



**Engineering**

**Technical Standard**

# **TS 0503 - Authorised Products Water Systems**

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**Government of  
South Australia**

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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 Revision updates the September 2020 edition of TS 0503 Authorised Products - Water Systems. The clause numbers described below identify changes from revision 6.2.

### **Clause 1.3.1**

AS 1646 Elastomeric seals for waterworks purposes.

### **Clause 2**

Scope updated to clarify products use and AMDT 1 of AS/NZS 4020 (2018).

### **Clause 3.2**

Notes updated regarding PVC PN rating.

### **Clause 3.3**

Manufacturer added.

### **Clause 4.1.1.1**

Manufacturers details updated.

### **Clause 4.1.1.2**

Manufacturers details updated.

### **Clause 4.1.1.3.1**

Manufacturers details updated.

### **Clause 4.1.1.3.2**

Manufacturers details updated.

### **Clause 4.1.1.4.1**

Manufacturers details updated.

### **Clause 4.1.1.4.2**

Manufacturers details updated.

### **Clause 4.1.1.5**

Manufacturers details updated.

### **Clause 4.1.1.6**

Manufacturers details updated.

### **Clause 4.1.2.1**

Manufacturers details updated.

### **Clause 4.1.2.2**

Manufacturers details updated.

### **Clause 4.1.2.3.1**

Manufacturers details updated.

### **Clause 4.1.2.3.2**

Manufacturers details updated.

**Clause 4.1.2.4**

Manufacturers details updated.

**Clause 4.2.2**

Manufacturers list to include Adroit and Advanced Piping Systems – Fox fittings.

**Clause 4.2.3**

Manufacturers list to include Advanced Piping Systems.

**Clause 4.2.4**

Manufacturers list to include Vinidex and Adroit.

**Clause 5.1**

Manufacturers details updated.

**Clause 6.1**

AVK Product details updated.

**Clause 7.1.1**

Details updated for Weflo Valves, AVK, Karon and Viadux.

**Clause 7.1.3**

Clause updated for manufacturers and products.

**Clause 7.4**

Clause updated for manufacturers and products.

**Clause 7.**

Clause updated for manufacturers and products.

**Clause 7.7.1**

Manufacturers list updated.

**Clause 7.7.2**

Manufacturers list updated.

**Clause 7.7.3**

Manufacturers list updated.

**Clause 7.9**

Manufacturers list to include DAEMCO.

**Clause 8.1.1**

Manufacturers list updated.

**Clause 8.1.2**



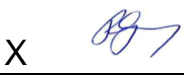
Manufacturers list updated.

## Document Controls

### Revision History

Revision	Date	Author	Comments
1.0	08 April 2016	R Pearce	First TS Release – superseding authorised products list
2.0	20 March 2017	R Pearce	Numerous Clauses added/ altered/ updated – refer P 2
3.0	26 October 2017	R Pearce	Refer Pg. 2 for identified changes in this revision
4.0	15 October 2019	K Claridge	Refer Pg. 2 and 3 for identified changes in this revision
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# 1 Introduction

SA Water is responsible for operation and maintenance of an extensive amount of engineering infrastructure.

This standard has been developed to assist in the design, maintenance, construction, and management of this infrastructure. This Document lists conforming products approved for installation within SA Water's infrastructure networks.

The products listed have been approved after their evaluation based upon the SA Water product appraisal procedure. In line with the Australian Drinking Water Guidelines (ADWG), *"The products used in water systems should be subjected to an audited system of quality control. The effectiveness of preventive measures is highly dependent upon the design and implementation of associated process control programs. To consistently achieve a high-quality water supply, it is essential to have effective control over the processes and activities that govern drinking water quality (ADWG)."*

*In addition, the ADWG outlines that: "Contaminants may also be introduced when water comes into contact with materials such as filter media, protective coatings, linings and liners, joining and sealing products, pipes and fittings, valves, meters and other components".* Approved products shall only be obtained from the listed manufacturer or their authorised agent.

## 1.1 Purpose

The purpose of this standard is to detail minimum requirements to ensure that assets covered by the scope of this standard are constructed and maintained to consistent standards and attain the required asset life.

This document provides confirmation of products SA Water has authorised, based on their technical merits. Design Consultants and Construction Contractors should use the information presented within this document for confirmation of products SA Water has authorised for use.

Product Manufacturers, suppliers and other stakeholders may also use the information as reference material.

SA Water personnel should source items from the Store. If not stocked they should procure by means of:

- utilising the relevant SA Water Period Contract or Standing Offer Arrangement,
- where an item is not covered under a Contract or Standing Offer Arrangement, contacting a relevant Stores or Procurement Officer.

### 1.1.1 Compliance Requirements

All products intended for contact with drinking water, shall be tested for compliance with the standards listed in this document.

Particular attention is drawn to compliance with SA Water Technical Standard, TS 0800 (which incorporates AS/NZS 4020 (2018)). Compliance with this standard must also be verified at any change of material composition, change of design, or every 5 years - whichever occurs first.

Clause 3.1.1 of SA Water Technical Standard TS 0800 requires that organic compounds must be within the values listed in the ADWG. Specific attention is drawn to the SA Water requirements for NDMA leaching, testing for which shall be undertaken in Chloraminated water with a 9-day result to be < 30 ng/L. This requirement applies for rubber seals intended for use in PVC pressure pipes (from 1<sup>st</sup> July 2021) and DI/CL pipes and fittings (from 1<sup>st</sup> Oct 2022).

## 1.1.2 Requirements for dual-reticulation infrastructure

In compliance with the Office of the Technical Regulator requirements, from 1<sup>st</sup> July 2021 it is mandatory for all non-drinking water; valves, pipes and fittings for; water meter assemblies, pipes, valve caps, spindles and fire hydrant claws, are to be manufactured in a Purple/Lilac colour. For materials where this is not possible, they shall be powder-coated or epoxy painted, no darker than Jacaranda P24 or Purple P12 and no lighter than Lilac P23.

## 1.2 Glossary

The following glossary items are used in this document:

Term	Description
BSW	British Standard Whitworth
CICL	Cast Iron Cement Lined Pipe
DICL	Ductile Iron Cement Lined pipe
DW	Drinking Water
EPDM	Ethylene Propylene Diene Monomer (rubber)
FBE	Fusion Bonded Epoxy
NDW	Non-Drinking Water
NDMA	Nitroso dimethylamine
PE	Polyethylene
PIPA	Plastic Industry Pipe Association
PVC - M	Polyvinyl Chloride Modified
PVC - O	Polyvinyl Chloride Oriented
RRJ	Rubber Ring Joint
SA Water	South Australian Water Corporation
SBR	Styrene-butadiene rubber
SCL	Steel Cement Lined Pipe
TG	SA Water Technical Guideline
TS	SA Water Technical Standard

## 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 1281	Cement mortar lining of steel pipes and fittings
AS 1432	Copper tubes for plumbing, gas fitting and drainage applications
AS 1579	Arc-welded steel pipes and fittings for water and wastewater
AS 1646	Elastomeric seals for waterworks purposes
AS 2033	Installation of polyethylene pipe systems
AS 2345	Dezincification resistance of copper alloys
AS 2419	Fire hydrant installations - Fire hydrant valves
AS 3680	Polyethylene sleeving for ductile iron pipelines
AS 3681	Guidelines for the application of polyethylene sleeving to ductile iron pipelines and fittings
AS 3688	Water supply - Metallic fittings and end connectors
AS 3952	Water supply - Spring hydrant valve for waterworks purposes
AS 3996	Access covers and grates
AS 4181	Stainless steel clamps for water works purposes
AS 4794	Non-return valves - swing check and tilting disc
AS 4795	Butterfly valves for water works purposes
AS 4822	External field joint coatings for steel pipelines
AS 4956	Air valves for water supply
AS 5081	Hydraulically operated automatic control valves for waterworks purposes
AS/NZS 1477	PVC pipes and fittings for pressure applications
AS/NZS 2032	Installation of PVC pipe systems
AS/NZS 2280	Ductile iron pipes and fittings
AS/NZS 2638.1	Gate valves for water works purposes – metal seated
AS/NZS 2638.2	Gate valves for water works purposes – resilient seated
AS/NZS 2648.1	Underground marking tape - non-detectable tape
AS/NZS 4020 (2018)	Testing of products for use in contact with drinking water
AS/NZS 4087	Metallic flanges for Waterworks purposes
AS/NZS 4129	Fittings for polyethylene (PE) pipes for pressure applications
AS/NZS 4130	Polyethylene (PE) pipes for pressure applications
AS/NZS 4131	Polyethylene (PE) compounds for pressure pipes and fittings
AS/NZS 4158	Thermal - bonded Polymeric coatings on valves and fittings for water industry purposes
AS/NZS 4441	Oriented PVC (PVC-O) pipes for pressure applications
AS/NZS 4765	Modified PVC (PVC-M) pipes for pressure applications
AS/NZS 4793	Mechanical tapping bands for waterworks purposes

AS/NZS 4998	Bolted Unrestrained Mechanical Couplings
TS 0420	Welding Requirements (Metal)
WSA 03:2011	Water Supply Code of Australia
WSA PS 106	Air valves
WSA PS 200	Ductile iron pipes for Pressure Applications
WSA PS 201	Ductile iron fittings for Pressure and Non-Pressure Applications
WSA PS 203	Steel pipe for Pressure and Non-Pressure Applications
WSA PS 207	Polyethylene (PE) pipe for Pressure and Non-Pressure Applications
WSA PS 208	Plastic Moulded Fittings for Pressure Applications with PE Pipe
WSA PS 209	Polyvinylchloride, Modified (PVC-M) Pressure Pipes for Pressure Applications
WSA PS 210	Polyvinylchloride, Oriented (PVC-O) Pressure Pipes for Pressure Applications
WSA PS 211	Polyvinylchloride, Unplasticised (PVC-U) Pressure Pipes for Pressure Applications
WSA PS 260	Gate Valves, Resilient Seated for Pressure Applications
WSA PS 262	Extension spindles for gate valves
WSA PS 263	Butterfly Valves for Pressure Applications
WSA PS 264	Non-Return (Reflux) Valves for Pressure Applications
WSA PS 265	Air Valves for Pressure Applications
WSA PS 267	Hydrants (spring) for Pressure Applications
WSA PS 270	Mechanical Couplings, Non-End Thrust Restraint for Pressure Applications
WSA PS 290	Ductile Iron Access Covers and Frames for Water Supply and Sewerage
WSA PS 313	Repair and Off-Take Clamps for Pressure Applications
WSA PS 318	Marking tape, detectable
WSA PS 319	Marking tape, non-detectable

### 1.3.2 SA Water Documents

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

Number	Title
TS 0420	Welding Requirements (Metals) - Technical Standard
TS 0800	Materials in Contact with Drinking Water

## 1.4 Definitions

The following definitions are applicable to this document:

Term	Description
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 Construction Technical Officer/Manager</li> <li>• Reticulation Networks Wastewater/Water Specialist</li> <li>• SA Water nominated contact person</li> </ul>
Responsible Discipline Lead	The engineering discipline expert responsible for TS 05033 defined on page 3 (via SA Water's Representative)
Constructor	The organisation responsible for constructing and installing infrastructure for SA Water whether it be a third party under contract to SA Water or an in-house entity.
Designer	The organisation responsible for designing infrastructure for SA Water whether it be a third party under contract to SA Water or a Constructor, or an in-house entity

## 1.5 Disclaimer

- SA Water reserves the right to alter, amend or withdraw this document, at any time, without prior notice. SA Water reserves the right, at its discretion, to suspend the use of or remove any product from this Technical Standard.
- SA Water does not give preference to any particular make or type of product listed herein. Manufacturers are presented in alphabetical order, not in any order of preference.
- All products listed may be subject to change by the manufacturer. In such circumstances manufacturers are required to notify SA Water of any changes in the design, materials or manufacturing process of any approved product. SA Water is reliant upon manufacturers providing such notification in a timely manner and takes no responsibility for any issue that may arise should a manufacturer fail to do so.
- It is the responsibility of the Designer/ Constructor to ensure selected products are appropriate for the intended application.
- It is the responsibility of the Designer/ Constructor to ensure the product complies with the infrastructure category and meets the relevant Australian standards.
- It is the responsibility of the Constructor to ensure components do not exceed any expiry date.
- Product sizing may vary between manufacturers. Size range provided herein is a guide only and the Designer/ Constructor shall refer to the manufacturer for the product size and availability.
- Pipes and fitting sizes have been limited to DN 375 throughout this document. Larger sizes are available from the manufacturer. However, consideration of any product not itemised herein is subject to SA Water approval.
- Information within this document is correct at time of publication.

## 2 Scope

This document specifies products that are authorised for use within:

- Drinking water systems, and,
- Non-Drinking water systems

up to a maximum size of DN 375.

The products listed in this standard are not for use on: Trunk Mains, Bulk Transfer, Critical Water Supply Systems.

Should a development project contain any product of diameter larger than DN 375, specific approval from SA Water will be required for the works to be undertaken by means of the Developer Agreement.

The developer's Consultant or Contractor shall provide the SA Water Representative with data sheets/ manufacturer information for all products larger than DN 375.

SA Water will review the information provided and advice regarding the suitability of the product.

All products used within the Drinking Water system shall require compliance to TS 0800 - Materials in contact with drinking water.

Such products include pipes, fittings, valves, assorted components, and materials used for coating, protection, lining, jointing, sealing and lubrication applications.

For the majority of products contained herein, AS/NZS 4020 (2018 and AMDT 1, 2022) compliance is a requirement of the Australian Standard for that product, e.g., AS/ NZS 2280, Ductile iron pipes and fittings.

Where an Australian Standard is not referenced for a particular product, AS/NZS 4020 (2018) compliance will require a separate confirmation of certification. If a product has AS/NZS 4020 (2005) certification, gap testing for leaching of organic material may be required.

### 2.1 Safety in Design



SA Water is committed providing safe workplaces for our people and safe services for our customers.

In keeping with this commitment, and to ensure the Supplier/Manufacturer has satisfied their legislated duties, the Supplier/Manufacturer shall provide information in accordance with the Work Health and Safety Act 2012 (SA) part 2 division 3, section 25. This may take the form of Operation and Maintenance manuals and/or SiD Hazard Registers (as specified by TS0101).



Designers that utilise products contained in this Standard shall apply SA Water Technical Standard TS0101 to incorporate the information provided by the Supplier/Manufacturer in the development of their design/s and transfer this to relevant parties.

## 3 Pipes

### 3.1 Ductile Iron Cement Lined Pipe (DACL)


Shall Comply with the following Standard/s	Drinking Water	AS/NZS 2280 AS/NZS 4020 (2018) AS 3680 AS 3681	
	Non-Drinking Water	AS/NZS 2280 AS/NZS 4020 (2018) AS 3680 AS 3681 WSA PS 200	
Specification	PN35 rated pipe only approved		<p>DN 80 – 375</p> 
Notes	<p>Used in Drinking Water and Non-Drinking Water Systems.</p> <p>All products, including pipes, fittings, coatings, linings, seals, and gaskets that are intended for contact with drinking water, shall comply with AS/NZS 4020 (2018)</p> <p>Drinking Water System pipes and fittings shall be wrapped in polyethylene sleeving coloured BLUE or BLACK</p> <p>Non-Drinking Water System pipes and fittings shall be wrapped in polyethylene sleeving coloured PURPLE</p> <p>PN20 Pipe shall not be used without SA Water approval.</p>		
Manufacturers	Iplex	Crevet Irontite	
	St Gobain PAM	TYTON Zinalium	
	Viadux	DIMAX Ranges – Tyton X and Tyton Z+	
	Vinidex	Linx GP and ZAP (Red band)	

### 3.2 PVC Pressure Pipe

<b>Shall Comply with the following Standard/s</b>	Modified PVC (PVC M)	AS/NZS 2032 AS/NZS 4020 (2018) AS/NZS 4765			
	Oriented PVC (PVC O)	AS/NZS 2032 AS/NZS 4020 (2018) AS/NZS 4441			
<b>Specification</b>	Predominantly Series 2, PN16 <b>Adelaide CBD and North Adelaide requires (minimum), PN20</b>				
<b>Notes</b>	<p><u>All pipe connections shall be:</u>                  Rubber Ring Jointed (RRJ)                  DI fittings only. Refer <b>4.1</b>  <u>Pressure Ratings</u>                  The use of PVC pipes greater than PN16, require approval from SA Water, via the standard dispensation procedure.  <u>Storage:</u>                  In compliance with AS/NZS 2032, if the total period of exposed storage outdoors is likely to exceed 12 months, pipes and fittings shall be covered and stored in a manner that allows ventilation and prevents heat entrapment.  <u>Sealing Rings</u>                  Sealing rings are to comply with AS/NZS 4020 (2018), and for Drinking Water supplies, they must additionally comply with Clause 3.6  <u>Colour Identification</u>                  In compliance with Table 4.1 of WSA 03, For any system, do not apply purple sleeve over a pipe, fitting, valve, or other appurtenance that is coloured blue and vice versa.</p>				
	Drinking Water	Pipe colour – BLUE			
	Non-Drinking Water	Pipe colour – LILAC/ PURPLE			
	<b>Manufacturers</b>	<b>Pipemakers</b>	PVC - M		Enviromain Series 2 - All sizes ≤ <b>375 mm</b>
			PVC - O		All sizes ≤ <b>375 mm</b>
<b>Iplex</b>		PVC - M	BLUE/ PURPLE Rhino - All sizes ≤ <b>375 mm</b>		
		PVC - O	Apollo BLUE/ PURPLE - All sizes ≤ <b>375 mm</b>		
<b>Vinidex</b>		PVC - M	Hydro - All sizes ≤ <b>375 mm</b>		
		PVC - O	Supermain - All sizes ≤ <b>375 mm</b>		
<b>DAMOS</b>		PVC - M	Series 2 - All sizes ≤ <b>375 mm</b>		




### 3.3 Polyethylene Pipe

Shall Comply with the following Standard/s	Drinking Water and Non-Drinking Water	AS/NZS 4130 AS/NZS 4020 (2018)				
	Connections	AS 4130, AS 2033 AS/NZS 4020 (2018)				
Specification	Drinking Water	PE100 Pipe, PN16				
	Non-Drinking Water	OD63 – OD315				
Connections	PE100 Pipe – PN16 or PE80 Pipe – PN16 OD25 – 63					
Notes	Drinking Water	BLACK with BLUE Stripe or All BLUE				
	Non-Drinking Water	Solid PURPLE Jacket				
	Connections OD 25 – 63  Diameters larger than OD 315 shall require specific SA Water approval	Drinking Water	Solid BLACK or BLACK with BLUE Stripe			
		Non-Drinking Water	Solid PURPLE Jacket			
Manufacturers	Australian Custom Pipes	DW, NDW, Connections				
	Cromford Pipe	DW, NDW, Connections	Identipipe			
	David Moss Group	DW, NDW, Connections				
	DM Plastic	DW, NDW, Connections	Goldline			
	Enviropipe	DW, NDW, Connections	ENVIROPRESSURE			
	Iplex	DW, NDW, Connections	POLIplex			
	Poly Pipe	DW, NDW, Connections				
	Vinidex	DW, NDW, Connections				
	Zezt	DW, NDW, Connections				
	Advanced Piping Systems	DW, NDW, Connections	Maxiplast Polyethylene - PE100 - Acu-Pipe.			
Pipemakers Australia	DW, NDW, Connections					

#### Size of PE Pipe Equivalent


Standard Pipe Size	PE Pipe Equivalent	Standard Pipe Size	PE Pipe Equivalent
DN 20	OD 25	DN 100	OD 125
DN 40	OD 50	DN 150	OD 180
DN 50	OD 63	DN 200	OD 250
DN 80	OD 90	DN 250	OD 315

### 3.4 Steel Cement Lined Pipes (SCL)



Shall Comply with the following Standard/s	Drinking Water	AS 1579 AS/NZS 4020 (2018) TS 0420	
	Non-Drinking Water	AS 1579 AS 1281 WSA PS 203 TS 0420	
Specification	Drinking Water	Steel pipe coated with sintakote fusion bonded polyethylene and lined with cement mortar	
	Non-Drinking Water	Non-Drinking Water System pipes and fittings shall be wrapped in polyethylene sleeving coloured PURPLE	
Notes	Jointing: Spherical Slip-in (Welded) Ball & SOC (Welded) Plain Ended Butt Joint (Welded) Butt Joint with Collar (Welded) Spirally welded pipe to comply with TS 0420 Flange (In accordance with AS/NZS4087)		
Manufacturer	Steel Mains Pty Ltd		

Refer [9.2](#) for SCL Fabricators

### 3.5 Copper Tube

Shall Comply with the following Standard/s	AS 1432 AS/NZS 4020 (2018)	
Specification	Type A, colour code green, annealed or bendable	
Notes	Used for connections only DN 20 – DN 50 Only Availability shall be confirmed with the manufacturer	
Manufacturer	Kembla	

## 3.6 Rubber Sealing Rings

<b>Shall Comply with the following Standard/s</b>	<p>TS 0800 (which incorporates AS/NZS 4020 (2018))</p> <p>SA Water's specific compliance requirements with respect to TS 0800, are specified in clause 1.1.1</p> <p>AS 1646</p>			
<b>Notes</b>	<p>If a manufacturer makes changes to any component of an approved product (i.e., different supplier/rubber type), they must notify the owner of this standard (TS 0503). Any changes to an approved product, requires SA Water approval.</p>			<p>A sticker must also be affixed to the outside of the pipe, indicating the presence of compliant sealing rings.</p>
<b>Manufacturers</b>		<b>Manufacturer's product compound</b>	<b>Manufacturer's product code</b>	<b>Compliant sealing ring markings.</b>
	<b>Hultec Asia Pacific Pty Ltd</b>	EPDM	HT5557	<p>NC is moulded inside the rubber ring.</p> 
		EPDM	HT5567-3	
		EPDM	HT5717	
		NBR	HT4627	
		SBR	HT457	
		SBR	HT627	
	<b>Gulf Rubber Australia Pty Ltd</b>	EPDM	5410S	<p>The Letter S and Year of manufacture, moulded inside the rubber ring.</p> 
		EPDM	5514S	
		EPDM	5615S	
		EPDM	5718S	
		EPDM	5811S	
		NBR	4711S	
		NBR	4811S	
		SBR	2410S	
		SBR	2512S	
		SBR	2612S	





## 4 Fittings

### 4.1 Ductile Iron (FBE Coated)





<b>Shall Comply with the following Standard/s</b>	AS/NZS 2280 AS/NZS 4020 (2018)
<b>Specification</b>	PN 16 unless otherwise specified (Series 2) Flanges to: - AS/NZS 4087, PN16 AS/NZS 4087, PN35
<b>Notes</b>	BLACK/BLUE coloured fittings are <b>not</b> acceptable for use in <b>Non-Drinking</b> Water Systems for property connections (ref clause 1.1.2)

#### 4.1.1 Principal Items (Regularly Used)

##### 4.1.1.1 Tee "T" (Including Reducing Tee)

SOC/SOC Branch SOC		SOC/SOC Branch FLG		FLG/FLG Branch FLG		SPI/SPI Branch SPI	
							
DN 80 – 375		DN 80 – 375		DN 80 – 375		DN 100 - 300	
<b>Manufacturers</b>							
<b>Derwent Industries</b>		<b>Derwent Industries</b>		<b>Derwent Industries</b>		<b>Derwent Industries</b>	
<b>Dobbie Dico</b>		<b>Dobbie Dico</b>		<b>Dobbie Dico</b>			
<b>Galvin Engineering</b>	STD PN35	<b>Galvin Engineering</b>	Ezy-Lift PN16	<b>Galvin Engineering</b>			
	Ezy-Lift PN16						
<b>Iplex</b>	STD PN35	<b>Iplex</b>	STD PN35	<b>Iplex</b>		<b>Iplex</b>	
	Crevet SL PN16		Crevet SL PN16				
<b>Mallet Foundry</b>		<b>Mallet Foundry</b>		<b>Mallet Foundry</b>			
<b>Sureflow (Viadux)</b>	STD PN35	<b>Sureflow (Viadux)</b>	STD PN35	<b>Sureflow (Viadux)</b>		<b>Sureflow (Viadux)</b>	
	Auslite PN16		Auslite PN16				
<b>Vinidex</b>	STD PN35	<b>Vinidex</b>	STD PN35	<b>Vinidex</b>			
	SLII PN16		SLII PN16				
<b>DAEMCO</b>		<b>DAEMCO</b>		<b>DAEMCO</b>			
<b>AVK</b>	PN16/ PN35	<b>AVK</b>	PN16/ PN35	<b>AVK</b>		<b>AVK</b>	

### 4.1.1.2 Bends

SOC/SOC		FLG/FLG		FLG/SOC		FLG/SPI	
							
DN 80 – DN 375 (11 ¼° - 90°)		DN 80 – DN 375 (11 ¼° - 90°)		DN 80 – DN 375 (11 ¼° - 90°)		DN 80 – DN 375 (11 ¼° - 90°)	
Manufacturers							
Derwent Industries	PN 35	Derwent Industries	Derwent Industries	Derwent Industries	Derwent Industries	Derwent Industries	Derwent Industries
	PN 16						
Dobbie Dico		Dobbie Dico		Dobbie Dico			
Galvin Engineering	STD – PN35	Galvin Engineering (DN 100 & DN 150)	Galvin Engineering (DN 100 & DN 150)	Galvin Engineering (DN 100 & DN 150)	Galvin Engineering (DN 100 & DN 150)	Galvin Engineering (DN 100 & DN 150)	Galvin Engineering (DN 100 & DN 150)
	Ezy-Lift PN16						
Gillies Metaltech Ltd				Gillies Metaltech Ltd			
Iplex	STD – PN35	Iplex	Iplex	Iplex	Iplex	Iplex	Iplex
	Crevet SL - PN16						
Mallet Foundry		Mallet Foundry					
Sureflow (Viadux)	STD – PN35	Sureflow (Viadux)	Sureflow (Viadux)	Sureflow (Viadux)	Sureflow (Viadux)	Sureflow (Viadux)	Sureflow (Viadux)
	Auslite PN16						
Vinidex		Vinidex		Vinidex			
DAEMCO		DAEMCO					
AVK	PN16/PN35	AVK		AVK		AVK	

Note:


- 6° SOC bends may be available from Viadux and AVK, (DN 100 – DN 200)

### 4.1.1.3 Connectors

#### 4.1.1.3.1 Socket / Socket, Flange / Socket & Flange / Spigot





SOC SOC 	FLG/SOC 	FLG/SPI 
DN 80 - 375	DN 80 – 375	DN 80 – 375
<b>Manufacturers</b>		
<b>Derwent Industries</b>	<b>Derwent Industries</b>	<b>Derwent Industries</b>
	<b>Dobbie Dico</b>	<b>Dobbie Dico</b>
	<b>Galvin Engineering</b>	<b>Galvin Engineering</b>
	<b>Gillies Metaltech</b>	
<b>Iplex</b>	<b>Iplex</b>	<b>Iplex</b>
	<b>Mallet Foundry</b>	<b>Mallet Foundry</b>
<b>Sureflow (Viadux)</b>	<b>Sureflow (Viadux)</b>	<b>Sureflow (Viadux)</b>
<b>Vinidex</b>	<b>Vinidex</b>	<b>Vinidex</b>
	SL PN35 DN 100 – 375	SL PN35 DN 100 – 375
	SLII PN16 DN 100 – 250	SLII PN16 DN 100 – 375
<b>DAEMCO</b>	<b>DAEMCO</b>	<b>DAEMCO</b>
	PN 16 and PN 35 DN 80 - 375	PN 16 and PN 35 DN 80 - 375
<b>AVK</b>	<b>AVK</b>	<b>AVK</b>

#### 4.1.1.3.2 Double Flanged Extension Pipe (Flanged Connector)

<b>Shall Comply with the following Standard/s</b>	AS/NZS 2280 AS/NZS 4020 (2018)	
<b>Notes</b>	Hydrant Riser Including – Tapped 2" BSP Range of lengths offered. Confirm availability with manufacturer  Special orders may be manufactured to any length up to 5 meters Long	  DN 80 - DN 375 Lengths 100 - 1120
<b>Manufacturers</b>	<b>Derwent Industries</b>	
	<b>Dobbie Dico</b>	
	<b>Galvin Engineering</b>	
	<b>Iplex</b>	FLG/FLG Tapped 2" BSP DN 80 x (230) (225nom)
	<b>Sureflow (Viadux)</b>	
	<b>Vinidex</b>	
	<b>DAEMCO</b>	
	<b>AVK</b>	

### 4.1.1.4 Reducer/Taper

#### 4.1.1.4.1 Standard Reducer

SOC/SOC 		FLG/FLG 		FLG/SOC 		SPI/SPI 		FLG/SPI 	
DN 100 - 375		DN 100 -375		DN 100 - 300		DN 100 -300		DN 100 - 300	
Manufacturers									
Derwent Industries		Derwent Industries		Derwent Industries		Derwent Industries		Derwent Industries	
		Dobbie Dico							
Galvin Engineering		Galvin Engineering							
Gillies Metaltech Ltd									
Iplex		Iplex		Iplex		Iplex		Iplex	
Mallet Foundry		Mallet Foundry							
Sureflow (Viadux)		Sureflow (Viadux)		Sureflow (Viadux)		Sureflow (Viadux)		Sureflow (Viadux)	
Vinidex	SL PN35	Vinidex	SL PN35	Vinidex	SL PN35				
	SLII PN16				SLII PN16				
		DAEMCO							
AVK		AVK		AVK		AVK		AVK	



#### 4.1.1.4.2 Eccentric Reducer Flange / Flange

		
<b>Manufacturers</b>	<b>Derwent Industries</b>	
	<b>Iplex</b>	
	<b>Mallet Foundry</b>	
	<b>Sureflow (Viadux)</b>	
	<b>Vinidex</b>	SL PN35
	<b>AVK</b>	

#### 4.1.1.5 Hydrant Tee “T”

Riser Hydrant 80mm 		SPI/SPI Branch FLG 		SOC/SPI Branch FLG 	
DN 100 - 375		DN 80 – 375		DN 300 (80 & 100)	
<b>Manufacturers</b>					
<b>Derwent Industries</b>		<b>Derwent Industries</b>		<b>Derwent Industries</b>	
<b>Galvin Engineering</b>		<b>Galvin Engineering</b>			
<b>Iplex</b>		<b>Iplex</b>		<b>Iplex</b>	
		<b>Mallet Foundry</b>		<b>Mallet Foundry</b>	
<b>Sureflow (Viadux)</b>		<b>Sureflow (Viadux)</b>		<b>Sureflow (Viadux)</b>	
<b>Vinidex</b>	SL PN35	<b>Vinidex</b>	SL PN35	<b>Vinidex</b>	SLII PN16
<b>DAEMCO</b>		<b>DAEMCO</b>			
<b>AVK</b>		<b>AVK</b>		<b>AVK</b>	

#### 4.1.1.6 Extension Pipe with Puddle Flange

FLG/FLG With Puddle Flange 		FLG/SOC With Puddle Flange 	
DN 100 – 375 Length 600 - 915		DN 100 – 375 Length 450 – 915	
<b>Manufacturers</b>			
<b>Derwent Industries</b>		<b>Derwent Industries</b>	
<b>Galvin Engineering</b>		<b>Galvin Engineering</b>	
<b>Iplex</b>		<b>Iplex</b>	
<b>Sureflow (Viadux)</b>		<b>Sureflow (Viadux)</b>	
<b>Vinidex</b>		<b>Vinidex</b>	
<b>DAEMCO</b>		<b>DAEMCO</b>	
<b>AVK</b>		<b>AVK</b>	

Refer to [4.2.1](#) for polyethylene puddle flange


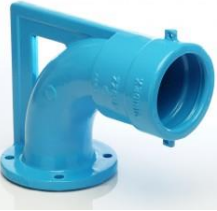


Refer to [9.1.1](#) for factory fabricated polyethylene pipe

Refer to [9.2.1](#) for factory fabricated mild steel specials



## 4.1.2 Less Frequently Utilised Items

### 4.1.2.1 Supported Bends


<p>Hydrant Bend</p> 	<p>FLG/SOC With Heel</p> 	<p>FLG/FLG With Heel</p> 	<p>FLG/FLG Duck foot</p> 
<p>DN 80 - 150</p>	<p>DN 100 SOC - DN 80 FLG DN 150 SOC - DN 80 FLG</p>	<p>DN 80 - 375</p>	<p>DN 80 - 375</p>
<b>Manufacturers</b>			
<p><b>Derwent Industries</b></p>	<p><b>Derwent Industries</b></p>		<p><b>Derwent Industries</b></p>
<p><b>Dobbie Dico</b></p>	<p><b>Dobbie Dico</b></p>		<p><b>Dobbie Dico</b></p>
	<p><b>Galvin Engineering</b></p>		
<p><b>Iplex</b></p>	<p><b>Iplex</b></p>	<p><b>Iplex</b></p>	<p><b>Iplex</b></p>
<p><b>Sureflow (Viadux)</b></p>	<p><b>Sureflow (Viadux)</b></p>		<p><b>Sureflow (Viadux)</b></p>
	<p><b>DAEMCO</b></p>		
<p><b>AVK</b></p>	<p><b>AVK</b></p>	<p><b>AVK</b></p>	<p><b>AVK</b></p>

### 4.1.2.2 Cap

		
<b>Manufacturers</b>	<b>Derwent Industries</b>	
	<b>Mallet Foundry</b>	
	<b>Vinidex</b>	<b>SL - PN35</b>
	<b>Sureflow (Viadux)</b>	
	<b>DAEMCO</b>	
	<b>AVK</b>	

### 4.1.2.3 Flanges



#### 4.1.2.3.1 Blind / Blank

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4087, PN16 AS/NZS 4087, PN35 AS/NZS 4020 (2018)	
		
<b>Manufacturers</b>	<b>Derwent Industries</b>	
	<b>Dobbie Dico</b>	
	<b>Iplex</b>	PN16 PN35
	<b>Sureflow (Viadux)</b>	
	<b>DAEMCO</b>	PN 16
	<b>AVK</b>	

#### 4.1.2.3.2 Blank Flange Threaded BSP (With/Without) Location Lugs

		
<b>Manufacturers</b>	<b>Iplex</b>	Available on Request
	<b>Viadux</b>	BSP Thread, any DN up to fitting DN
	<b>DAEMCO</b>	Blank and tapped

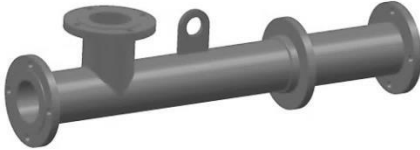
#### 4.1.2.4 Flange Flared Fittings

<b>FLG/FLR Bend</b> 	<b>FLG/FLR</b> 
DN 80 - 375	
<b>Manufacturers</b>	<b>Derwent Industries</b>
	<b>Iplex</b>
	<b>Sureflow (Viadux)</b>
	<b>AVK</b>

## 4.2 Polyethylene Fittings

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4129 AS/NZS 4020 (2018)
<b>Specification</b>	Butt welded Items shall only be fabricated by welders who have attained the PMBWELD301B qualification. Electrofusion welding shall only be fabricated by welders who have attained the PMBWELD302B qualification.
<b>Notes</b>	Only PE products identified in this document are approved for use. In addition, the products shall be obtained from one of the listed Manufacturers, or their Agent. Upon completion, the Fabrication Company shall provide the SA Water Representative with a <b>Form</b> : Identifying every weld, with the date of the weld and name and id of the technician who undertook the weld Itemising the materials used, i.e., item manufacturer & description. Each weld shall be stamped with the welder id. The <b>Form</b> shall be signed by an authorised officer of the Fabrication Company and shall be co-signed by the Construction Contractor installing the item.

### 4.2.1 Flange / Flange with Thrust Ring & 80 Flange Fire Plug Offtake

 <p><b>DN 100 - 375</b></p>	
<b>Manufacturer</b>	<b>Refer Section <u>9.1.1</u> Factory Fabrication of PE Specials</b>

Refer 9.1.2 for Mild Steel Cement Lined



Refer 4.1.1.6 for Ductile Iron Cement Lined

### 4.2.2 Electrofusion Couplings

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4129 AS/NZS 4020	
<b>Note</b>	Diameters larger than OD 315 shall require specific SA Water approval	
<b>Manufacturers</b>	<b>Fusion Group</b>	Fusamatic
	<b>Georg Fischer</b>	
	<b>Nupigeco SpA</b>	EloFIT
	<b>Plasson</b>	Smartfuse
	<b>Rollmaplast</b>	
	<b>Vinidex</b>	Frialen
	<b>Advanced Piping Systems</b>	Plastitalia Fox
	<b>Adroit Piping Systems</b>	

### 4.2.3 Electrofusion Puddle Flange


Refer [4.1.1.6](#) Extension Pipe for Ductile Iron Puddle Flange fittings.

		
	OD160 - 315	
<b>Notes</b>	Only to be installed in accordance with manufacturers installation instruction for this product and within the guidelines of PIPA document POP 001	
<b>Manufacturer</b>	<b>Plasson</b>	Flex Restraint
	<b>Vinidex</b>	Fixbloc
	<b>Advanced Piping Systems</b>	Plastitalia

### 4.2.4 Butt Weld Fittings

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS/NZS 4129 AS/NZS 4020 (2018)</p>	
<p><b>Notes</b></p>	<p>Diameters larger than OD 315 shall require specific SA Water approval.</p> <p>Approval is for <u>only the following specific SDR11 Spigot fittings</u>.</p> <p>Both Long &amp; Short Spigot: <b>Bend</b>, 90° &amp; 45° <b>Tees</b>, Equal &amp; Reducing <b>Reducer</b> <b>Flange Adaptor</b>, Long &amp; Stub <b>Cap</b></p>	 <p style="text-align: center;">PN 16</p>
<p><b>Manufacturers</b></p>	<p><b>Fusionweld</b></p>	<p>Spigot Fittings</p>
	<p><b>Georg Fischer</b></p>	<p>EF Spigot Fittings</p>
	<p><b>MAKO Poly</b></p>	<p>PE Butt Fusion Fittings</p>
	<p><b>Nupigeco SpA</b></p>	<p>EloFIT Spigot Fittings</p>
	<p><b>Simona AG</b></p>	<p>Spigot Fittings</p>
	<p><b>Advanced Piping Systems</b></p>	<p>Spigot and Butt</p>
	<p><b>Vinidex</b></p>	<p>Spigot and Butt</p>
	<p><b>Adroit Piping Systems</b></p>	<p>Spigot and Butt</p>


#### 4.2.4.1 Ductile Iron Restraining (Puddle) Flange for PE 100 Pipe

<p><b>Notes</b></p>	<p>Manufactured with a gripping profile which is bolted in place and imbeds into the surface of the PE pipe, to provide the required thrust capability.</p> <p>PN 16</p>	
<p><b>Sizes</b></p>	<p>DN 125 and DN 180</p>	
<p><b>Manufacturer</b></p>	<p><b>Derwent Industries</b></p>	


### 4.2.5 Mechanical Couplings

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS/NZS 4129 AS/NZS 4020 (2018)</p>	
<div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: center;">OD25 - 63</p>		
<p><b>Notes</b></p>	<p>PE fittings with male threaded end connectors, shall not be screwed directly into pre tapped connectors or tapping saddles</p>	
<p><b>Manufacturers</b></p>	<p><b>Georg Fischer</b></p>	
	<p><b>Magnum (Iplex)</b></p>	
	<p><b>Milnes (ESSE)</b></p>	
	<p><b>Nupigeco SpA</b></p>	<p>EloPRESS Compression Fittings</p>
	<p><b>Philmac</b></p>	<p>3G Metric</p>
	<p><b>Plasson</b></p>	<p>Metric Compression Fittings</p>
	<p><b>FusionWeld (Fusion Plast)</b></p>	
	<p><b>Supreme (Viadux)</b></p>	<p>S16 Compression Fittings</p>
	<p><b>Advanced Piping Systems</b></p>	<p>Compression Fittings</p>
	<p><b>Viega</b></p>	<p>Geopress K Fittings <i>(Only to be fitted, using the Viega press gun)</i></p>

### 4.3 Flange Offtakes (Stainless Steel)

<b>Shall Comply with the following Standard/s</b>	AS 4181 AS/NZS 4020 (2018)						
<b>Notes</b>	For use on DICL, CICL, Steel, Copper, RC and AC. * Not to be used for joining of pipes or for the following materials: PVC-O, GRP, PE and other plastics	 <p style="text-align: center;">DN 100 – 375</p>					
<b>Manufacturers</b>	<table border="1" style="width: 100%; text-align: center;"> <tr><td>AVK</td></tr> <tr><td>Iplex (Crevet)</td></tr> <tr><td>Viadux (Wang)</td></tr> <tr><td>RMC</td></tr> <tr><td>Derwent Industries</td></tr> </table>		AVK	Iplex (Crevet)	Viadux (Wang)	RMC	Derwent Industries
AVK							
Iplex (Crevet)							
Viadux (Wang)							
RMC							
Derwent Industries							

#### 4.3.1 Flanged Off – Takes (Ductile Iron)

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4129 AS/NZS 4020 (2018) AS 4181	
<b>Notes</b>	(PN 16) For use on PE 100 pipe, S2-PVC, AC, GRP, DI, CI	 <p style="text-align: center;">                     DN 125 x 80                      125 x 100                      180 x 80                      180 x 100                 </p>
<b>Manufacturer</b>	<b>Derwent Industries (DI Uniclamp)</b>	



## 4.4 Steel Cement Lined Fittings

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS 1579 AS 1281 AS/NZS 4020 (2018) WSA PS 203</p>	
<p><b>Notes</b></p>	<p>MSCL Specials, e.g., tees, bends, extension piece with puddle flange etc shall be manufactured only by Approved Suppliers</p>	
<p><b>Manufacturers</b></p>	<p><b>Refer 9.2.1</b> for Factory Fabrication of SCL Specials <b>Refer 3.4</b> for SCL Pipe Manufacturers</p>	



## 5 Mains Tapping Fittings

### 5.1 Ductile Iron (FBE Coated) Pre-Tapped Connectors

<b>Shall Comply with the following Standard/s</b>		AS/NZS 2280 AS/NZS 4020 (2018)	
<b>Single Tapping Each Side</b>		<b>Twin Tapping Each Side</b>	
			
DN 100 x (3/4" – 2" BSP) DN 150 x (3/4" – 2" BSP) DN 200 x (2" BSP)		DN 100 x (3/4" – 1" BSP) DN 150 x (3/4" – 1" BSP) DN 200 x (3/4" BSP)	
<b>Manufacturers</b>			
<b>Derwent Industries</b>		<b>Derwent Industries</b>	
<b>Dobbie Dico</b>		<b>Dobbie Dico</b>	
<b>Galvin Engineering</b>		<b>Galvin Engineering</b>	
<b>Iplex</b>		<b>Iplex</b>	
<b>Sureflow (Viadux)</b>		<b>Sureflow (Viadux)</b>	
<b>Vinidex</b>		<b>Vinidex</b>	
<b>Stockbrands</b>	Nylon	<b>Stockbrands</b>	Nylon
<b>DAEMCO</b>		<b>DAEMCO</b>	
<b>AVK</b>		<b>AVK</b>	

## 5.2 Tapping Saddles


### 5.2.1 For, DICL/CICL, PVC & AC Pipes Only

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4793 AS/NZS 4020 (2018) WSA PS 313	
316 Stainless Steel    DN 80 - 375	Ductile Iron Or Gunmetal    DN 80 - 375	





Material	20 and 25 mm Offtake Manufacturers		
	DICL & CICL	PVC	AC
Bronze	Milnes / 60B (Iplex)		
Ductile Iron	Viadux / Iso-tap	Viadux / Iso-tap	Viadux / Iso-tap NIBF (Iplex)
Ductile Iron FBE Coated	NIBF / Taptite (Iplex)	NIBF (Iplex)	
Gunmetal		Milnes / 60A (Iplex)	Milnes / 60B (Iplex)
		RMC Sureseal	RMC Sureseal
Nylon		Stockbrands (incl. Self-Tapping type)	Stockbrands (incl. Self-Tapping type)
316 Stainless Steel	Wang KT (Viadux)	Talbot / Self Tapping	
		Wang KT (Viadux)	Wang KT (Viadux) Wang BPS (Viadux)
Material	40 mm Offtake Manufacturers		
	DICL & CICL	PVC	AC
Bronze			Milnes / 60B (Iplex)
			RMC Sureseal
Ductile Iron	Viadux / Iso-tap		
Ductile Iron FBE Coated	NIBF / Taptite (Iplex)		
Gunmetal		Milnes / 60A (Iplex)	
		RMC Sureseal	
Nylon		Stockbrands (incl. Self-Tapping type)	Stockbrands (incl. Self-Tapping type)
316 Stainless Steel	Wang BPS (Viadux)	Wang BPS (Viadux)	Wang BPS (Viadux)

Material	50 mm Offtake (used with OD63 PE) Manufacturers		
	DICL & CICL	PVC	AC
Ductile Iron FBE Coated	NIBF (Iplex)		
Gunmetal		Milnes / 60A (Iplex)	
Nylon		Stockbrands (incl. Self-Tapping type)	Stockbrands (incl. Self-Tapping type)
316 Stainless Steel	Wang BPS (Viadux)	Wang BPS (Viadux)	Wang BPS (Viadux)


### 5.3 Electro Fusion Tapping Tee and Branch Saddle (For Polyethylene Pipes Only)

Shall Comply with the following Standard/s	AS 4129 AS/NZS 4020 (2018)		
Notes	Electrofusion tapping saddle shall always be used with Underpart as shown	 <p>OD63 - 315</p>	
Manufacturers			
<b>Georg Fischer</b>			
<b>Fusionweld</b>	<b>Multiseal</b>		
<b>Plasson</b>	<b>Advanced Piping Systems</b>		

### 5.4 Tapping Couplings (For 63 mm Pipes Only)

Shall Comply with the following Standard/s	AS 4129 AS/NZS 4020 (2018)		
			
Manufacturers			
<b>Plasson</b>	<b>Talbot</b> (Self-Tapping)	<b>Refer Clause <u>4.2.5</u></b>	<b>Viega</b> (Only to be fitted, using the Viega press gun)




## 5.5 Steel Boss – Tapped, Weld On (For MSCL Pipes Only)

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS/NZS 4020 (2018)</p>
<p><b>1/8" – 1 1/2" BSP</b></p>	
<p><b>Manufacturer</b></p>	<p><b>Ferretti International</b></p>


## 6 Couplings/Adaptors

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4158-1 AS/NZS 4020 (2018) AS/NZS 4998
<b>Specification</b>	WSA PS 270
<b>Notes</b>	Grade 316 stainless steel bolts having a life expectancy of over 50 years. <b>Permitted for use in accordance with WSCM drawings 4005-30005-06 and 4005-30005-09.</b> Not to be used on polyethylene pipes, unless stated. Bitumen coated end clips shall not be used.


### 6.1 Straight, Stepped & Adaptor Flange Couplings

 DN 80 - 375		 DN 80 - 375		 DN 80 - 375	
Manufacturers					
<b>AVK</b>	Model 601 Supa Gib Coupling	<b>AVK</b>	Model 602 Supa Gib Stepped Coupling	<b>AVK</b>	Model 603 Supa Gib Adaptor Flange
<b>Georg Fischer</b>	WAGA Multi-Joint 3000 Plus (DN 80 – 300)	<b>Georg Fischer</b>	WAGA Multi- Joint 3000 Plus (DN 80 – 300)		
<b>Viadux (Wang)</b>	Multigib coupling & Vari-Gib coupling long sleeve preferred & (Easigib Coupling)	<b>Viadux (Wang)</b>	DN 100 – 150 (133 - 172 mm)  VGib RCF SAW	For use on RC/ PVC Pipe	
<b>Viking Johnson Maxifit</b>	Maxifit coupling long sleeve preferred				
<b>DAEMCO</b>	DN 80 - 300				
<b>HAWLE</b>	DN 50 - 300	<b>HAWLE</b>	Synoflex For use on RC, PVC and PE Pipe	<b>HAWLE</b>	Synoflex

## 6.2 Gibault's

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4020 (2018) AS/NZS 4998	
<b>Notes</b>	Permitted for use in accordance with WSCM drawings.  Not to be used on polyethylene pipes.	 <p style="text-align: center;">DN 100 – 375</p>
<b>Manufacturer</b>	<b>DEKS</b>	Flex-Gib


## 6.3 Camlock Couplings

<b>Shall Comply with the following Standard/s</b>	AS 3688 AS/NZS 4129 AS/NZS 4020 (2018)				
<b>Notes</b>	Metal or Polyethylene. Coupling (Type F) with BSP male thread. Dust Cap (Type DC).	 <p style="text-align: center;">DN 50 - 100</p>			
<b>Manufacturers</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;"><b>Austrahose</b></td> </tr> <tr> <td style="text-align: center; padding: 5px;"><b>Philmac</b></td> </tr> <tr> <td style="text-align: center; padding: 5px;"><b>Banjo</b></td> </tr> </table>		<b>Austrahose</b>	<b>Philmac</b>	<b>Banjo</b>
<b>Austrahose</b>					
<b>Philmac</b>					
<b>Banjo</b>					


## 7 Valves

### 7.1 Gate Valves



#### 7.1.1 Resilient Seat Gate Valve Double Flange

<b>Shall Comply with the following Standard/s</b>	AS 2638-2 AS/NZS 4020 (2018) WSA PS 260		
<b>Notes</b>	PN 16 unless otherwise specified.	 DN 50 - 375	
<b>Manufacturers</b>	<b>AAP Industries Pty Ltd (Maxiflo)</b>		
	<b>AVK</b>	570 Series DN 80 – 375, DN 80 – 300 OS&Y	57 Series (PN25)
	<b>Sureflow (Viadux)</b>	2570 Series DN 80 – 375, DN 80 – 300 OS&Y	
	<b>Betta Valves</b>		
	<b>KARON</b>	Licence No. SMPK 20472	
	<b>Derwent Industries</b>		
	<b>Weflo Valve (Reece) DIMAX</b>	DN 80 – 375, DN 80 – 300 OS&Y DN 80 – 300 (PN 25)	
	<b>DAEMCO</b>	DN 80 – 375 mm	
<b>HAWLE</b>	E3		


#### 7.1.2 Resilient Seat Gate Valve Double Socket

<b>Shall Comply with the following Standard/s</b>	AS 2638-2 AS/NZS 4020 (2018) WSA PS 260		
<b>Notes</b>	Only to be used on DICL pipes and secured with Tytonlok retaining ring (PN 16)	 DN 80 - 300	
<b>Manufacturers</b>	<b>AAP Industries Pty Ltd (Maxiflo)</b>	<b>AVK (570/91)</b>	
	<b>Betta Valves</b>	<b>Derwent Industries</b>	
	<b>Sureflow (Viadux)</b>	<b>DAEMCO</b>	
	<b>Weflo Valve (Reece) DIMAX</b>		

### 7.1.3 Resilient Seat Gate Valve with PE Pipe Connection Ends

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS 2638-2 AS/NZS 4020 (2018) WSA PS 260</p>	
		
<p><b>Series 01/91 (tensile resistant PE ends – restrained joints) PE OD90 – 315</b></p>	<p>Series 36/81 &amp; 36/20 (fusions or butt weld applications) PE OD75 - 315</p>	
<p><b>Series 16/50 (POM with tensile restrained joints for PE pipes) PE OD63</b></p>		
<p><b>AVK OD90 – OD315</b></p>	<p><b>AVK</b></p>	
<p><b>DAEMCO OD125 and OD 180</b></p>		
<p><b>Derwent OD 125 – OD 315</b></p>		


### 7.1.4 Metal Seat Gate Valve Double Flange

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS 2638-1 AS/NZS 4020 (2018)</p>	
<p><b>Notes</b></p>	<p>These valves are for PN 35 applications. PN35 Gate Valves with interference fit body and door seat rings are not supported for use within SA Water's critical water supplies (inclusive of drinking water and raw water systems). This is applicable to trunk mains, bulk transfer, and critical water supply systems</p>	 <p>DN 80 - 350</p>
<p><b>Manufacturers</b></p>	<p><b>AVK</b></p>	




## 7.2 Ball Valve

### 7.2.1 Polyethylene Ball Valve




<b>Shall Comply with the following Standard/s</b>	AS/NZS 4129 AS/NZS 2638.2 AS/NZS 2638.1 AS/NZS 4020 (2018)	
<b>Notes</b>	DN 40 and DN 50	
<b>Manufacturers</b>	<p style="text-align: center;"><b>Iplex</b></p> <p style="text-align: center;"><b>Philmac</b></p> <p style="text-align: center;"><b>Vinidex</b></p>	

### 7.2.2 Brass Ball Valve



#### 7.2.2.1 DN 25 – DN 50

<b>Shall Comply with the following Standard/s</b>	AS 3688 AS/NZS 4020 (2018)	
<b>Notes</b>	Brass body with <b>Stainless Steel Ball</b> and <b>Stainless-Steel handle.</b>  DN 25, 40, 50	
<b>Manufacturers</b>	<p style="text-align: center;"><b>Zetco</b></p> <p style="text-align: center;"><b>Austworld</b></p>	


#### 7.2.2.2 DN 20 x 90° Angle Valve

<b>Shall Comply with the following Standard/s</b>	AS 3688 AS/NZS 4020 (2018)			
<b>Notes</b>	Brass body with <b>Stainless Steel Ball</b>	 One-Piece Valve	 with <b>Brass</b> handle	 <b>Stainless Steel</b> handle
<b>Manufacturers</b>	<b>Zetco</b>		DN 20	DN 20
	<b>Austworld</b>	DN 20 (PN 20 and 25)	DN 15- 50 (PN 20 and 25)	DN 15- 50


### 7.2.2.3 NDW Ball Valves

<b>Shall Comply with the following Standard/s</b>	AS 3688 AS/NZS 4020 (2018)		
<b>Notes</b>	Brass body with <b>Stainless Steel Ball</b>  <b>Solid Purple colour for NDW Systems</b> (Ref: Clause 1.1.2)		
<b>Manufacturers</b>	<b>Zetco</b>	DN 20	DN 25, 40, 50
	<b>Austworld</b>	DN 15- 50 (PN 20 and 25)	DN 15- 50 (PN 20 and 25)


### 7.3 Pressure Reducing/Flow Control

<b>Shall Comply with the following Standard/s</b>	AS 5081 AS/NZS 4020 (2018)		
<b>Notes</b>		 DN 50 - 300	
<b>Manufacturers</b>	<b>Bermad</b> (Series 720 and 770 – U)		
	<b>M.E. Mack 13 series</b> (PN 16) <b>Mack 33 Series</b> (PN 35)		
	<b>Singer</b>		


### 7.4 Swing Check

<b>Shall Comply with the following Standard/s</b>	AS 4794 AS/NZS 4020 (2018) WSA PS 264		
<b>Notes</b>	Resilient Seated DN 80 – 300 Metal Seated DN 80 - 300	 DN 80 - 300	
<b>Manufacturers</b>	<b>AVK</b>		
	<b>Sureflow (Viadux)</b>		

## 7.5 Air Release


<b>Shall Comply with the following Standard/s</b>	AS/NZS 4158 AS/NZS 4020 (2018) WSA 106 WSA PS 265		
<b>Notes</b>			
<b>Manufacturers</b>	<b>Amiad</b>		PN 16, PN 25
	<b>AVK</b>	Series 851	PN 16, PN 25
		Double Orifice	Glass Reinforced Ductile Iron
	<b>Bermad</b>		PN 16 PN 25
	<b>PIHA Vent Master</b>		PN 16
	<b>Ventomat</b>		RBX Series

## 7.6 Non-Return


<b>Shall Comply with the following Standard/s</b>	AS 4794 AS/NZS 4020 (2018) WSA PS 264		
<b>Notes</b>			
		DN 80 - 300	
<b>Manufacturer</b>	<b>Crane (Iplex)</b>		
	<b>Pentair Valves and Controls</b>		Keystone 86

## 7.7 Butterfly Valves


### 7.7.1 Wafer type

<b>Shall Comply with the following Standard/s</b>	AS 4795 WSA PS 263 AS/NZS 4020 (2018)	
<b>Notes</b>	Available with handle or gearbox (shown)	 <p>DN 50 - 350</p>
<b>Manufacturers</b>	<b>AVK</b>	<b>DIMAX</b>
	<b>Pentair Valves and Controls</b>	<b>Reece</b>
	<b>Ebro</b>	<b>Viadux</b>
	<b>Turnflo</b>	<b>Wouter Witzel EVS (AVK)</b>


### 7.7.2 Lugged Type

<b>Notes</b>	Available with handle or gearbox	 <p>DN 50 - 300</p>
<b>Manufacturers</b>	<b>AVK</b>	<b>Pentair Valves and Controls</b>
	<b>Ebro</b>	<b>DIMAX</b>
	<b>Reece</b>	<b>Viadux</b>


### 7.7.3 Double Flange Type

<b>Notes</b>	Available with handle or gearbox (shown)	 <p>DN 50 - 350</p>
<b>Manufacturers</b>	<b>AVK</b>	
	<b>Pentair Valves and Controls</b>	
	<b>Ebro</b>	
	<b>Wouter Witzel EVS (AVK)</b>	

## 7.8 Combination Air

<b>Shall Comply with the following Standard/s</b>	AS 4956 AS/NZS 4020 (2018) WSA 106 WSA PS 265	
<b>Notes</b>		 <p style="text-align: center;">DN 20 - 80</p>
<b>Manufacturer</b>	<b>Bermad</b>	Model C30


## 7.9 Valve Spindle Extensions

<b>Shall Comply with the following Standard/s</b>	WSA PS 262	
<b>Notes</b>	 <p style="text-align: center;">Length 150 - 1500</p>	
<b>Manufacturers</b>	<b>Iplex</b>	
	<b>Hadaway</b>	
	<b>Viadux</b>	
	<b>DAEMCO</b>	


## 8 Hydrants

### 8.1 Below Ground

#### 8.1.1 Fire Hydrants (Fire Plug)



<b>Shall Comply with the following Standard/s</b>	AS 2419 AS/NZS 4020 (2018) AS/NZS 4087	
<b>Notes</b>	For Drinking Water networks.  PN 35 Fire Plugs must be supplied and installed with an 8 bolt - B6 mating flange and have a PN 35 stainless steel identification tag and cable.	 <p style="text-align: center;">PN 16                      DN 80                      PN 35 - Series 29</p>
<b>Manufacturers</b>	<b>AVK</b>	PN 16 PN 35
	<b>Challenger Valves and Actuators</b>	PN 16
	<b>Sureflow (Viadux)</b>	PN 16 PN 35
	<b>Derwent Industries</b>	PN 16

#### 8.1.2 Air Release Hydrant (Spring Hydrant)

<b>Shall Comply with the following Standard/s</b>	AS 3952 AS/NZS 4020 (2018) AS/NZS 4087 WSA PS 267	
<b>Notes</b>	<b>Used for Non-Drinking Water applications only.</b> Claw to be solid purple colour (ref: Clause 1.1.2)	 <p style="text-align: center;">DN 80</p>
<b>Manufacturer</b>	<b>AVK</b>	PN 16
	<b>Derwent Industries</b>	PN 16
	<b>Sureflow (Viadux)</b>	PN 16

## 8.2 Above Ground

### 8.2.1 Pillar Type Key Operated, Firehose Thread Outlet

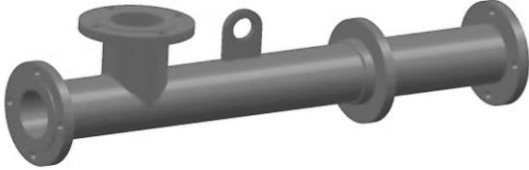
<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS 2419 AS/NZS 4087 AS/NZS 4020 (2018)</p>	
	<p>Light Weight Single Outlet</p>  <p>DN 63</p>	<p>Double Outlet</p>  <p>DN 63</p>
<p><b>Manufacturer</b></p>	<p><b>Viadux</b></p>	<p><b>Viadux</b></p>

## 9 Authorised Fabricators / Contractors

### 9.1 Polyethylene Fabrication

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4129 AS/NZS 4130 AS/NZS 4020 (2018)
<b>Notes</b>	<p>Only PE products catalogued in this Standard are approved for use for fabrication of PE Specials.</p> <p>That is, products shall be supplied by one of the listed Manufacturers, or his Agent.</p> <p>Items shall only be fabricated by welders who have attained the PMBWELD301B qualification.</p> <p>Upon completion, the Fabrication Company shall provide the SA Water Representative with a <b>Form</b>:</p> <p>Identifying every weld, with the date of the weld and name and id of the technician who undertook the weld.</p> <p>Itemising the materials used, i.e., item manufacturer &amp; description.</p> <p>Each weld shall be stamped with the welder ID.</p> <p>The <b>Form</b> shall be signed by an authorised officer of the Fabrication Company and shall be co-signed by the Construction Contractor installing the item.</p>

#### 9.1.1 Factory Fabrication of PE Pipe Specials

 <p>DN 100 – 375</p>							
<b>Manufacturer</b>	<table border="1" style="width: 100%; text-align: center;"> <tr><td><b>Bianco Precast</b></td></tr> <tr><td><b>Dalkeith Plastics Pty Ltd</b></td></tr> <tr><td><b>Fusion Weld Pty Ltd</b></td></tr> <tr><td><b>Poly Pipe Fabrications Pty Ltd</b></td></tr> <tr><td><b>Statewide Poly Pty Ltd</b></td></tr> <tr><td><b>Advanced Piping Systems</b></td></tr> </table>	<b>Bianco Precast</b>	<b>Dalkeith Plastics Pty Ltd</b>	<b>Fusion Weld Pty Ltd</b>	<b>Poly Pipe Fabrications Pty Ltd</b>	<b>Statewide Poly Pty Ltd</b>	<b>Advanced Piping Systems</b>
<b>Bianco Precast</b>							
<b>Dalkeith Plastics Pty Ltd</b>							
<b>Fusion Weld Pty Ltd</b>							
<b>Poly Pipe Fabrications Pty Ltd</b>							
<b>Statewide Poly Pty Ltd</b>							
<b>Advanced Piping Systems</b>							

Refer [4.1.1.6](#) for puddle flange extension pipes



## 9.1.2 Field Butt Welders for PE Pipework and Fittings


<b>Shall Comply with the following Standard/s</b>	<p>AS/NZS 4129 AS/NZS 4020 (2018)</p> <p>Only PE products catalogued in this Standard are approved for use for fabrication of PE Specials.</p> <p>That is, products shall be supplied by one of the listed Manufacturers, or their Agent.</p>
<b>Notes</b>	<p>Items shall only be fabricated by welders who have attained the PMBWELD301B qualification.</p> <p>Upon completion, the Fabrication Company shall provide the SA Water Representative with a <b>Form</b>:</p> <p>Identifying every weld, with the date of the weld and name and id of the technician who undertook the weld</p> <p>Itemising the materials used, i.e., item manufacturer &amp; description.</p> <p>Each weld shall be stamped with the welder id.</p> <p>The <b>Form</b> shall be signed by an authorised officer of the Fabrication Company and shall be co-signed by the Construction Contractor installing the item.</p>

<b>Authorised Contractors</b>	<b>Dalkeith Plastics Pty Ltd</b>
	<b>Statewide Poly Pty Ltd</b>
	<b>Poly Pipe Fabrications</b>
	<b>Advanced Piping Systems</b>

## 9.2 Steel Cement Lined (SCL) Fabrication

<b>Shall Comply with the following Standard/s</b>	<p>AS/NZS 1281 AS/NZS 1579 AS/NZS 4321 AS/NZS 4020 (2018) TS 04020</p>
<b>Notes</b>	<p>SCL fabricated products shall be manufactured from material obtained from an approved SCL supplier. Refer <b>3.4</b> for <b>SCL Product Manufacturer</b>.</p> <p>Items shall only be fabricated by welders who have attained a qualification appropriate for the required standard of welding.</p> <p>The <b>Form</b> shall be signed by an authorised officer of the Fabrication Company and shall be co-signed by the Construction Contractor installing the item.</p>

### 9.2.1 Factory Fabrication of SCL Specials

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS 1579 AS 1281 AS/NZS 4020 (2018) WSA PS 203 TS 0420</p>		
<p><b>Specification</b></p>	<p><b>Drinking Water</b></p>	<p>Steel pipe coated with sintakote fusion bonded polyethylene and lined with cement mortar</p>	
<p><b>Notes</b></p>	<p><b>Non-Drinking Water</b></p>	<p>NDW System pipes and fittings shall be wrapped in polyethylene sleeving coloured LILAC</p>	
<p><b>Manufacturer</b></p>	<p><b>Contract Engineering SA</b></p>		
	<p><b>Lincoln Engineering</b></p>		
	<p><b>Ferretti International</b></p>		
	<p><b>Smart Fabrication</b></p>		
	<p><b>Steel Mains Pty Ltd</b></p>		
	<p><b>Tatiara Industrial Repairs</b></p>		
	<p><b>Water Engineering Technologies</b></p>		



DN 100 - 375

Refer 0 for SCL Fittings

Refer 9.1.1 for Polyethylene

Refer 4.1.1.6 for puddle flange extension pipes

## 9.2.2 Field Welding of SCL Specials


<b>Shall Comply with the following Standard/s</b>	AS/NZS 1281 AS/NZS 1579 AS/NZS 4321 AS/NZS 4020 (2018) TS 0420
<b>Specification</b>	Items shall only be fabricated by welders who have attained a qualification appropriate for the required standard of welding.
<b>Notes</b>	SCL fabricated products shall be manufactured from material obtained from an approved SCL supplier. Refer <a href="#">3.4</a> Prior to commencement of any work, the Contractor shall provide the SA Water Representative with: <ul style="list-style-type: none"> <li>• Weld Procedures for approval</li> <li>• A copy of the Welders Qualifications.</li> <li>• An Inspection &amp; Test Plan for the required work.</li> <li>• NDT at a rate specified by SA Water</li> <li>• Weld Trace Maps and Details.</li> </ul> Consistent with TS 0420
<b>Authorised Contractors</b>	<b>Contract Engineering SA</b>
	<b>Lincoln Engineering</b>
	<b>N&amp;A Mobile Welding Services</b>
	<b>Ferretti International</b>
	<b>Smart Fabrication</b>
	<b>Tatiara Industrial Repairs</b>
	<b>Water Engineering Technologies</b>

## 9.3 Under Pressure Tapping Services


<b>Shall Comply with the following Standard/s</b>	WSA 03 – 2011 (version 3.2), Appendix C
<b>Notes</b>	Under pressure tapping is a system which allows an offtake to be provided from a 'live' reticulation or trunk main without the requirement to shut down the main. The service requires the provision of an authorised Stainless Steel flange offtake and an isolating valve. The installation shall be carried out in accordance with WSA 03 – 2011, Appendix C 'Under pressure cut-in connection to pressure pipes $\geq$ DN 80'.
<b>Authorised Contractors</b>	<b>Complete Tapping Services</b>
	<b>Tapping Systems Australia Pty Ltd</b>

## 10 Flange Accessories

### 10.1 Flange Jointing Kits

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4020 (2018) AS 4087 WSA 109 WSA PS 312	
<b>Notes</b>	High tensile steel Includes EPDM Gasket Plus Bolts, Nuts & Washers to suite flanges.  Fasteners Range: 316 stainless steel. Galvanised.	 <p style="text-align: center;">DN 50 - 375</p>
<b>Manufacturers</b>	PN16 Flanges	PN35 Flanges
	<b>Iplex</b>	<b>Iplex</b>
	<b>Viadux</b>	<b>Viadux</b>

### 10.2 Flange, Shut-off, With Lifting Handle

<b>Shall Comply with the following Standard/s</b>	AS/NZS 4020 (2018) WSA 109 WSA PS 312	
<b>Notes</b>	 <p style="text-align: center;">DN 100 - 375</p>	
<b>Manufacturer</b>	<b>Ferretti International</b>	

# 11 Access Cover Assemblies

<b>Shall Comply with the following Standard/s</b>	AS 3996 WSA PS 290
<b>Specification</b>	Trafficable – AS 3996, Class D Non-Trafficable – AS 3996, Class B



## 11.1 Trafficable Covers

### 11.1.1 Street Box (Type A)

#### 11.1.1.1 Chamber and Lid


<b>Notes</b>	<p><b>The two- piece lid shall be used in the Adelaide Metropolitan area.</b> Where used for <b>Non-Drinking Water</b> applications, the Cover shall be: Marked RECYCLED WATER or RECLAIMED WATER Coated or painted PURPLE</p> <p>514 Diameter 434 Opening</p>	<p>Full Height (Depth 420 mm)</p> 	<p>Half Height</p> 													
		<table border="1"> <tr> <td><b>Manufacturers</b></td> <td><b>Bianco (PCP)</b></td> <td><b>Bianco (PCP)</b></td> </tr> <tr> <td></td> <td><b>Civilmart</b></td> <td><b>Civilmart</b></td> </tr> <tr> <td></td> <td><b>Iplex</b></td> <td></td> </tr> <tr> <td></td> <td><b>Viadux</b></td> <td></td> </tr> <tr> <td></td> <td><b>Webforge</b></td> <td><b>Webforge</b></td> </tr> </table>	<b>Manufacturers</b>	<b>Bianco (PCP)</b>	<b>Bianco (PCP)</b>		<b>Civilmart</b>	<b>Civilmart</b>		<b>Iplex</b>			<b>Viadux</b>			<b>Webforge</b>
<b>Manufacturers</b>	<b>Bianco (PCP)</b>	<b>Bianco (PCP)</b>														
	<b>Civilmart</b>	<b>Civilmart</b>														
	<b>Iplex</b>															
	<b>Viadux</b>															
	<b>Webforge</b>	<b>Webforge</b>														

#### 11.1.1.2 Concrete Support Spacer


<b>Notes</b>	<p>Rectangular slab L W D 1200 800 170</p> <p>(DPTI or major roads)</p> <p>Circular ring W D 600 140</p>	 
	<b>Manufacturers</b>	<p><b>Bianco Precast</b></p> <p><b>Civilmart</b></p>

## 11.1.2 Isolating Valve Chamber / Heavy Duty (Type B)

### 11.1.2.1 Chamber and Lid

<b>Notes</b>	Not to be used in the Adelaide Metropolitan area. For use in paved roads. Use of this item is subject to SA Water Approval.	
<b>Manufacturers</b>	AVK Bianco Precast Civilmart	

### 11.1.2.2 Concrete Support Spacer

<b>Notes</b>	Concrete slab L W D 500 500 150	
<b>Manufacturer</b>	Bianco Precast Civilmart	

## 11.1.3 Topstone Assembly

### 11.1.3.1 Chamber and Lid

<b>Notes</b>	For use in unpaved roads only  Chamber 420 (Día) x 265 (Depth)	
<b>Manufacturer</b>	Bianco Precast	



### 11.1.3.2 Concrete Support Spacer

<b>Notes</b>	Spacer 420 x 150 (Depth)	
<b>Manufacturer</b>	Bianco Precast	

## 11.1.4 Water Meter (Cast Iron)


### 11.1.4.1 Meter Box, No 2

#### 11.1.4.1.1 Frame and cover

<b>Notes</b>	Cast Iron (CI) box and cover for DN 20 water meters.		
	Only to be used with SA Water approval.		
	Number 2.5 Box Standard.		
	Number 2 Box - Non-standard.	No. 2.5 (CI or Composite base)	No. 2 (CI box)
<b>Manufacturer</b>	<b>Bianco Precast</b>		

Note: Where the drinking water meter and non-drinking water meter are located in inground boxes, they shall be in separate boxes. The content of all inground boxes shall be clearly and permanently identified on the cover of the box.


#### 11.1.4.1.2 Concrete Support Spacer

<b>Notes</b>	No. 2	
	L    W    D	
	900 250 50	
	700 250 50	
<b>Manufacturer</b>	<b>Bianco Precast</b>	

## 11.2 Non-Trafficable Covers

### 11.2.1.1 Meter Box, No 3

#### 11.2.1.1.1 Frame and Lid


<b>Notes</b>	No. 3	
	For meters sized: DN25, DN40, DN50	
	Dimensions 633 x 350	
<b>Manufacturer</b>	<b>Bianco Precast</b>	

### 11.2.1.1.2 Concrete Support & Spacer

<b>Notes</b>	No. 3		
		Support Ring Spacer	Chamber Holder
<b>Manufacturers</b>		<b>Bianco Precast</b>	<b>Bianco Precast</b>
		<b>Civilmart</b>	<b>Civilmart</b>

## 11.2.2 Cable Access Cover

### 11.2.2.1 Chamber and Lid

<b>Notes</b>	Covers for:  ELECTRICAL CABLE & CATHODIC PROTECTION	
<b>Manufacturer</b>		<b>Bianco Precast</b>

### 11.2.2.2 Concrete Support Spacer

Refer 11.1.4.1.2

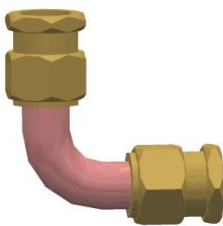
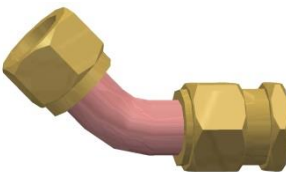


## 12 Copper /Brass Fittings

### 12.1 Drinking Water Copper Parts



<b>Shall Comply with the following Standard/s</b>	AS 1432 AS 2345 AS 3688 AS/NZS 4020 (2018)
<b>Notes</b>	PN 16

#### 12.1.1 Elbows


Elbow 90° With Nuts 	Elbow 45° With Nuts 
DN 25 - 50	DN 25 - 50
<b>Manufacturers</b>	
<b>Autotherm</b>	<b>Autotherm</b>

#### 12.1.2 Assemblies



##### 12.1.2.1 Riser Inlet Assembly

With Right Angle Ball Valve (For PE Water Connections) 	Riser Inlet Length (300 & 530) 
DN 20 x (300 & 530)	DN 25, 40, 50
<b>Manufacturers</b>	
<b>Autotherm</b>	<b>Wadham Brothers</b>
<b>Autotherm</b>	

### 12.1.2.2 Riser Inlet (Without Valve)

Riser Inlet Length (300 & 530)	
	
DN 25, 40 & 50	
<b>Manufacturers</b>	
<b>Autotherm</b>	<b>Wadham Brothers</b>

### 12.1.2.3 Riser Outlet

(Female Male) 	(Male Male) 
DN 20 x (150 & 267) DN 25 x (267), DN 32, 40 x (267)	DN 50 x 267
<b>Manufacturers</b>	
<b>Autotherm</b>	<b>Wadham Brothers</b>
<b>Autotherm</b>	<b>Wadham Brothers</b>
<b>Autotherm</b>	
<b>Autotherm</b>	

### 12.1.2.4 20 mm Meter Manifold



<b>Notes</b>	Maximum of offtakes which may be connected to the water service (by coupling manifolds together): DN 20: max. 4 from DN 25 manifold DN 20: max.12 from DN 40 manifold DN 25: max. 5 from DN 50 manifold	
<b>Connector/offtake</b>	DN 25 Stem	Options for 2, 3 or 4 offtakes
	DN 40 Stem	Options for 3, 4, 5 or 6 offtakes
	DN 50 Stem	5 offtakes
<b>Manufacturer</b>	<b>Autotherm</b>	

### 12.1.2.5 Copper Compression Fittings

<b>Notes</b>	DN 15 – 100  Only to be fitted, using approved manufacturers press gun.		
<b>Manufacturers</b>	<b>Viega ProPress Copper Alloy Fittings</b>		
	<b>Reece B-Press</b>		

## 12.2 Non-Drinking Water Copper Parts

<b>Shall Comply with the following Standard/s</b>	AS 1432 AS 2345 AS 3688 AS/NZS 4020 (2018)
<b>Notes</b>	<b>Colour requirements to comply with clause 1.1.2</b>

### 12.2.1 Assemblies



#### 12.2.1.1 Riser Inlet Assembly (with Ball Valve)

DN 20 x (300 & 530)	DN 25, 40 & 50 x (300 & 530)
<b>Manufacturers</b>	
<b>Autotherm</b>	<b>Autotherm</b>

#### 12.2.1.2 Riser Inlet (without Ball Valve)


DN 25, 40 & 50 (300 & 530)
<b>Manufacturers</b>
<b>Autotherm</b>

**12.2.1.3 Riser Outlet**


<p>(Female Male)</p> 	<p>(Male Male)</p> 
<p>DN 20 x (150 &amp; 300) DN 25 x 267 DN 32, 40 x 267</p>	<p>DN 50 x 267 (Refer 12.3.4 for Flange Screwed)</p>
<p><b>Manufacturers</b></p>	
<p><b>Autotherm</b></p>	<p><b>Autotherm</b></p>

## 12.3 Brass


### 12.3.1 Main Cock

<b>Shall Comply with the following Standard/s</b>		AS 3688 AS/NZS 4020 (2018)
<b>Notes</b>	For tube DN 20 - 40	Main Cock 
<b>Manufacturer</b>	<b>Autotherm</b>	



### 12.3.2 Adaptor – End Connector (For Polyethylene Water Connections)

<b>Shall Comply with the following Standard/s</b>		AS 3688 AS/NZS 4020 (2018)
		
<b>Notes</b>	3/4" BSP F – 25 mm Poly Tube. 3/4" BSP M – 25 mm Poly Tube. (20 nom Main Cock – 25 Poly Tube.	Brass 3/4" BSP M – 25 Poly Tube
<b>Manufacturer</b>	<b>Autotherm</b>	<b>Tita</b>


### 12.3.3 Adaptor – Insulated (For Copper Water Connections)

<b>Shall Comply with the following Standard/s</b>		AS 3688 AS/NZS 4020 (2018)
		
<b>Notes</b>	3/4" BSP F – 20 mm Copper 3/4" BSP F – 25 mm Copper 2" BSP F – 2" BSP M	
<b>Manufacturers</b>	<b>Autotherm</b>	
	<b>RMC</b>	



### 12.3.4 Loose Ring Joint & Flange Screwed (For DN 50 Water Meter)

<b>Shall Comply with the following Standard/s</b>		AS/NZS 4087 AS/NZS 4020 (2018)	
<b>Notes</b>	DN 50 FBE Coated (BLUE) & Includes Bolt & Gasket Kit	Loose Ring Joint	Flange Screwed
			
<b>Manufacturers</b>		Autotherm	

### 12.3.5 Nut Union

<b>Shall Comply with the following Standard/s</b>		AS/NZS 4087 AS/NZS 4020 (2018)	
<b>Notes</b>	DN 32 – 57		
		<b>Manufacturers</b>	
		Autotherm	
		Wadham	

### 12.3.6 Tailpiece Union

<b>Shall Comply with the following Standard/s</b>		AS/NZS 4087 AS/NZS 4020 (2018)	
<b>Notes</b>		Male BSP	Meter Inlet & Outlet
			
		DN 25	DN 32 & 40
<b>Manufacturer</b>		Autotherm	

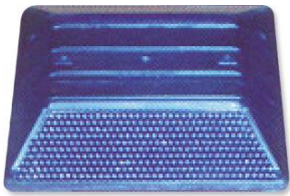
## 13 Signs & Markers

### 13.1 Metal Markers

		
<b>Markings</b>	Fireplug Scour Stop Valve Recycled Water Stop Valve	Fireplug SV
<b>Manufacturers</b>		<b>Delnorth</b>
	<b>Ferretti International</b>	
	<b>Peninsular Castings</b>	
		<b>Viadux</b>

### 13.2 Pavement Markers


#### 13.2.1 Retroreflective Raised Pavement Markers (RRPM)

	
<b>Manufacturer</b>	<b>Viadux</b>




# 14 Tape

## 14.1 Underground Warning Tape

<p><b>Shall Comply with the following Standard/s</b></p>	<p>AS/NZS 2648.1 WSA PS 318 WSA PS 319</p>	
<p><b>Notes</b></p>	<p><b>Non-Drinking</b> Water tapes are to be PURPLE. 'WARNING: RESTRAINED PIPELINE TYTON - LOK FITTINGS' – Non-Detectable. 'CAUTION BURIED WATER MAIN BELOW' - Detectable. 'CAUTION RECYCLED WATER MAIN WATER MAIN BELOW' – Detectable.</p>	
<p><b>Manufacturer</b></p>	<p><b>Viadux</b> <b>Tapex</b></p>	

## 14.2 Corrosion Protection System

<p><b>Shall Comply with the following Standard</b></p>	<p>AS 4822</p>	
<p><b>Notes</b></p>	<p>4 – Step Protection Specification: <b>Primer</b> <b>Mastic</b> <b>Petrolatum Tape</b> <b>PE Tape</b> Individuals intending to use one of the petrolatum 4 – step systems, must have undertaken formal training in the specific system they intend to use (i.e., Denso or UCC)</p>	
<p><b>Manufacturers</b></p>	<p><b>Denso</b> <b>Universal Corrosion Coatings</b></p>	