

NSF/ANSI 44 – 2004

Residential cation exchange water softeners

**NSF International Standard/
American National Standard**

NSF/ANSI 44 – 2004



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American National Standard
for Drinking Water Treatment Units —
**Residential cation exchange
water softeners**

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Contents

Foreword	vii
1 General.....	1
1.1 Purpose	1
1.2 Scope	1
1.3 Alternate materials, design, and construction	1
2 Normative references	1
3 Definitions.....	2
4 Materials.....	6
4.1 General.....	6
4.2 Materials evaluation.....	6
Table 1 – Extraction testing parameters	8
Table 2 – Formulation dependent extraction testing parameters	10
Table 3 – Materials listed in U.S. Code of Federal Regulations,	12
Table 4 – Non-specific extraction testing parameters	12
5 Structural performance.....	13
5.1 Structural integrity.....	13
Table 5 – Structural integrity performance testing	16
6 Minimum performance requirements	18
6.1 Hazards	18
6.2 Electrical safety and operation	18
6.3 Waste connections	18
6.4 Brine tank	18
6.5 Operation.....	18
6.6 Performance indication.....	19
Table 6 – Temperature correction factors for pressure drop	31
7 Mandatory testing for elective claims	32
7.1 Scope	32
7.2 Barium and radium reduction	35
8 Instruction and information	40
8.1 Installation, operation, and maintenance instructions	40
8.2 Data plate	42
8.3 Performance data sheet	42

Annex

A	Key elements of a certification program for drinking water treatment systems and components.....	A1
A.1	Marking the product	A1
A.2	Listing certified companies.....	A1
A.3	Annual audits.....	A1
A.4	Testing.....	A1
A.5	Toxicological evaluation of materials formulations.....	A2
A.6	Corrective action	A2
A.7	Enforcement	A2
A.8	Administrative review	A2
A.9	Appeals	A2
A.10	Complaints	A2
A.11	Advertising.....	A3
A.12	Records	A3
A.13	Public notice	A3
A.14	Confidentiality.....	A3

Foreword²

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.

Water contact materials in Drinking Water Treatment Units listed under NSF/ANSI 42, 44, 53, 55, 58, and 62 are tested and evaluated under a separate protocol from NSF/ANSI 61 with criteria that were developed specifically for the intended end-use. NSF/ANSI 61 listing should not be additionally required for acceptance of these listed units for water contact application.

This edition of the Standard contains the following revisions:

- The term “permanent” when used with pressure vessels has been removed. These changes are reflected in the definitions section with the removal of permanent pressure vessel and with the deletion of “permanent” from table 5. Elimination of the definition does not change the intent or pass/fail criteria of the Standard.
- Section 4.2.3.5 has been revised to clarify how without media testing is to be conducted in complex scenarios involving media that is chemically bound to non-media materials.
- The terms disposable system and disposable components have been added to definitions since these classifications are now used in Table 5. The term intermittent flow rate has been added because plumbing codes specify pressure loss characteristics to be determined at the code specified water supply fixture unit (WFSU) flows. WFSU flows are sporadic bursts of short duration flow rate spikes that do not affect water softener capacity and efficiency performances. A modification was made to the definition of maximum service flow rate.
- Section 5.1.1 has been revised to clarify that burst testing is not required for complete systems, only nonmetallic components.
- A second brine accuracy test method for systems with a time controlled brine delivery system has been added to 6.7.3.4. Provisions for reporting intermittent flow rates at a 30 psig pressure drop has been added to 6.7.4.5.

Other revisions included in this edition of the Standard are: normative references updates, addition of a maximum cycle length for the cyclic pressure test, further clarifications to the structural integrity section, and further revisions to table 5 to clarify the differences in structural integrity testing requirements between systems and components

For informational purpose, the reformat table has been included in NSF/ANSI 44 – 2004 edition.

NSF/ANSI 44 – 2002 was reformatted to make the Standard more user friendly. Some of the section headings have been modified to more accurately reflect the contents of the sections. Structural integrity is a stand-alone section. For all substance claims being made the claim, method, and sampling will be found under the substance heading. Tables and apparatus were moved to the appropriate sections for ease of use.

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. 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 44 – 2002	NSF/ANSI 44 – 2002e	New page numbers
Tables 1- 4	Table 1 – 4	8 – 12
5 Design and Construction	6 Minimum performance requirements	18 – 32
5.1 Working pressure	5.1.2 Working pressure	13
5.2 Hazards	6.1 Hazards	18
5.3 Electrical safety operation	6.2 Electrical safety operation	18
5.4 Waste connections	6.3 Waste connections	18
5.5 Brine tank	6.4 Brine tank	18
5.6 Operation	6.5 Operation	18
5.7 Performance indication	6.6 Performance indication	19
6 Chemical, mechanical, and structural performance	7 Mandatory testing for elective claims	32 – 40
6.1 Scope	7.1 Scope	32
6.2 General test conditions and methods	6.7.1.4 General test conditions and methods	20
	6.7.2.4 General test conditions and methods	22
Figure 1	Figure 2	20
6.3 Capacity test	6.7.2 Salt efficiency and water consumption during regeneration	21 – 25
	7.1.1 Salt efficiency and water consumption during regeneration	32 – 34
Figure 4	Figure 3	24
6.4 Accuracy of the brine system	7.3 Accuracy of the brine system claims	36 – 40
6.5 Structural integrity	5 Structural performance	13 – 18
Figure 3	Figure 1	14
Table 5	Table 5	16
6.6 Pressure drop	6.7.4 Pressure drop	27 – 31
Figure 2	Figure 4	29
Table 6	Table 6	31
6.7 Barium and radium reduction	7.2 Barium and radium reduction	35
6.9 Structural integrity test methods	5.1.3 Structural integrity test methods	13 – 18
6.8 Conformance by calculation	7.3 Conformance by calculation	36 – 40
Figure 5	Figure 5	38
Figure 6	Figure 6	39
7 Instruction & information	8 Instruction & information	40 – 44
7.1 Installation, operation, and maintenance instructions	8.1 Installation, operation, and maintenance instructions	40 – 42
7.2 Data plate	8.2 Data plate	42
7.3 Performance data sheet	8.3 Performance data sheet	42 – 44

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. Comments should be sent to Chair, Joint Committee on Drinking Water Treatment Units, c/o NSF International, Standards Department, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

NSF/ANSI Standard for Drinking Water Treatment Units — Residential cation exchange water softeners

1 General

1.1 Purpose

It is the purpose of this Standard to establish minimum requirements for materials, design and construction, and performance of residential cation exchange water softeners. This Standard also specifies the minimum product literature that manufacturers shall supply to authorized representatives and owners, as well as the minimum service-related obligations that manufacturers shall extend to owners.

1.2 Scope

The manual, autoinitiated, and demand initiated regeneration residential cation exchange water softeners addressed by this Standard are designed to be used for the removal of hardness and the reduction of specific contaminants from drinking water supplies (public or private) considered to be microbiologically safe and of known quality. Systems with components or functions covered under other NSF or NSF/ANSI Standards or Criteria shall comply with those applicable requirements.

1.3 Alternate materials, design, and construction

While specific materials, design, 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.

2 Normative references

The following documents contain requirements, which 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 these documents.

ANSI/NFPA 70, 2002, National Electric Code³

NSF/ANSI 53 – 2002e: *Drinking water treatment units – Health effects*

NSF/ANSI 61 – 2003e: *Drinking water system components – Health effects*

USEPA-600/4-79-020, *Methods for the Chemical Analysis of Water and Wastes*, March 1983⁴

USEPA-600/4-88-039, *Methods for the Determination of Organic Compounds in Drinking Water*, December 1988 (Revised July 1991)⁴

³ National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269

⁴ USEPA, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268