



Guidelines for Non-drinking Water in South Australia

Part 0: Glossary of Terms, Abbreviations and References



Government of South Australia

Guidelines for Non-drinking Water in South Australia

Part 0: Glossary of Terms, Abbreviations and References

Enquiries concerning these guidelines should be directed to:

Office of the Technical Regulator
GPO Box 320
Adelaide, South Australia, 5001

Telephone: 1300 760 311

E-mail: otr.wsinfrastructure@sa.gov.au

Web: otr.sa.gov.au

Document title: Guidelines for Non-drinking Water in South Australia – Part 0: Glossary of Terms, Abbreviations and References

Document ID: 2024D003878

Revision: 04

Date: January 2024

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To attribute this material, cite the Office of the Technical Regulator, Government of South Australia, Guidelines for Non-drinking Water in South Australia.

Report Revision History

Revision Number	Validity Date	Description (including any amendments)
01	19/08/2016	Consultation Draft for Comment
02	04/11/2016	Second Draft for Key Stakeholders
03	31/07/2017	Final Document for Release
04	January 2024	Consultation Draft for Comment.

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Preface

Background

The *Water Industry Act 2012* (Act) establishes the regulatory framework for the water industry covering economic regulation, licensing, technical standards for water and sewerage infrastructure and installations, plumbing, and water planning. The Act identifies the Essential Services Commission (Commission) as being responsible for the licensing, price regulation and customer service standards in connection with the water industry, and the Technical Regulator as being responsible for the development, monitoring and regulation of water industry technical standards. The technical standards include requirements to ensure technically sound and safe practices are followed in operation and maintaining water, sewerage and plumbing installations and associated equipment, products and materials.

Section 3 of the Act states that:

“The objects of this Act are—

- (a) to promote planning associated with the availability of water within the State to respond to demand within the community; and
- (b) to promote efficiency, competition and innovation in the water industry; and
- (c) to provide mechanisms for the transparent setting of prices within the water industry and to facilitate pricing structures that reflect the true value of services provided by participants in that industry; and
- (d) to provide for and enforce proper standards of reliability and quality in connection with the water industry, including in relation to technical standards for water and sewerage infrastructure and installations and plumbing; and
- (e) to protect the interests of consumers of water and sewerage services; and
- (f) to promote measures to ensure that water is managed wisely.
- (g) to promote the economically efficient use and operation of, and investment in, significant infrastructure so as to promote effective competition in upstream and downstream markets.”

The Technical Regulator is established by Section 8 of the Act and Section 9 of the Act states:

“The Technical Regulator has the following functions:

- (a) to develop technical standards in connection with the water industry;
- (b) to monitor and regulate technical standards with respect to—
 - i. water and sewerage installations and associated equipment, products and materials (including on the customer’s side of any connection point); and
 - ii. plumbing;
- (c) to provide advice in relation to safety or technical standards—
 - i. in the water industry to the Commission at the Commission’s request; and
 - ii. in the plumbing industry;
- (d) any other function assigned to the Technical Regulator under this or any other Act or conferred by regulation under this Act.”

The Technical Regulator has published a Plumbing Standard under Section 66 of the Act that provides the basis for calling up relevant sections of the *National Construction Code* (NCC), *Volume Three – Plumbing Code of Australia* and associated Deemed-to-Satisfy Provisions. The NCC is an initiative of the Council of Australian Governments (COAG) developed to incorporate all on-site construction requirements into a single code. The NCC is model regulation developed by the Australian Building Codes Board (ABCB) and takes effect through legislation of the States and Territories which administer and enforce building and plumbing regulation. Building regulation is covered in Volumes One and Two – the Building Code of Australia. Volume Three covers plumbing regulation – the Plumbing Code of Australia (PCA). The NCC is drafted in a performance format, for both plumbing and building.

In terms of water and sewerage infrastructure, the Technical Regulator has published the Infrastructure Standard which adopts the Water Services Association of Australia (WSAA) Codes as the principle minimal standard for water and sewerage infrastructure in South Australia.

The use of non-drinking water schemes in new developments is increasing in Australia as jurisdictions and communities strive towards a water resilient future. By using non-drinking water, the public is reducing the stress on the traditional drinking water sources including the River Murray, groundwater and local reservoirs.

Non-drinking water is any water that is not intended for human consumption or any water other than drinking which may include recycled wastewater, stormwater, bore water, ground water, lake water and river water. In South Australia, the majority of non-drinking water is typically supplied by a water industry entity through a reticulated water system to dedicated properties for a variety of purposes to reduce the demand on drinking water supplies. As such, most properties supplied with reticulated non-drinking water have a dual supply consisting of a drinking water supply for drinking and personal hygiene use and a non-drinking water supply for gardens and non-personal hygiene use. However, there are occasions where non-drinking water is supplied to parcels of land where there is no reticulated drinking water supply, e.g. for agricultural use. The Standard for Dual Reticulation Infrastructure has been published by the Office of the Technical Regulator pursuant to section 66 of the *Water Industry Act 2012*. This Standard describes the minimum requirements for the safe design, installation and construction of dual reticulation infrastructure including up to the point of connection to a property. This Standard is additional to requirements in the WSAA codes and applies to any property, whether a building or an area of land, that is supplied by both drinking and non-drinking water. The ultimate objective of the Standard is to prevent cross connections between drinking and non-drinking water supplies.

Within the NCC Volume Three Part B3 are the requirements for design, construction, installation, replacement, repair, alteration and maintenance of any part of a non-drinking water service). Consequently, all on-site non-drinking water systems must be installed so that network drinking water systems and supplies are not contaminated and all performance requirements of the NCC, Volume Three, Part B3 are met.

In South Australia, the number of non-drinking water sources has increased with many residential developments (i.e. subdivision) adopting dual water reticulation services to properties. Consequently, this increase has dramatically raised the risk to the technical and safety integrity of on-site plumbing and non-drinking water infrastructure systems.

The Office of the Technical Regulator (OTR), along with many other regulators, has a key role in ensuring the protection of South Australia's drinking water. The OTR is vigilant in regulating this area through current methods of audits of on-site plumbing, and approval of Safety, Reliability, Maintenance and Technical Management Plans (SRMTMPs). However, the OTR is reliant on the plumbing and water industry to be aware of their responsibilities in this area and it was proposed that the development of guidelines for non-drinking water installations was necessary to ensure regulatory obligations were being met and provide clarity to key stakeholders on associated requirements and responsibilities.

Acknowledgements

These Guidelines reference work previously completed by other agencies and organisations. Of particular note are:

- Department for Health and Wellbeing (South Australia).
- Environment Protection Authority (South Australia).
- Department of Infrastructure and Transport.
- Water Services Association of Australia.
- Standards Australia.
- South Australian Water Corporation.

In addition to the above agencies and organisations, the Guidelines have drawn on extensive input and feedback from the plumbing and water industries through the consultation process.

The Technical Regulator would like to take this opportunity to acknowledge those involved in previous work and the consultation process that made these Guidelines possible.

Standards Australia

The guidelines reference standards published by Standards Australia – in particular, provisions of AS/NZS 3500.1 Plumbing and Drainage Standard under permission of Standards Australian under Licence 1606-c139.

The latest versions of standards referred to in these guidelines may be purchased from:

Standards Australia
SAI Global Standards & Legislation
GPO Box 5420
Sydney NSW 2001 Australia

Email: sales@sai-global.com
Web shop: <https://infostore.saiglobal.com>
Phone: 131 242

Water Services Association of Australia

The guidelines reference codes published by Water Services Association of Australia – in particular, provisions of Water Supply Code (WSA-03). The latest versions of this code referred to in these guidelines may be purchased from the WSAA Shop at www.wsaa.asn.au.

Input from Interested Parties

The Office of the Technical Regulator welcomes comments, discussion, or suggestions for amendments to these Guidelines from any interested party.

Any contributions should be addressed to:

Office of the Technical Regulator
GPO Box 320
Adelaide, South Australia, 5001

Email: otr.wsinfrastructure@sa.gov.au

Introduction

Purpose

The aim of these Guidelines is to provide advice and assistance to the plumbing and water industry on the correct installation and ongoing operation of non-drinking water systems that are acceptable to the Technical Regulator and deemed to comply with the *Water Industry Act 2012 (Act)*, *Water Industry Regulations 2012 (Regulations)*, and technical standards and codes, i.e., NCC, Volume Three.

The intention is to improve awareness, understanding of the installation requirements for non-drinking water systems and the associated regulatory responsibilities within the plumbing and water industries.

Scope

These Guidelines present the current requirements for the technically safe and reliable installation and operation of non-drinking water systems in South Australia.

These Guidelines do not introduce any additional legislative requirements to current prerequisites.

These Guidelines apply to new installations as well as alterations, additions and repairs to existing installations.

The Guidelines does not apply to private non-drinking water supplies which are not supplied to a third party i.e., a private bore which is plumbed into a house and used for toilet flushing.

Beneficiaries

These Guidelines have been developed for water industry entities' personnel, plumbing contractors, irrigation contractors, engineers, planners, consultants, developers, local government and state government agencies. Specific sections of the Guidelines are also relevant to individual landowners and community groups.

Normative References

These Guidelines contain both legislative (normative) and informative information for use. The normative references include:

- *Water Industry Act 2012*
- *Water Industry Regulations 2012*
- *Plumbing, Gas Fitters and Electricians Act 1995*
- *Plumbing, Gas Fitters and Electricians Regulations 2010*
- National Construction Code Volume Three (Plumbing Code of Australia)
- AS/NZS 3500.1 – Water Services
- Standard for Dual Reticulation Infrastructure
- Water Services Association of Australia (WSAA) Codes.

In all cases, non-drinking water should not be used for purposes other than those specified in relevant legislation or an applicable approval (for sewage derived NDW).

Licensing Requirement

The *Plumbers, Gas Fitters and Electricians Act 1995* and *Plumbers, Gas Fitters and Electricians Regulations 2010* determine who can carry out work on non-drinking water systems. There is specific work that plumbing and irrigation contractors and workers can carry out. For the purposes of the guidelines the wording appropriately licensed persons will be used.

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For clarification on the specific licensing conditions contact Consumer Business Services on www.cbs.sa.gov.au.

These Guidelines include licensing requirements for the installation of non-drinking systems and who can undertake work associated with non-drinking water installations.

The wording within the Guidelines will be “the appropriate licensed person/s”.

Structure

These Guidelines are structured in a manner consistent with similar documents in the plumbing and water industries. The focus is placed on safe and reliable installations as well as ongoing operation for people and plant to ensure a safe and reliable service to customers.

The Guidelines are presented in Parts as follows:

- **Part 0 – Glossary of Terms, Abbreviations and References** provides assistance in interpreting terminology and abbreviations used in these Guidelines.
- **Part 1 – Infrastructure** provides an overview non-drinking water as an alternative water supply, and the requirements associated with non-drinking water infrastructure. Information included in this Part includes legislative requirements, planning and design, implementation, monitoring, management, reporting and auditing for non-drinking water infrastructure.
- **Part 2 – On-site Plumbing** provides detailed information related to on-site non-drinking water installations.

1. Terms and Definitions

The terms and definitions used in the guidelines are summarised below.

1.1 Terms

Acronym/Term	Definition
AGWR	Australian Guidelines for Water Recycling
AHMC	Australian Health Ministers' Conference
AS	Australian Standard
AS/NZS	Australian / New Zealand Standard
BYDA	Before You Dig Australia
DE	Department for Education
DEW	Department for Environment and Water
DHW	Department for Health and Wellbeing
DN	Nominal Diameter
DTI	Department for Trade and Investment
DW	Drinking Water
EPA	Environment Protection Authority
EPHC	Environmental Protection and Heritage Council
ESCOSA	Essential Services Commission of South Australia
ISO	International Organisation of Standardisation
KPI	Key Performance Indicator
LGA	Local Government Association
MAR	Managed Aquifer Recharge
NCC	National Construction Code
NDW	Non-Drinking Water
NWQMS	National Water Quality Management Strategy
NRM	Natural Resource Management
NRMMC, EPHC	Natural Resource Management Ministerial Council, Environment Protection and Heritage Council
NPR	National Performance Report
NWI	National Water Initiative
OTR	Office of the Technical Regulator
PIRSA	Primary Industries and Resources SA

PCA	Plumbing Code of Australia
PCBU	Person Conducting a Business or Undertaking
RMP	Risk Management Plan
SRMTMP	Safety, Reliability, Maintenance and Technical Management Plan
TDS	Total Dissolved Solids
WHS	Workplace Health and Safety
WSAA	Water Services Association of Australia

1.2 Definitions

The definitions of terms related to non-drinking water are adopted from various sources included in Section 2.

Term	Definition
Aquifer Storage and Recovery (ASR)	The process of injecting water into an aquifer for the purposes of storage and subsequent withdrawal (Definition as per NWQMS Guidelines for Water Recycling - MAR 2009).
Backflow	Flow in a direction contrary to the normal or intended direction of water flow, e.g. the unintended flow of water from a potentially polluted source into a drinking water supply system.
Consumer	An individual or organisation supplied with a water service as a consumer or user of the service.
Critical control point	A point, step or procedure at which control is essential to prevent or eliminate a hazard or reduce it to an acceptable level.
Cross connection	Any connection or arrangement, physical or otherwise, between any drinking water supply system either directly or indirectly connected to a water main, and any fixture, storage tank, receptacle, equipment or device through which it may be possible for any non-drinking, used, unclean, polluted or contaminated water, or any other substance, to enter any part of such drinking water system under any conditions (per AS/NZS 3500.1).
Disinfection	A process or a combination of processes designed to inactivate pathogenic microorganisms in water. There are various methods to disinfect, but chlorination is the most frequently used approach in water treatment.
Dual water supply system	A system of water supply consisting of two separate pipelines from different sources and designed to concurrently provide two distinct water supplies to the consumer. One main conveys drinking (potable) water, and the other conveys non-drinking water.
Greywater	Wastewater from the hand basin, shower, bath, spa bath, washing machine, laundry tub, kitchen sink and dishwasher.
Hazard	A biological, chemical, physical or radiological agent that has the potential to cause harm.
Interconnection	The point of connection of two or more water systems to each other.
Managed Aquifer Recharge Scheme (MAR Scheme)	1. The intentional recharge of water to aquifers for subsequent recovery or environmental benefit (Definition as per NWQMS Guidelines for Water Recycling: MAR 2009).

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	<ol style="list-style-type: none">2. A scheme that stores harvested stormwater using a process called managed aquifer recharge. After being harvested and cleaned, stormwater is stored underground in aquifers during wet periods so that it can be extracted for reuse during dry periods.
MAR water	Non-drinking water that is sourced from a MAR scheme.
Non-drinking water	<ol style="list-style-type: none">1. Water which is not intended primarily for human consumption.2. Any water other than drinking water (as determined by the Department for Health and Wellbeing) which may include recycled wastewater, stormwater, bore water, ground water, lake water and river water. Note: For the purpose of this Guideline, non-drinking water is not water that has been produced from an on-site wastewater treatment system.
Non-potable water	Alternative name for non-drinking water. See the definition for <i>non-drinking water</i> above.
Point of connection	The point where the water service pipe connects to the Water Industry Entity's drinking or non-drinking water service. It is also referred to as the Point of Supply.
Point of use	The point where the user normally takes the water for the intended use, i.e. tap.
Reclaimed/Recycled water	For the purposes of these Guidelines recycled/reclaimed water refers to non-drinking water sourced completely, or partly from treated wastewater.
Reticulation main	A water main that connects a distribution main with service pipes. Reticulation mains are generally sized DN 100 to DN 375.
Reuse water	See the definition of <i>non-drinking water</i> .
Risk	The likelihood of a hazard causing harm in exposed population in a specified timeframe including the magnitude of that harm.
Risk assessment	The overall process of using available information to predict how often hazards or specified events may occur (likelihood) and the magnitude of their consequences.
Risk management	The systematic evaluation of the water supply system, the identification of hazards and hazardous events, the assessment of risks and the development and implementation of preventative strategies to manage risk.
Source water	Water in its natural state, such as surface water and ground water, before any treatment to make it fit for purpose.
Standards	<ol style="list-style-type: none">1. Documents that specify the minimum acceptable characteristics of a product or material, a test procedure, an installation method etc., issued by an organisation that develops such documents e.g. Standards Australia. Standards may or may not be used as (or called) specifications.2. A set numerical limit e.g. a contaminant limit set by a regulatory agency.
Stormwater	Water resulting from rain draining into urban stormwater systems from roofs (rainwater), roads, footpaths and other ground surfaces.
Water Industry Entity	According to the <i>Water Industry Act 2012</i> (Act), a person that provides a retail service constituted by: <ul style="list-style-type: none">• the sale and supply of water to a person for use (and not for resale other than in prescribed circumstances (if any)) where the water is to be conveyed by a reticulated system; or

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- the sale and supply of sewerage services for the removal of sewage.

A water industry entity means:

- a) A person licensed under Part 4 of the Act,
 - b) A person recognised by the Minister under subsection (4) of the Act as a water industry entity for the purposes of the Act,
- and includes (where the context requires) a person who has been licensed under Part 4 whose licence has been suspended or cancelled or has expired or a person who is to be treated as a water industry entity.

Water sensitive urban design

The integration of urban planning with the management, protection and conservation of the urban water cycle, which ensures urban water management is sensitive to natural hydrological and ecological processes.

Wastewater

The used water arising from domestic activities in dwellings, institutions or commercial facilities consisting of wastewater, greywater or blackwater, or as approved by the relevant authority.

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