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Hunter Water Corporation A.B.N. 46 228 513 446
Standard Technical Specification for:

**VALVES, HYDRANTS AND ASSOCIATED
COMPONENTS**

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AMENDMENTS

New Clause	Old Clause	Amendment
AMENDMENTS TO THE MARCH 2003 VERSION		
3.1	3.1	Exception to limit on metal seated valves added
AMENDMENTS TO THE NOVEMBER 2002 VERSION		
2.1		Clause "Approved Products" added
2.3	2.2	Thermal bonded costing required for all size valves not just up to DN 500.
2.4	2.3	Testing requirements simplified to Australian Standard only.
3.1	3.1	Reference to testing deleted.
	3.1(a)	Requirement for small valves to be resilient seated and large valves to be metal seated dropped
3.1(a) & (b)		References to Australian Standards for resilient and metal seated valves added
3.1(h)	3.1(g)	All valves to be class 16 unless specified otherwise
3.1(i)	3.1(h)	No grey cast iron irrespective of size
3.2	3.2	Reference to testing deleted. "sluice valves" corrected to "air valves"
3.3	3.3	Reference to testing deleted. Reference to Australian Standard added.
3.4	3.4	First paragraph replaced with reference to SP27
3.5	3.5	Reference to AS2638 dropped.
3.6	3.6	Reference to testing dropped.
AMENDMENTS TO THE JUNE 1997 VERSION		
All	All	General formatting, rewording and referencing changes to improve clarity but no change to technical requirements

1. GENERAL

1.1 Scope

This Standard Technical Specification details requirements for the manufacture, testing and supply of Ductile Iron Sluice Valves, Non-Return Valves, Spring Hydrant Valves, Air Valves, Hydrant Control Valves, Bronze Gate Valves and associated components up to nominal size DN 600 for water supply and wastewater applications.

Sluice Valves and Non-Return Valves will be suitable for use with both potable water and wastewater whilst all other valves and fittings will be used solely with potable water.

1.2 Interpretation

Headings are for the convenience of the reader and shall not be used in the interpretation of this Standard Technical Specification.

Unless the context requires otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by the Principal or Purchaser.

2. GENERAL REQUIREMENTS

2.1 Approved Products

All components installed in Hunter Water Corporation water and sewer systems shall be approved products made by approved manufacturers as shown on the Hunter Water Corporation web site

(www.hunterwater.com.au/productsmanufacturers.asp)

Products not currently approved by Hunter Water Corporation may be considered for approval if the product has been appraised and recommended by the Water Services Association of Australia (WSAA) or a StandardsMark Licence has been issued by SAI Global, a division of standards Australia (previously known as Quality Assurance Services).

2.2 Workmanship and Finish

Castings shall in all respects be free from laps, surface and sub-surface defects. Sub-surface porosity shall be minimised so as to produce no "gassing" when heated for the protective coating process. Metal impingement of the core face should be eliminated. External and internal surfaces shall be clean and smooth. Filling of casting defects is not permissible.

Components made by processes other than casting shall be sound and solid without laminations.

All components shall be interchangeable between units.

2.3 Protective Coatings

For all valves, coat all internal and external surfaces with a thermal bonded coating in compliance with Section SP30 of the Water Services Specification (WS-Spec). WS-Spec is available from Standards Australia.

Use corrosion resistant metallic material for all components that have surfaces which cannot be coated and tested. Components manufactured from corrosion resistant material may remain uncoated. Fit flat washers under all bolt heads and nuts to prevent damage to the applied protective coating.

2.4 Testing

Test all valves in accordance with the relevant Australian Standard.

- AS 2638.1-2002 : Gate valves for waterworks purposes - Metal seated
- AS 2638.2-2002 : Gate valves for waterworks purposes - Resilient seated

- AS 3952-2002 : Water supply - Spring hydrant valve for waterworks purposes
- AS 1628-1999 : Water supply - Metallic gate, globe and non-return valves

2.5 Handling and Protection

Exercise all care necessary to prevent coating damage during handling, assembling and testing of completed valves.

Individually protect all valves up to DN 200 with cardboard sleeves or boxes to prevent damage during transport and handling. Secure larger valves with suitable cardboard and plywood dividers onto pallets for transport and handling.

Valves with damaged protective coatings are not accepted.

3. SPECIFIC REQUIREMENTS

3.1 Sluice Valves

Manufacture sluice valves in accordance with the following features and properties.

- (a) metal seated valves complying with AS 2638.1 Gate valves for waterworks purposes - Metal seated and Section SP20 of the Water Services Specification (WS-Spec), except that metal seated valves less than DN 600 shall be acceptable when specified for high pressure situations contrary to table 5.4 of SP20.
- (b) resilient seated valves complying with AS 2638.2 Gate valves for waterworks purposes - Resilient seated and Section SP21 of the Water Services Specification (WS-Spec).
- (c) suitable for manual operation by a removable key;
- (d) a 3:1 open spur type reduction gearing for DN 600 valves;
- (e) valves close when the stem is turned in a clockwise direction, looking on the top of the valve;
- (f) suitable for the fitting of an extension spindle or bevel gearing;
- (g) flanged ends with flanges and drilling in accordance with AS 4087 but if socket/socket ends are specified, the socket is to suit ductile iron pressure pipe manufactured in accordance with AS 2280;
- (h) valves to be Class 16 unless otherwise specified.
- (i) do not use grey cast iron for valves
- (j) valve stems of stainless steel to AS 2837 Grade 431 or 316;
- (k) wedge nut of gunmetal to AS 1565 Grade C83600;
- (l) copper based alloys conform to the dezincification requirements of AS 2345;
- (m) internal and external fastenings of stainless steel to AS 2837 Grade 316 passivated in accordance with HWC Standard Technical STS100 or high tensile bolts fully encapsulated to provide isolation from both internal and external environments;
- (n) stem caps to the main stem and, for geared valves, to the reduction input shaft;
- (o) for resilient seated valves, fully encapsulated wedges with thoroughly bonded rubber, except for wedges manufactured from gunmetal or brass where all sealing surfaces shall have a thoroughly bonded rubber coating while the remainder of the wedge may remain uncoated.

3.2 Non Return Valves

Manufacture non return valves in accordance with Section SP25 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices and with the following features and properties. WS-Spec is available from Standards Australia.

- (a) valves to be Class 14 or Class 16;
- (b) spheroidal graphite cast iron to AS 1831 Grade 500-7 or Grade 400-12 in lieu of grey cast iron wherever possible;
- (c) hinge pins and hinge to disc connection of stainless steel to AS 2837 Grade 431 or Grade 316;
- (d) disc facing ring and body seat ring of gunmetal to AS 1565 Grade C83600 or stainless steel to AS 2837 Grade 316;
- (e) copper based alloys conform to the dezincification requirements of AS 2345;
- (f) internal and external fastenings of stainless steel to AS 2837 Grade 316 passivated in accordance with HWC Standard Technical Specification 100;
- (g) extended hinge pin.

3.3 Spring Hydrant Valves

Manufacture spring hydrant valves in accordance with AS 3952-2002 : Water supply - Spring hydrant valves for waterworks purposes and Section SP28 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices and with the following features and properties. WS-Spec is available from Standards Australia.

- (a) flanges DN 80;
- (b) valves to be Class 16;
- (c) do not use grey cast iron;
- (d) copper based alloys conform to the dezincification requirements of AS 2345;
- (e) internal and external fastenings of stainless steel to AS 2837 Grade 316 passivated in accordance with HWC Standard Technical Specification STS100.

3.4 Air Valves

Manufacture air valves in accordance with Section SP27 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices and with the following features and properties. WS-Spec is available from Standards Australia.

- (a) valves to be class 14 or Class 16;
- (b) spheroidal graphite cast iron to AS 1831 Grade 500-7 or Grade 400-12 in lieu of grey cast iron wherever possible;
- (c) valve stem of stainless steel to AS 2837 Grade 431 or 316;
- (d) stem nut, seat and valve of gunmetal to AS 1565 Grade C83600 or Grade C92410;
- (e) copper based alloys conform to the dezincification requirements of AS 2345;
- (f) internal and external fastenings of stainless steel to AS 2837 Grade 316 passivated in accordance with HWC Standard Technical Specification STS100;

- (g) flanges to AS 4087.

3.5 Hydrant Control Valves

Manufacture hydrant control valves with components manufactured from materials conforming with requirements nominated for similar valve components in Sections SP25 and SP28 of the Water Services Specification (WS-Spec) and as indicated for Hunter Water Corporation in the Table of Water Agency Practices and with the following features and properties. WS-Spec is available from Standards Australia.

- (a) valves to be class 16;
- (b) body, cover and stem cap of spheroidal graphite cast iron to AS 1831 Grade 500-7 or Grade 400-12;
- (c) valve stem of stainless steel to AS 2837 Grade 431 or 316;
- (d) stem nut, seat and valve of gunmetal to AS 1565 Grade C83600 or Grade C92410;
- (e) copper based alloys conform to the dezincification requirements of AS 2345;
- (f) internal and external fastenings of stainless steel to AS 2837 Grade 316 passivated in accordance with HWC Standard Technical Specification STS100;
- (g) flanges to AS 4087.

3.6 Bronze Gate Valves

Manufacture copper alloy (bronze) gate valves in accordance with AS 1628-1999 : Water supply - Metallic gate, globe and non-return valves.

[END OF STS103]