



On-site domestic wastewater treatment units

Part 3: Secondary treatment systems



This Australian Standard® was prepared by Committee WS-040, On-site Domestic Wastewater Treatment. It was approved on behalf of the Council of Standards Australia on 27 January 2017.

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- Association of Accredited Certification Bodies
 - Association of Rotational Moulders Australasia
 - Australian Building Codes Board
 - Australian Chamber of Commerce and Industry
 - Australian Industry Group
 - Australian Local Government Association
 - Australian Wastewater Treatment Association
 - Certification Interests (Australia)
 - Department of Housing and Public Works QLD
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 - National Precast Concrete Association Australia
 - National Recycled Water Regulators Forum
 - NSW Ministry of Health
 - SA Health
 - University of Technology, Sydney
 - Victoria University
 - Waste Management Association of Australia
 - Water Services Association of Australia
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard[®]

On-site domestic wastewater treatment units

Part 3: Secondary treatment systems

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PREFACE

This Standard was prepared by the Standards Australia Committee WS-040, On-site Domestic Wastewater Treatment, to supersede AS/NZS 1546.3:2008, *On-site domestic wastewater treatment units, Part 3: Aerated wastewater treatment systems*.

This Standard incorporates Amendment No. 1 (December 2018). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to set out requirements for the design, commissioning, performance and compliance testing of secondary treatment systems and advanced secondary treatment systems (STS) designed to treat domestic wastewater. The design hydraulic treatment capacities that may be tested in accordance with this Standard range from a minimum of 1200 L/d to a maximum of 5000 L/d. Guidance on installation, operation and maintenance is also provided.

This Standard is part of the AS/(NZS) 1546 series for on-site domestic wastewater treatment units, as follows:

AS

- 1546 On-site domestic wastewater treatment units
- 1546.3 Part 3: Secondary treatment systems (this Standard)
- 1546.4 Part 4: Domestic greywater treatment systems

AS/NZS

- 1546.1 Part 1: Septic tanks
- 1546.2 Part 2: Waterless composting toilets

In this revision, the scope of the standard has been broadened to include all types of secondary treatment systems; the design requirements have been reviewed for clarity; terms and definitions have been updated to reflect current practice; and the testing regime has been made more stringent and specified in greater detail to ensure uniformity and reproducibility in testing, and to be in alignment with international best practice.

This Standard includes Commentary on some of the Clauses. The Commentary directly follows the relevant Clause, is designated by 'C' preceding the Clause number and is printed in italics in a box. The Commentary is for information and guidance and does not form part of the Standard.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendices to which they apply. A 'normative' appendix is a mandatory part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Statements expressed in mandatory terms in Notes to Figures and Tables are deemed to be requirements of this Standard.

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STANDARDS AUSTRALIA**Australian Standard****On-site domestic wastewater treatment units****Part 3: Secondary treatment systems****SECTION 1 SCOPE AND GENERAL****1.1 SCOPE OF STANDARD**

This Standard sets out requirements for the design, commissioning, performance and conformity testing of secondary treatment systems (STS) and advanced secondary treatment systems (see Note 1) designed to treat domestic wastewater. The design hydraulic treatment capacities that may be tested in accordance with this Standard range from a minimum of 1200 L/d to a maximum of 5000 L/d. Guidance on installation, operation and maintenance is also provided.

NOTES:

- 1 Secondary treatment systems and advanced secondary treatment systems are collectively abbreviated to 'STS'.
- 2 State regulators may set a minimum or maximum daily hydraulic capacity for treatment systems.

1.2 INCLUSIONS

STSs covered by this Standard are those designed to treat maximum domestic wastewater flows of between 1200 L/d and 5000 L/d to secondary or advanced secondary water quality standard (see Tables 2.1 and 2.2).

Treatment may be by physical, chemical and/or biological processes and technologies, and typically includes primary settlement, aeration, filtration, clarification and disinfection. Treatment processes may also use extended aeration-activated sludge, biofiltration, rotating biological contact, sand filtration, reed bed, trickling filters and any other treatment technologies.

This Standard provides testing requirements for all types of STSs. All models of STS that claim to conform with this Standard are to be tested using the testing requirements in this Standard. STSs that are tested on the basis of alternative test protocols, or use theoretical calculations or modelling of larger or smaller sized systems cannot claim to conform with this Standard.

STSs that meet the product conformity requirements in this Standard shall be available, for retail sale, as a standardized manufactured unit assembled either in a factory or in the field.

1.3 EXCLUSIONS

This Standard does not cover the following:

- (a) Sanitary plumbing and drainage systems conveying domestic wastewater to or from the STS.
- (b) Treatment systems for toilet amenity blocks, single toilets (with or without hand basins) or urinals.