



*NSF International Standard /
American National Standard*

NSF/ANSI 350 - 2018

Onsite Residential and Commercial
Water Reuse Treatment Systems



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for Wastewater Technology –

Onsite Residential and Commercial Water Reuse Treatment Systems

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Foreword²

This American National Standard, NSF/ANSI 350 *Onsite Residential and Commercial Water Reuse Treatment Systems*, has been developed as part of the ongoing efforts of interested parties to establish minimum material, design and construction, and performance requirements for onsite residential and commercial water treatment systems. This Standard also specifies the minimum literature that manufacturers shall supply to authorized representatives and owners as well as the minimum service-related obligations that a manufacturer shall extend to owners. This Standard is intended to address public health and environmental issues. Actual performance for any site or system may vary, depending on variations in raw water supply (such as in alkalinity and hardness), greywater constituents, and patterns of use. The end use of the effluent is the responsibility of the owner, design professionals, and regulatory officials.

Management methods and end uses appropriate for the treated effluent discharged from onsite residential and commercial treatment systems meeting Class R (single family residential) or Class C (multi family and commercial facilities) requirements of this Standard include indoor restricted urban water use, such as toilet and urinal flushing, and outdoor unrestricted urban water use, such as surface irrigation.

Systems may include:

- greywater treatment systems having a rated treatment capacity up to 5,678 L/day (1,500 gal/day): this applies to onsite residential and commercial treatment systems that treat greywater, those that treat laundry water from residential laundry facilities, and those that treat bathing water.
- residential wastewater treatment systems having a rated treatment capacity up to 5,678 L/day (1,500 gal/day): this applies to onsite residential treatment systems that treat combined wastewater generated by the occupants of residence(s). A reuse system treating 1,514 L/day (400 gal/day) to 5,678 L/day (1,500 gal/day) shall either be demonstrated to have met the Class I requirements of NSF/ANSI 40 *Residential Wastewater Treatment Systems*, or shall meet these requirements during concurrent testing to this Standard. A treatment system treating less than 1,514 L/day (400 gal/day) shall not be required to have met the Class I requirements of NSF/ANSI 40.
- commercial treatment systems: this applies to onsite commercial treatment systems that treat combined commercial facility wastewater and commercial facility laundry water of any capacity, and those treatment systems that treat greywater from commercial facilities with capacities exceeding 5,678 L/day (1,500 gal/day). These systems shall be performance tested and evaluated at the location of the reuse system installation, using the wastewater generated onsite from the facility serving the treatment system. See Section 8.3 for performance testing and evaluation. The key elements of a field evaluation of a commercial onsite treatment system are described in Annex A.

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.

This edition of the Standard contains the following revisions:

Issue 28

Added clarity to language in Section 1.4 regarding 100 gal/day systems

Issue 29

Removed a reference to a specific strain of *E. coli* from the table regarding greywater challenge water in NSF/ANSI 350.

Issue 30

Added language to Section 5 (Design and construction) and Section 8 (Performance testing and evaluation) to harmonize with recently approved language in NSF/ANSI 40 and 245 regarding blowers.

Issue 31

Revised wash day surge stress testing language in Section 8.

Issue 32

Modified language regarding 30-day average and 30-day geometric mean sample numbers.

Issue 34

Added clarity to recently incorporated language in Section 5 regarding noise measurements.

Issue 35

Changed language regarding stress dose volumes of small systems.

Issue 36

Revised language regarding dose volumes for small systems.

Issue 37

Clarified language in multiple NOTES.

Issue 38

Incorporated language regarding influent parameters.

This Standard was developed by the NSF Joint Committee on Wastewater Technology using the consensus process described in 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 on this Standard should be sent to: Chair, Joint Committee on Wastewater Technology at standards@nsf.org, or c/o NSF International, Standards Department, P O Box 130140, Ann Arbor, Michigan 48113-0140, USA.

NSF/ANSI Standard For Wastewater Technology –

Onsite Residential and Commercial Water Reuse Treatment Systems

1 General

1.1 Purpose

The purpose of this Standard is to establish minimum material, design, and construction, and performance requirements for onsite residential and commercial water treatment systems. This Standard also specifies the minimum literature that manufacturers shall supply to authorized representatives and owners as well as the minimum service-related obligations that a manufacturer shall extend to owners.

1.2 Scope

This Standard contains minimum requirements for onsite residential and commercial water treatment systems. Systems may include the following:

- greywater treatment systems having a rated treatment capacity up to 5,678 L/day (1,500 gal/day). This applies to onsite residential and commercial treatment systems that treat greywater, those that treat laundry water from residential laundry facilities, and those that treat bathing water. See Section 8.1 for performance testing and evaluation;
- residential wastewater treatment systems having a rated treatment capacity up to 5,678 L/day (1,500 gal/day). This applies to onsite residential treatment systems that treat combined wastewater generated by the occupants of residence(s). A reuse system treating 1,514 L/day (400 gal/day) to 5,678 L/day (1,500 gal/day) shall either be demonstrated to have met the Class I requirements of NSF/ANSI 40, or must meet these requirements during concurrent testing to this Standard. A treatment system treating less than 1,514 L/day (400 gal/day) is not required to have met the Class I requirements of NSF/ANSI 40. See Section 8.2 for performance testing and evaluation; or
- commercial treatment systems – this applies to onsite commercial treatment systems that treat combined commercial facility wastewater and commercial facility laundry water of any capacity, and those treatment systems that treat greywater from commercial facilities with capacities exceeding 5,678 L/day (1,500 gal/day). These systems shall be performance tested and evaluated at the location of the reuse system installation, using the wastewater generated onsite from the facility serving the treatment system. See Section 8.3 for performance testing and evaluation. The key elements of a field evaluation of a commercial treatment system are described in Annex A.

Management methods and end uses appropriate for the treated effluent discharged from onsite residential and commercial treatment systems meeting Class R (single family residential) or Class C (multi family and commercial facilities) requirements of this Standard include indoor restricted urban water use, such as toilet and urinal flushing, and outdoor unrestricted urban water use, such as surface irrigation. Effluent quality criteria consistent with these uses are described in Section 8.6, Criteria.