

List of Acceptable Product Specifications

FOREWORD

Designers and Constructors must only use conforming standard products and/or listed non-standard products for components that are critical for the long-term performance of Sydney Water infrastructure.

This document contains a list of product specifications, which have been adopted by Sydney Water, for standard products. Refer to the *List of Approved Non-Standard Products* for information on non-standard products.

Sydney Water reserves the right to alter, amend or withdraw this document, at any time, without prior notice.

We welcome any question, feedback or suggestions. Send them to productapproval@sydneywater.com.au.

Contents

FOREWORD	2
PIPE AND FITTINGS.....	5
POLYVINYLCHLORIDE (PVC) PIPE AND FITTINGS.....	5
POLYETHYLENE (PE) PIPE AND FITTINGS.....	5
POLYPROPYLENE (PP) PIPE AND FITTINGS.....	5
DUCTILE IRON (DI) PIPE AND FITTINGS.....	6
STEEL PIPES AND FITTINGS.....	6
REINFORCED CONCRETE (RC) PIPE.....	7
VITRIFIED CLAY (VC) PIPE AND FITTINGS	7
GLASS REINFORCED PLASTIC (GRP) PIPE AND FITTINGS.....	7
PROPERTY SERVICE PIPE	7
CLAMPS.....	7
COUPLINGS	8
FLANGE GASKETS AND O-RINGS	8
TAPPING BANDS.....	8
CASING SPACERS.....	8
VALVES	9
AIR VALVES.....	9
AUTOMATIC CONTROL VALVES	9
BALL VALVES	9
BUTTERFLY VALVES.....	9
GATE VALVES.....	10
ISOLATION VALVES FOR AIR VALVES AND HYDRANTS.....	10

HYDRANTS.....	10
NON-RETURN VALVES.....	10
PLUG VALVES	11
REDUCED PRESSURE ZONE (RPZ) VALVES.....	11
VACUUM INTERFACE VALVES	11
EXTENSION SPINDLES.....	11
EMBEDMENT AND ROADBASE MATERIALS	12
EMBEDMENT.....	12
TRENCH FILL	12
GEOTEXTILE FILTER FABRIC.....	12
ROADBASE.....	13
MARKING TAPE	13
ACCESS STRUCTURES	14
ACCESS COVERS	14
SURFACE FITTINGS	14
MAINTENANCE HOLES (MH)	14
MAINTENANCE CHAMBERS (MC).....	14
MAINTENANCE SHAFTS (MS)	14
LADDERS AND STEPS.....	14
VENT SHAFT	15
Log of changes	16

PIPE AND FITTINGS

Products	Specifications	Additional requirements
POLYVINYLCHLORIDE (PVC) PIPE AND FITTINGS		
PVC-M pipes for pressure applications - water supply and sewerage	AS/NZS 4765	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Pipe dimension shall be Series 2
PVC-O pipes for pressure applications - water supply and sewerage	AS/NZS 4441	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Pipe dimension shall be Series 2 3. Pipe material class shall be ≥450
PVC-U pipes for pressure applications - water supply and sewerage	AS/NZS 1477	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Pipe dimension shall be Series 2
PVC-U pipes and fittings for non-pressure applications – sewerage and drainage	AS/NZS 1260	<ol style="list-style-type: none"> 1. Minimum pipe stiffness class is SN10 for DN100 and SN8 for ≥DN150 2. Fittings shall have a minimum stiffness class of SN8
Variable bend, post-formed PVC-U fittings for non-pressure applications - sewerage	WSA 115	
POLYETHYLENE (PE) PIPE AND FITTINGS		
PE pipes for pressure applications - water supply and sewerage	AS/NZS 4130	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Pipe dimension shall be Series 1 3. Pipe compound shall be PE 100
PE moulded fittings for pressure applications – water supply and sewerage	AS/NZS 4129	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16
PE fabricated fittings for pressure applications – water supply and sewerage	WSA PS – 216	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16
PE plain wall pipes and fittings for non-pressure applications - sewerage	AS/NZS 5065	<ol style="list-style-type: none"> 1. Minimum stiffness class is SN8
POLYPROPYLENE (PP) PIPE AND FITTINGS		
PP ribbed construction pipes and fittings for non-pressure applications – sewerage	AS/NZS 5065	<ol style="list-style-type: none"> 1. Minimum stiffness class is SN10

Products	Specifications	Additional requirements
DUCTILE IRON (DI) PIPE AND FITTINGS		
DI pipes and fittings – water supply and sewerage	AS/NZS 2280	<ol style="list-style-type: none"> 1. Minimum pressure class for pipe is PN35 2. Seal coating for cement mortar lining is required for water pipes ≤ DN300 3. Calcium aluminate or polymeric lining is required for gravity sewerage applications 4. For fittings used in pressure applications, the minimum pressure classes are PN35 and PN16 for cement lined and thermal bonded polymeric lined fittings respectively 5. All fittings shall be coated with thermal bonded polymeric coating 6. Pipes for connecting to flanged fittings shall be flange class 7. Refer to WSA PS-245 for DI fittings with restrained flexible joints for use with Polyethylene (PE) pipes
Polyethylene sleeving for DI pipes and fittings – water supply and sewerage	AS 3680	
STEEL PIPES AND FITTINGS		
Steel pipes and fittings – water supply and sewerage	AS/NZS 1579	<ol style="list-style-type: none"> 1. For buried applications, pipes and fittings shall be externally coated with fusion bonded polyethylene (medium density) complying with AS 4321 2. Calcium aluminate or polymeric lining is required for gravity sewerage applications 3. The internal ends of cement lined pipes <DN 750, having “ball and spigot” or “slip-in” joints and not cement lined shall have a factory-applied thermally sprayed to TSZ150 coating system of AS/NZS 2312

Products	Specifications	Additional requirements
REINFORCED CONCRETE (RC) PIPE		
RC plastics-lined pipes for non-pressure applications - sewerage	AS 4058	1. Refer to WSA 113 for plastic lining requirements
VITRIFIED CLAY (VC) PIPE AND FITTINGS		
VC pipes and fittings for non-pressure applications - sewerage	EN 295	
GLASS REINFORCED PLASTIC (GRP) PIPE AND FITTINGS		
GRP pipes and fittings for pressure applications - water supply	AS 3571.2	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Minimum stiffness class is SN10000 3. The reinforcement glass shall be type C
GRP pipes and fittings for pressure and non-pressure applications - sewerage	AS 3571.1	<ol style="list-style-type: none"> 1. For pressure applications, the minimum pressure class is PN16 2. Minimum stiffness class is SN10000 3. The reinforcement glass shall be type C
PROPERTY SERVICE PIPE		
Copper (CU) property service pipes – water supply	AS 1432	<ol style="list-style-type: none"> 1. Tube dimension shall be type A or B 2. Tube hardness shall be ‘bendable’ temper.
Polyethylene (PE) property service pipes – water supply	AS/NZS 4130	<ol style="list-style-type: none"> 1. Minimum pressure class is PN16 2. Pipe dimension shall be Series 1 3. Pipe polyethylene compound shall be PE 100
CLAMPS		
Clamps, off-take for under pressure cut-in connections – water supply	WSA 122	

Products	Specifications	Additional requirements
COUPLINGS		
Couplings, metal-banded flexible, for non-pressure applications - sewerage	AS/NZS 4327 or EN 295-4	1. Refer to WSA PS – 235 for details
Mechanical couplings, non-end thrust restraint for pressure applications – water supply and sewerage	AS/NZS 4998	1. Refer to WSA PS – 270 for details
Mechanical couplings and flange adapters, end thrust restraint for pressure applications – water supply and sewerage	EN 14525	1. Refer to WSA PS – 271 for details
FLANGE GASKETS AND O-RINGS		
Flange gaskets and O-rings	WSA 109	
TAPPING BANDS		
Tapping bands – for use with polyethylene (PE) mains for pressure applications – water supply	AS/NZS 4129	
Tapping bands – mechanical for pressure applications - water supply	AS/NZS 4793	
CASING SPACERS		
Casing spacers – for slipping and centralising carrier pipes inside encasing pipes, pressure and non-pressure applications.	WSA PS – 324	

VALVES

Products	Specifications	Additional requirements
AIR VALVES		
Air valves – sewerage	AS 4883	1. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
Air valves – water supply	AS 4956	1. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
<i>Refer to the List of Approved Non-Standard Products for non-standard air valves that have been approved by Sydney Water</i>		
AUTOMATIC CONTROL VALVES		
Automatic control valves – water supply	AS/NZS 5081	1. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
<i>Refer to the List of Approved Non-Standard Products for non-standard automatic control valves that have been approved by Sydney Water</i>		
BALL VALVES		
Ball valves for property service connection – water supply	AS 4796	1. Plastic female thread shall be reinforced with a metallic band
Ball valves, metal-bodied, in-line – water supply	AS 5830.1	
Ball valves, plastics-bodied, in-line – water supply	AS 5830.2	
Ball valves, manually operated – gas application	AS 4617 or EN 331	
BUTTERFLY VALVES		
Butterfly valves – water supply	AS 4795	1. Direction of closing shall be anti-clockwise 2. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details

Products	Specifications	Additional requirements
GATE VALVES		
Gate valves, metal seated – water supply and sewerage	AS 2638.1	<ol style="list-style-type: none"> 1. Direction of closing shall be anti-clockwise 2. Valves shall be supplied with spindle cap 3. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
Gate valves, resilient seated– water supply and sewerage	AS 2638.2	<ol style="list-style-type: none"> 1. Direction of closing shall be anti-clockwise 2. Valves shall be supplied with spindle cap 3. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
Gate valves, resilient seated with integral Polyethylene ends – water supply and sewerage	EN 1074-2	<ol style="list-style-type: none"> 1. Refer to WSA PS-278 for details
Knife gate valves – water supply and sewerage	AS 6401	<ol style="list-style-type: none"> 1. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details
<i>Refer to the List of Approved Non-Standard Products for non-standard gate valves that have been approved by Sydney Water</i>		
ISOLATION VALVES FOR AIR VALVES AND HYDRANTS		
<i>Refer to the List of Approved Non-Standard Products for non-standard isolation valves that have been approved by Sydney Water</i>		
HYDRANTS		
Hydrants (spring) – water supply	AS 3952	
NON-RETURN VALVES		
Non-return (reflux) valves for pressure applications – water supply and sewerage	AS 4794	<ol style="list-style-type: none"> 1. Lifting lugs shall be provided for valves with mass $\geq 25\text{kg}$ 2. Refer to Sydney Water’s Technical Specification – Part 2: Mechanical Works, Section M9 for further details

Products	Specifications	Additional requirements
PLUG VALVES		
Plug valves, eccentric	AWWA C517	1. Refer to Sydney Water's Technical Specification – Part 2: Mechanical Works, Section M9 for further details
Plug valves, lubricated	BS 5158, BS 5553 or EN 331	1. Refer to Sydney Water's Technical Specification – Part 2: Mechanical Works, Section M9 for further details
REDUCED PRESSURE ZONE (RPZ) VALVES		
RPZ valves – water supply	AS 2845	1. Strainer to be fitted
VACUUM INTERFACE VALVES		
Vacuum interface valves for pressure applications - Sewerage	AS 4310	1. Cycle counters to be fitted
EXTENSION SPINDLES		
Extension spindles for gate valves	WSA PS – 262	
Extension spindles for valves (other than gate valves)	WSA PS – 269	

EMBEDMENT AND ROADBASE MATERIALS

Products	Specifications	Additional requirements
EMBEDMENT		
Compaction sand	WSA PS – 350	1. Class A only
Processed aggregates	WSA PS – 351	
7mm processed aggregate	WSA PS – 359	
Controlled low strength materials (CLSM)	WSA PS – 352	1. Embedment material shall be 10 mm type
Concrete for pipe encasement, normal class	AS 1379	1. Pre-mixed only 2. Normal class N25 for reinforced concrete 3. Normal class N20 for non-reinforced (plain) concrete 4. Slump of 80-120 mm
Steel reinforcement for pipe encasement	AS/NZS 4671	1. Deformed ribbed bars Grade 500N
<i>Refer to the List of Approved Non-Standard Products for non-standard embedment materials that have been approved by Sydney Water</i>		
TRENCH FILL		
Non-trafficable		1. Excavated or imported material with particle size less than 75mm and free from extraneous material
Trafficable		1. As specified by road owner i.e. RMS or council 2. If not specified, obtain approval for either: a. Compaction sand WSA PS – 350 b. Fine crushed rock road base DGB20 c. Coarse crushed rock road base DGB40
GEOTEXTILE FILTER FABRIC		
Geotextile filter fabric	WSA PS – 355	

Products	Specifications	Additional requirements
ROADBASE		
Rock, coarse crushed for road base	RMS QA Material Specification 3051	1. DGB40
Rock, fine crushed for road base	RMS QA Material Specification 3051	1. DGB20
MARKING TAPE		
Marking tape, detectable	WSA PS – 318	
Marking tape, non-detectable	WSA PS – 319	

ACCESS STRUCTURES

Products	Specifications	Additional requirements
ACCESS COVERS		
Access covers and frames for water supply and sewerage, trafficable areas	WSA 132	<ol style="list-style-type: none"> 1. Minimum class is Class D 2. Stainless steel holding bolts shall be supplied.
Access covers and frames for water supply and sewerage, non-trafficable areas	WSA 132	<ol style="list-style-type: none"> 1. Minimum class is Class B 2. Stainless steel holding bolts shall be supplied.
<i>Refer to the List of Approved Non-Standard Products for non-standard access covers that have been approved by Sydney Water</i>		
SURFACE FITTINGS		
<i>Refer to the List of Approved Non-Standard Products for non-standard surface fittings that have been approved by Sydney Water</i>		
MAINTENANCE HOLES (MH)		
Pre-cast concrete MH for gravity sewerage	PS – 323	
Pre-cast concrete conical bases for concrete MH for gravity sewerage	PS – 333	
MAINTENANCE CHAMBERS (MC)		
Plastics MC for gravity sewerage	WSA 137	
Pre-cast concrete MC for gravity sewerage	WSA PS – 331	
MAINTENANCE SHAFTS (MS)		
Plastics MS for gravity sewerage	WSA 137	
LADDERS AND STEPS		
Fixed ladders for man entry structures – water supply and sewerage	WSA PS – 315	

Products	Specifications	Additional requirements
Steps for man entry structures – water supply and sewerage	WSA PS – 314	
VENT SHAFT		
Vent shaft – educt for gravity sewerage	WSA PS – 325	
Vent shaft – induct for gravity sewerage	WSA PS – 326	

Log of changes

Issue date	Summary of changes
21/09/12	First issue
24/10/12	Adding log of change (this table) Accepting type B tube dimension for copper property service pipes Adding a requirement for ball valves for property service connection to have reinforced plastic female thread
16/10/13	Minor editing Adding non-detectable marking tape specification Adopting WSA 137 for MC and MS
03/03/14	Adding references to the List of Non-Standard Products in the relevant sections Adding concrete and reinforcement for pipe encasement in the embedment section Adopting WSA 132 for Class B access covers Adding requirement for stainless steel holding bolts for access covers Minor editorial changes
13/03/15	Adding foreword section
11/02/16	Adding product specifications for mechanical couplings and casing spacers