



*NSF International Standard /  
American National Standard*

## NSF/ANSI 53 - 2013

Drinking Water Treatment Units -  
Health Effects



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**NSF/ANSI 53 – 2013**

NSF International Standard/  
American National Standard  
for Drinking Water Treatment Units —

**Drinking water treatment units –  
Health effects**

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## Foreword<sup>2</sup>

The purpose of this Standard is to establish minimum requirements for materials, design and construction, and performance of drinking water treatment systems that are designed to reduce specific health-related contaminants in public or private water supplies. NSF/ANSI 53 specifies minimum product literature requirements that manufacturers must provide to authorized representatives and owners.

This edition of the Standard contains the following revisions:

### Issue 79

This issue incorporates test protocols to evaluate personal hand held DWTUs under all applicable sections of elective performance claims methods under section 7. The test method for evaluating mouth drawn DWTUs has been added under Annex F and the method for evaluating squeeze-type bottles has been added under Annex G. A structural integrity test method for all personal hand held devices has also been added under section 5.

### Issue 82

This revision addresses tentatively identified compounds (TICs) and unknown compounds that are found during extraction testing under section 4 and clarifies the analytical method(s) to be used to evaluate these compounds under Annex E.

### Issue 90

Individual sample point limits for the chloroform surrogate test for VOC reduction was added under section 7. This issue also specifies methanol as the acceptable solvent for organic chemical and VOC reduction testing,

### Issue 91

This revision addresses premature clogging of filters during testing under section 7 and clarifies what is and is not allowed with regards to pre-filtering the challenge water of products if requested by the manufacturer. Annex H specifies acceptable procedures that may be used.

### Issue 93

The following errors were corrected: Section 6.13 was inadvertently left in NSF/ANSI 53 when the filter media test was removed from the Standard in 2011. Under section 7.3.3 Turbidity Reduction Challenge, section 7.3.3.1.2 was inadvertently left in NSF/ANSI 53 when the test dust option for cyst reduction was removed in 1999.

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

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## NSF/ANSI Standard for Drinking Water Treatment Units —

# Drinking water treatment units — Health 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 point-of-use and point-of-entry drinking water treatment systems that are designed to reduce specific health-related contaminants in public or private water supplies. Such systems include point-of-entry drinking water treatment systems used to treat all or part of the water at the inlet to a residential facility or a bottled water production facility, and includes the material and components used in these systems. 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). These substances are considered established or potential health hazards. They may be microbiological, chemical, or particulate (including filterable cysts) in nature. It is recognized that a system may be effective in controlling one or more of these contaminants, but systems are not required to control all. Activated carbon filter systems covered by this Standard are not intended to be used with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

### 1.3 Minimum requirements

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