



**Engineering**

**Technical Standard**

# **TS 0204 - Colour Coding of Pipework**

**Version:** 1.0

**Date:** 08 August 2023

**Status:** Final

**Document ID:** SAWS-ENG-0204

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**Government of  
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Only the current revision of this Standard should be used which is available for download from the SA Water website.

## Significant/Major Changes Incorporated in This Edition

This technical standard incorporates the new document numbering system. Additionally, this technical standard supersedes TS159b – Colour Coding of Pipework.

The following represent key areas of change in this revised standard:

1. Scope of the standard updated to provide clarification on the use of labels and colour coding
2. Added in additional chemicals and process streams.



## Document Controls

### Revision History

Revision	Date	Author	Comments
-	22/12/2015	M Stephens	Previous Edition - TS159b
2.0	08/08/2023	G. Holmes	Update to TS 0204

Template: Technical Standard Version 4.00, 02/11/2015

### Approvers

Role	Signature and Date
Principal Mechanical & Hydraulic Engineer Gordon Holmes	28/08/2023  X  ----- Signer's Name Signed by: HO002534
Manager Engineering Quality and Innovation Matthew Davis	28/08/2023  X  ----- Signer's Name Signed by: DA003681
Senior Manager Engineering Services (Acting) Mark Papadimitriou	29/08/2023  X Mark Papadimitriou ----- Signer's Name Signed by: PA004117

### Reviewers

Role	Name	Revision	Review Date

## Contents

<b>1</b>	<b>Introduction.....</b>	<b>5</b>
1.1	<b>Purpose .....</b>	5
1.2	<b>Glossary .....</b>	5
1.3	<b>References.....</b>	5
1.3.1	<b>Australian and International .....</b>	5
1.3.2	<b>SA Water Documents .....</b>	6
1.4	<b>Definitions .....</b>	6
<b>2</b>	<b>Scope .....</b>	<b>7</b>
<b>3</b>	<b>Pipe Labels.....</b>	<b>8</b>
<b>4</b>	<b>Colour of Pipework.....</b>	<b>9</b>
4.1	<b>General.....</b>	9
4.2	<b>General Pipework &amp; Ducting.....</b>	9
4.3	Water Treatment Plants Pipework.....	10
4.4	<b>Wastewater Treatment Plants Pipework .....</b>	11
4.5	<b>Chemical Pipework .....</b>	12

## List of tables

Table 1 – Colours of General Pipework & Ducting.....	9
Table 2 – Colours of Conventional Water Treatment Plant Pipework.....	10
Table 3 – Colours of Reverse Osmosis and Membrane Plant Pipework .....	10
Table 4 – Colours of Conventional Wastewater Treatment Plant Pipework .....	11
Table 5 - Colours of Wastewater Membrane Plant Pipework.....	12
Table 6 – Colours of Chemical Pipework.....	12

# 1 Introduction

SA Water is responsible for the operation and maintenance of pipework in different systems conveying a large range of fluids.

This standard has been developed to assist in the design, maintenance, construction, and management of this pipework.

## 1.1 Purpose

The purpose of this standard is to ensure that pipework is coated or painted to a consistent standard that will ensure all substances contained in the pipework are clearly identified in order to achieve safe management of substances, chemicals and treatment processes.

## 1.2 Glossary

The following glossary items are used in this document:

Term	Description
CIP	Clean in Place
MF	Micro Filtration Process
RO	Reverse Osmosis
SBS	Sodium Bisulphite
SA Water	South Australian Water Corporation
TG	SA Water Technical Guideline
TS	SA Water Technical Standard
UF	Ultra Filtration Process
UV	Ultraviolet Process

## 1.3 References

### 1.3.1 Australian and International

The following table identifies Australian and International standards and other similar documents referenced in this document:

Number	Title
AS 1345	Identification of the Contents of Pipes, Conduits, and Ducts
AS 2700	Colour Standards for General Purposes

### 1.3.2 SA Water Documents

The following table identifies the SA Water standards and other similar documents referenced or used in the preparation of this document:

Number	Title
TS 112	Process and Instrumentation Diagrams

### 1.4 Definitions

The following definitions are applicable to this document:

Term	Description
"Shall" and "Should"	In this Standard the word "shall" indicates a requirement that is to be adopted in order to comply with the Standard. The word "should" indicates practices which are advised or recommended.
SA Water's Representative	The SA Water representative with delegated authority under a Contract or engagement, including (as applicable): <ul style="list-style-type: none"> <li>• Superintendent's Representative (e.g. AS 4300 &amp; AS 2124 etc.)</li> <li>• SA Water Project Manager</li> <li>• SA Water nominated contact person</li> </ul>
Responsible Discipline Lead	The engineering discipline expert responsible for TS 0204 defined on page 3 (via SA Water's Representative)

## 2 Scope

This Technical Standard applies to all pipework in various installations, including (but not limited to), the following:

- Water Treatment plants,
- Wastewater Treatment plants,
- Recycled Water Treatment plants,
- Pumping stations (both water and wastewater),
- Chemical dosing facilities,
- All other installations where this standard is specified in the project specification.

This Technical Standard requires all pipework to be colour coded and labelled for contents identification in accordance with the relevant clauses.

Where pipework identification labels at existing sites is inconsistent with the labelling convention in this Standard, the Contractor shall obtain direction and approval of the Responsible Discipline Lead for any alternate convention to be used.

### 3 Pipe Labels

All pipework shall be provided with identification labels; their location and size shall be in accordance with AS 1345 "Identification of the Contents of Pipes, Conduits and Ducts". The labels shall comprise of a word or words on a colour background with a contrasting border and chevron to show the direction of the flow.

Labels shall be placed adjacent to all junctions, valves, service appliances, bulkhead and wall penetrations. Care shall be taken to ensure that all pipe labels are visible to an observer from one position where several pipes are to be identified at the one location.



## 4 Colour of Pipework

### 4.1 General

Where pipework colour in existing sites is inconsistent with the colour coding tables in this Standard, the Contractor shall obtain direction and approval of the Responsible Discipline Lead for any colour to be used.

Band colours around pipework shall be provided where applicable in accordance with the colour coding tables in this Standard.

Where pipework cannot be painted or pigmented as part of the manufacturing process, it shall be labelled only.

Stainless steel pipework shall not be painted.

### 4.2 General Pipework & Ducting

These are generic fluid stream pipe colour codes that apply across all treatment facilities and network stations.

**Table 1 – Colours of General Pipework & Ducting**

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Ventilation & Air Conditioning Ducts	-	White	-	-
Compressed Air	B25	Aqua	-	-
Compressed Instrument/Process Air	B25	Aqua	-	-
Vacuums	B25	Aqua	-	Black
Steam	-	Silver Grey	-	-
Refrigerant	Y44	Sand	G14	Moss Green
Gases	Y44	Sand	-	-
Process Water*	G21	Jade	T24	Blue Jade
Drinking Water**	G21	Jade	-	-
Distilled Water	G21	Jade	-	White
Chilled Water	G21	Jade	B21	Ultramarine
Hot Water	G21	Jade	R13	Signal Red
Fire Control Water	R13	Signal Red	-	-
Drains & Waste Fluids	-	Black	-	-

**Notes:**

\* Water sourced from the drinking water stream but used in the treatment process

\*\* Also termed as "Treated Water" on the outlet of a Water Treatment Plant after final treatment and directly prior to entering the water reticulation network.

## 4.3 Water Treatment Plants Pipework

Table 2 – Colours of Conventional Water Treatment Plant Pipework

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Filter Waste-wash Water	G21	Jade	Black + X41	Black + Buff
Sedimentation Tank Sludge	X41	Buff	-	-
Settled Water	G21	Jade	X41	Buff
Supernatant	X41	Buff	-	-
Thickened Sludge (Water)	X41	Buff	-	-
Untreated (Raw or Seawater) Water	G21	Jade	-	Black

Table 3 – Colours of Reverse Osmosis and Membrane Plant Pipework

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Filtered Water (RO Feed)	G21	Jade	X41	Buff
RO Permeate	G21	Jade	G14	Moss Green
MF/UF Filtrate	G21	Jade	T24	Blue Jade
UV Filtrate (WTP)	G21	Jade	T24	Blue Jade
RO Concentrate (Brine)	-	Black	-	-
CIP Feed/Reject	Refer relevant chemical in Table 6			
RO/UF Waste (From CIP, SBS, Antiscalant etc..)	-	Black	-	-
Antiscalant / SBS Solution	Refer relevant chemical in Table 6			
Scour Air (MF/UF)	B25	Aqua	-	-

## 4.4 Wastewater Treatment Plants Pipework

Table 4 – Colours of Conventional Wastewater Treatment Plant Pipework

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Activated Sludge (Mixed Liquor)	X41	Buff	X55	Nut Brown
Aeration Air	B25	Aqua	-	-
Circulating Sludge	X41	Buff	-	-
DAFT Effluent	N42	Storm Grey	G14	Moss Green
Digested Sludge	X41	Buff	T24	Blue Jade
Grit	X41	Buff	-	Black
Humus Sludge	X41	Buff	G14	Moss Green
Raw (Primary) Sludge	X41	Buff	-	-
Raw Sewage	N42	Storm Grey	-	-
Return Activated Sludge	X41	Buff	X55	Nut Brown
Settled Primary Sludge	X41	Buff	-	-
Treated Effluent	N42	Storm Grey	T24	Blue Jade
Skimmings & Scum	X41	Buff	X55	Nut Brown
Supernatant	N42	Storm Grey	G14	Moss Green
Thickened Sludge (Wastewater)	X41	Buff	X55	Nut Brown
Waste Activated Sludge	X41	Buff	X55	Nut Brown
Recycled Water*	N42	Storm Grey	T24	Blue Jade

**Note:**

\* Within SA Water Treatment site, recycled water shall not be colour coded Lilac. Where recycled water pipework transitions externally of property boundary or connects back into the recycled water reticulation network, pipes shall be Lilac in colour.

**Table 5 - Colours of Wastewater Membrane Plant Pipework**

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Ref. No	AS 2700 Ref. No	AS 2700 Ref. No
UF Permeate (WWTP)	N42	Storm Grey	G14	Moss Green
UV Filtrate (WWTP)	N42	Storm Grey	G14	Moss Green
UF/UV Waste (From CIP, Backwash etc..)	-	Black	-	-

## 4.5 Chemical Pipework

**Table 6 – Colours of Chemical Pipework**

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Activated Carbon (PAC) (up to 10% slurry)	G33	Lettuce	-	Pale Blue
Activated Silicate	G33	Lettuce	X31 + Y14	Raffia + Golden Yellow
Aluminium Chloro-hydrate (Solution)	P23	Lilac	-	-
Aluminium Sulphate (Alum) (50% solution)	G33	Lettuce	Y25	Deep Cream
Ammonia, Anhydrous (100% gas/liquid)	Y14	Golden Yellow	-	-
Ammonia, Aqua (25% solution) Ammonia Solution	G21	Jade	X31 + P23	Raffia + Lilac
Ammonium Sulphate (40% Solution)	P23	Lilac	-	-
Calcium Hydroxide (Hydrated lime) (up to 20% slurry)	G33	Lettuce	-	White
Calcium Oxide (Quicklime) (up to 20% slurry)	G33	Lettuce	-	White
Chlorine (100% liquid & gas)	Y14	Golden Yellow	-	-
Chlorine Solution	G21	Jade	Y14	Golden Yellow
Citric Acid (50% solution)	P23	Lilac	R13	Signal Red
Diesel / Fuels	X53	Golden Tan	-	-
Lubricating Fluids	X53	Golden Tan	R13	Signal Red
Ethanol (up to 10% Solution)	X53	Golden Tan	-	Black
Ferrous Chloride (42% solution)	P23	Lilac	-	-
Ferric Chloride (40% Solution)	P23	Lilac	-	-
Fluorosilicic Acid (20% solution)	P23	Lilac	R13	Signal Red
Formic Acid (up to 85% solution)	P23	Lilac	R13	Signal Red
Hydrochloric Acid (up to 10% solution)	P23	Lilac	R13	Signal Red
Hydrogen Sulphide (up to 400 ppm in Sewer Gas)	Y44	Sand	P23	Lilac

FLUID	BASE COLOUR		BAND COLOUR	
	AS 2700 Ref. No	AS 2700 Name	AS 2700 Ref. No	AS 2700 Name
Magnesium Hydroxide (60% slurry)	P23	Lilac	-	Black
Methane or Natural Gas (Digester biogas: 65 to 70% Methane)	Y44	Sand	-	-
Mono Ammonium Phosphate (10% solution)	P23	Lilac	-	-
Oxygen, compressed (100% liquid & gas)	Y14	Golden Yellow	-	-
Polyelectrolytes (various) (> 60% solutions)	G33	Lettuce	G14	Moss Green
Potassium Permanganate (5% solution)	G33	Lettuce	B21	Ultramarine
Sodium Bisulphite (up to 50% Solution)	P23	Lilac	-	-
Sodium Carbonate (Soda Ash) (Assume 15% solution)	P23	Lilac	-	Black
Sodium Chloride (Saturated Brine) (up to 25% solution)	G21	Jade	-	Black
Sodium Fluoride (4% Solution)	G33	Lettuce	-	Black
Sodium Hydroxide (Caustic Soda) (up to 50% solution)	P23	Lilac	-	Black
Sodium Hypochlorite (13% solution)	P23	Lilac	-	-
Sodium Silicate	G33	Lettuce	X31	Raffia
Sucrose (Liquid Sugar or Molasses) (up to 67% solution)	-	Black	-	-
Sulfamic Acid (30% solution)	P23	Lilac	R13	Signal Red
Sulphuric Acid (98% liquid)	P23	Lilac	R13	Signal Red