 Drinking Water Treatment Units
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 International Standard/
American National Standard
for Drinking Water Treatment Units –

Drinking water treatment units – Aesthetic effects

Standard Developer

NSF International

NSF International

Designated as an ANSI Standard
December 5, 2012
American National Standards Institute

Prepared by
The NSF Joint Committee on Drinking Water Treatment Units

Recommended for adoption by
The NSF Council of Public Health Consultants

Adopted by
The NSF Board of Directors
March 1973

Revised June 1982
Revised June 1988
Revised September 1996
Revised September 1997
Revised November 1998
Revised September 1999
Revised July 2000
Revised November 2000
Revised January 2001
Revised January 2002
Addendum 1.0 – June 2002
Addendum 2.0 – October 2002
Editorial revision, November 2003
Addendum 1.0 – August 2004
Revised April 2005
Editorial revision, June 2005
Revised July 2007
Revised October 2007
Addendum – March 2008
Revised August 2009
Revised February 2011
Revised February 2012
Revised December 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 42 – 2012."

Printed in the United States of America.

Disclaimers[1]

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

This page is intentionally left blank.

Foreword[2]

The purpose of this Standard is to establish minimum requirements for materials, design, construction, and performance of drinking water treatment units that are designed to reduce specific aesthetic-related contaminants in public or private water supplies. This Standard specifies the minimum product literature and labeling information that a manufacturer must supply to authorized representatives and system owners. Lastly, the Standard provides minimum service-related obligations that the manufacturer must extend to system owners.

This edition of the Standard contains the following revisions:

Issue 76

A clarification has been made under section 8 that each certified system may only make a single capacity claim based on the lowest reduction capacity in any standard to which the model is certified.

This Standard was developed by the NSF Joint Committee on Drinking Water Treatment Units 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 Drinking Water Treatment Units 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.

NSF/ANSI Standard
for Drinking Water Treatment Units –

Drinking water treatment units – Aesthetic effects

1 General

1.1 Purpose

It is the purpose of this Standard to establish minimum requirements for materials, design and construction, and performance of drinking water treatment systems that are designed to reduce specific aesthetic-related (non-health effects) contaminants in public or private water supplies. This Standard also specifies the minimum product literature and labeling information that a manufacturer shall supply to authorized representatives and system owners as well as the minimum service-related obligations that the manufacturer shall extend to system owners.

1.2 Scope

The point-of-use and point-of-entry systems addressed by this Standard are designed to be used for the reduction of specific substances that may be present in drinking water (public or private) considered to be microbiologically safe and of known quality. Systems covered under this Standard are intended to reduce substances affecting the aesthetic quality of the water or to add chemicals for scale control, or both. Substances may be soluble or particulate in nature at concentrations influencing public acceptance of the drinking water. It is recognized that a system may be effective in controlling one or more of these substances but is not required to control all. Systems with components or functions covered under other NSF or NSF/ANSI standards or criteria shall conform to the applicable requirements therein.

1.3 Alternate materials, designs, and construction

While specific materials, designs, and construction may be stipulated in this Standard, systems that incorporate alternate materials, designs, and construction may be acceptable when it is verified that such systems meet the applicable requirements stated herein.

1.4 Chemical and mechanical reduction performance claims

1.4.1 All NSF/ANSI 42 performance claims shall be verified and substantiated by test data generated under the requirements of NSF/ANSI 42.

1.4.2 When performance claims are made for substances not specifically addressed in the scope of this Standard or for substances not specifically addressed but falling under the scope of NSF/ANSI 42, such claims shall be identified as not specifically addressed in the Standard.

1.5 Minimum requirements

This Standard establishes minimum requirements.

A system as defined in this Standard shall meet the applicable requirements of 4, 5, 6, and 8, and at least one performance claim as described in 7.

A component as defined in this Standard shall meet the requirements of 4 and 8. If the component is pressure-bearing, it shall also meet the applicable requirements of 5.

A commercial modular system as defined in this Standard shall meet the applicable requirements of 4, 5, 6, and 8, and at least one performance claim as described in 7. Manifolds of commercial modular systems shall meet the requirements of 4, 5 (if pressure bearing), and 8, and shall be evaluated as stand-alone components. Manifolds shall have a minimum internal diameter such that the water velocity in the manifold will not exceed 3 m (10 ft) per second (which can be calculated based upon the system flow rate and the manifold internal diameter). Individual modular elements evaluated as a manifold and modular element combination shall meet the applicable requirements of 4, 5, 6, and 8, and at least one performance claim as described in 7.

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.

ANSI/NFPA 70, 1999. *National Electrical Code*[3]

APHA, *Standard Methods for the Examination of Water and Wastewater*, twentieth edition[4]

NSF/ANSI 53 – 2006. *Drinking water treatment units – Health effects*

NSF/ANSI 60 – 2005. *Drinking water treatment chemicals – Health effects*

NSF/ANSI 61 – 2005. *Drinking water system components – Health effects*

ISO 12103-1:1997. *Road Vehicles – Test dust for filter evaluation – Part 1: Arizona test dust*[5]

USEPA-600/4-79-020. *Methods for the Chemical Analysis of Water and Wastes*, March 1983[6]

USEPA-600/4-84/053. *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, June 1984[6]

USEPA-600/R-94/111. *Methods for the Determination of Metals in Environmental Samples*, Supplement 1, May 1994[6]

[3] National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269 <www.nfpa.org>.

[4] American Public Health Association (APHA), 800 I Street, NW, Washington, DC 20001 <www.ahpa.org>.

[5] International Organization for Standardization (ISO), Case postale 56, CH-1211 Geneve 20, Switzerland <www.iso.org>.

[6] USEPA, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268 <www.epa.gov>.