

Part B: Standards and Requirements

B1. Introduction

B1.1 This part of the document provides the stipulated standards and test requirements for plumbing products including:-

- Pipes;
- Fittings (including but not limited to pipe fittings, valves, taps and mixers, etc.);
- Products of prescribed Water Efficiency Labelling Scheme (WELS) type; and
- Other materials

B1.2 For avoidance of doubt, this enhanced Technical Requirements shall be read in conjunction with Part A of current version “Technical Requirements for Plumbing Works in Buildings”.

B2. General Requirements for Pipes, Fittings and Their Components to be Used in Inside Service or Fire Service

B2.1 Plumbing products as mentioned in Section B1.1 and their components for use in Inside Service or Fire Service shall comply with the stipulated standards/requirements as stipulated in this part of the document.

B2.2 Plumbing products complying with stipulated standards, tests and other requirements under Sections B4 to B8 are deemed to be accepted by producing certification or test reports confirming their compliance with the relevant stipulated standards in this document from either (a) the British Standards Institution Kitemark Certificate, (b1) the U.K. Water Regulations Advisory Scheme (WRAS), (b2) Kiwa UK Water Regulation 4 Product Approval Scheme (KUKreg4), (b3) NSF REG4 Certification Scheme or (c) accredited laboratories acceptable to the WA. For (a), (b1), (b2) and (b3), the pipes and fittings shall be tested against the relevant stipulated standards in this document. For (c), the laboratories accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) under the following sub-categories are acceptable:-

Category	Sub-category
Construction Materials	(i) Metallic materials / Steels
	(ii) Pipes and Fittings
	(iii) Showers
	(iv) Tapwares
	(v) Valves

B2.3 In general, suitable materials for pipe and fittings for inside service and fire service are tabulated in Table B2.3.1, B2.3.2 and B2.3.3 below:

Table B2.3.1 Materials for fresh water and salt water inside service at different locations

Pipe/ Pipe fitting material	Fresh Water Inside Service		Salt Water Inside Service ⁽¹⁾
	Cold Water	Hot Water	
Copper	✓	✓	✗
Ductile iron (with internal coating)	✓	✓	✓
Polyethylene (PE)	✓		✓ ⁽²⁾
Polyethylene-cross-linked (PE-X)	✓	✓	✗
Plastic lined steel (PVC-C lining)	✓	✗	✗
Plastic lined steel (PVC-U/ PE lining)	✓	✗	✗
Polyvinyl chloride - chlorinated (PVC-C)	✓	✓	✗
Polyvinyl chloride - unplasticized (PVC-U)	✓		✓
Stainless steel	✓	✓	✗

✓ : Suitable for use when the relevant standards are complied with in general

✗ : Not suitable for use in general

(1) : Suitable location(s) for installation may refer to fresh water inside service

(2) : When installed in exposed condition, black pipe and pipe fittings shall be used.

Table B2.3.2 Materials for fire service at different locations

Pipe/ Pipe fitting material	Fire service	
	Fresh water	Salt water
Copper	✓	✗
Ductile iron	✓	✓
Galvanized steel	✓	✗
Stainless steel	✓	✗
Polyvinyl chloride - chlorinated (PVC-C)	✗	✓

✓ : Suitable for use when the relevant standards are complied with in general

✗ : Not suitable for use in general

Table B2.3.3 Fitting materials for inside service and fire service

Valve/Strainer component materials	Fresh water inside service		Salt water inside service	Fire service	
	Cold water	Hot water		Fresh water	Salt water
<i>A. Body and bonnet</i>					
Cast iron (with internal coating)*	✓	✓	✓	✓	✓
Copper alloy – brass**	✓	✓	✗	✓	✗
Copper alloy – dezincification resistant (DZR) brass (e.g. CW602N/CZ132)	✓	✓	✗	✓	✗
Copper alloy – bronze	✓	✓	✓	✓	✓
Ductile iron (with internal coating)*	✓	✓	✓	✓	✓
Polyethylene (PE)	✓	✗	✓	✗	✗
Polyvinyl chloride - unplasticized (PVC-U)	✗	✗	✓	✗	✗
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✗	✓	✗
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>B. Stem/ shaft</i>					
Copper alloy – brass**	✓	✓	✗	✓	✗
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓
Copper alloy – bronze	✓	✓	✓	✓	✓
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Stainless steel (Grade 431)	✓	N/A	✗	✓	✗
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
Polyvinyl chloride - unplasticized (PVC-U)	✗	✗	✓	✗	✗
<i>C. Wedge (in gate valves etc.)</i>					
Ductile iron (with coating)*	✓	✓	✓	✓	✓
Resilient material to BS EN 681-1, Type WA (elastomeric seals)*	✓	✓	✓	✓	✓
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>D. Seat and disc</i>					
Copper alloy – brass**	✓	✓	✓	✓	✓
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓

Table B2.3.3 Fitting materials for inside service and fire service

Valve/Strainer component materials	Fresh water inside service		Salt water inside service	Fire service	
	Cold water	Hot water		Fresh water	Salt water
Copper alloy – bronze	✓	✓	✓	✓	✓
Polyvinyl chloride - unplasticized (PVC-U)	✗	✗	✓	✗	✗
Resilient material to BS EN 681-1, Type WA (elastomeric seals)*	✓	✓	✓	✓	✓
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>E. Bolt, Nut & Washer</i>					
Steel	✓	✓	✗	✓	✗
Stainless steel (Grade 304)	✓	✓	✗***	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>F. Cap (disc)/ spring (non-return valve)</i>					
Copper alloy	✓	✓	✓	✓	✓
Ductile iron (with coating)*	✓	✓	✓	✓	✓
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>G. Screen (strainers)</i>					
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓
<i>H. Drain plug (strainers)</i>					
Copper alloy – brass**	✓	✓	✓	✓	✓
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓
Copper alloy – bronze	✓	✓	✓	✓	✓
Malleable iron (with coating)*	✓	✓	✓	✓	✓
<i>I. Lever (ball float valve)</i>					
Stainless steel (Grade 304)	✓	✓	✗	✓	✗
Stainless steel (Grade 316)	✓	✓	✓	✓	✓
Duplex Stainless steel (Grade 1.4462 or superior)	✓	✓	✓	✓	✓

Table B2.3.3 Fitting materials for inside service and fire service

Valve/Strainer component materials	Fresh water inside service		Salt water inside service	Fire service	
	Cold water	Hot water		Fresh water	Salt water
Copper alloy – brass**	✓	✓	✓	✓	✓
Copper alloy – dezincification resistant (DZR) brass	✓	✓	✓	✓	✓
Copper alloy – bronze	✓	✓	✓	✓	✓

* Coating material e.g. epoxy shall comply with BS 6920:2014 for respective cold water and/or hot water applications.

** Except brass containing zinc of more than 15% by mass as it will be susceptible to dezincification.

*** For Bolt, Nut & Washer that do not have any contact with salt water, the material can be Stainless Steel (Grade 304)

B2.4 The leachability of metals of all metallic materials and products used in the fresh water inside service shall not exceed the corresponding limits in Table B2.4.1 when tested according to the tests specified in Table B2.4.2. Table 2 of AS/NZS 4020:2018 shall be replaced by Table B2.4.1. The scaling factor for plumbing products as specified in Table B2.4.2 shall be applied.

Table B2.4.1

<u>Element</u>	<u>Maximum allowable concentration, mg/L</u>
Antimony (Sb)	0.02
Arsenic (As)	0.01
Barium (Ba)	1.3
Boron (B)	2.4
Cadmium (Cd)	0.003
Chromium (Cr)	0.05
Copper (Cu)	2
Lead (Pb)	0.01
Manganese (Mn)	0.08
Mercury (Hg)	0.006
Nickel (Ni)	0.07
Selenium (Se)	0.04

Table B2.4.2

<u>Metallic Plumbing Product</u>	<u>Test in AS/NZS 4020:2018</u>	<u>Scaling Factor</u>
Pipe	Appendix H	1.0
Pipe fitting	Appendix H	0.05
Valves (Gate, Globe, Ball & Angle)	Appendix H	0.01
Butterfly valve	Appendix H	0.05
Non-return/Check valve, Pressure reducing valve	Appendix H	0.01 for DN=>100 0.05 for DN<100
Strainer	Appendix H	0.05
Expansion/Settlement/Flexible Joint	Appendix H	0.01
Tap/Mixer	Appendix H and I	Not Applicable

- B2.5 The lead content of the alloy for manufacturing plumbing materials and products intended for use in the fresh water inside service shall not exceed 3.5%.
- B2.6 Section B2.4 shall not apply to soldering and brazing alloys. The lead and antimony of all soldering alloys shall not exceed 0.07% and 0.1% by mass respectively. The cadmium of all brazing alloys shall not exceed 0.01% by mass.
- B2.7 For all plumbing products except stainless steel/copper pipe and stainless steel/copper/copper alloy pipe fittings, full chemical composition test is not required. It should be noted that compliance to Section B2.5 could be demonstrated by specifying and declaring the grade of metallic components in accordance with relevant national/international standards in the test reports or other supporting documents mentioned in Section B2.2 and a chemical composition test for testing lead content only shall be required to prove its compliance to Section B2.5.
- B2.8 For stainless steel/copper pipe and stainless steel/copper/copper alloy pipe fittings, particular requirements on chemical composition shall be followed under Note C1 and S1 under Section B4.

- B2.9 Except particular requirements on chemical composition, all other physical requirements listed under Sections B4 to B8 are deemed to comply if it could be proved in the test reports or other supporting documents mentioned in Section B2.2 confirming their compliance with the relevant stipulated standards under Sections B4 to B8. Compliance of physical requirements by other national/international standards are also deemed to be accepted if compliance to the physical requirements and tests in the stipulated standards is demonstrated by the supporting document mentioned in Section B2.2.
- B2.10 All polymeric materials and products used in the fresh water inside service must comply with all relevant requirements in BS 6920-1:2014, BS 6920-2.1:2014, BS 6920-2.2.1:2000+A3:2014, BS 6920-2.2.2:2000+A1:2014, BS 6920-2.2.3:2000+A2:2014, BS 6920-2.3:2000+A1:2014, BS 6920-2.4:2000+A1:2014, BS 6920-2.5:2000+A2:2014, BS 6920-2.6:2000+A2:2014 and BS 6920-3:2000. Table 1 of BS 6920-1:2014 shall be replaced by Table B2.4.1. Alternatively, polymeric materials and products used in the fresh water inside service comply with relevant requirements in AS/NZS 4020:2018 will also be accepted. For the passing requirement of the metal leaching test, Table 2 of AS/NZS 4020:2018 shall be replaced by Table B2.4.1. For testing against AS/NZS 4020:2018, the scaling factor for plumbing products as specified in Table B2.4.2 shall be applied.
- B2.11 Plumbing materials, intended for use in the inside service conveying cold water, shall be suitable for use up to the maximum water temperature of 35 °C and tested to this concerned temperature.
- B2.12 Plumbing materials shall only be installed in the inside service conveying drinking water with a water temperature not exceeding the certified temperature.
- B2.13 The details below shall be clearly shown in all pipes, fittings and their components where applicable:-
- (a) Body marking showing manufacturer's logo and/or brand name on product body;
 - (b) Marking showing the Industrial Standard(s), e.g. BS EN 1057 for copper pipes; and
 - (c) Marking showing nominal size and direction of flow.
- B2.14 Upon the WA's request, additional supporting information/document shall be provided to demonstrate compliance to the stipulated requirements in this part of

the document.

B3. Review of Standards and Requirements

B3.1 The WA regularly reviews the standards and requirements stipulated for pipes, fittings and their components to allow for innovation and changes in technology and to ensure relevance.

B3.2 If standards for any pipes, fittings or their components are not stipulated in this part of the document, the WA shall be approached to confirm the necessary standards and requirements for compliance.

B4. Pipes and Pipe Fittings

1) Copper Pipes and Fittings - Copper Pipes

Stipulated Standard	Test item(s)
BS EN 1057:2006+A1:2010 Copper and copper alloys – Seamless, round copper tubes for water and gas in sanitary and heating applications	a) Dimension - (Clause 7.3) b) Hydrostatic test - (Clause 10.9 and Annex C2) c) Tensile test - (Clause 10.2) d) Hardness test - (Clause 10.3) e) Bending test - (Clause 10.6) f) Drift expanding test - (Clause 10.7) g) Carbon Content test - (Clause 10.4) / Carbon film test - (Clause 10.5) h) Chemical composition - (Clause 7.1 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	i) Metals (Refer to B2.4 for details)
Lead content	j) Refer to B2.5 for details

2) Copper Pipes and Fittings - Copper Pipes

Stipulated Standard	Test item(s)
BS EN 12449:2016 Copper and copper alloys. Seamless, round tubes for general purposes	a) Dimension - (Clause 6.3) b) Hydrostatic test - (Clause 8.5) c) Tensile test - (Clause 8.2) d) Hardness test - (Clause 8.3) e) Drift expanding test - (Clause 8.4.1) f) Chemical composition - (Clause 6.1 Table 1 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	g) Metals (Refer to B2.4 for details)
Lead content	h) Refer to B2.5 for details

3) Copper Pipes and Fittings - Copper and Copper Alloy Fittings (Ends for Capillary Soldering or Capillary Brazing)

Stipulated Standard	Test item(s)
BS EN 1254-1:1998 Fittings with ends for capillary soldering or capillary brazing to copper tubes	a) Dimension - (Clause 4.3) b) Leaktightness under internal hydrostatic pressure - (Clause 4.6.1) c) Resistance to stress corrosion - (Clause 4.6.2) d) Carbon content test - (Clause 4.5.2) / Carbon film test - (Clause 4.5.2) e) Chemical composition - (Clause 4.2 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	f) Metals (Refer to B2.4 for details)
Lead content	g) Refer to B2.5 for details

4) Copper Pipes and Fittings - Copper and Copper Alloy Fittings (Compression Ends)

Stipulated Standard	Test item(s)
BS EN 1254-2:1998 Fittings with compression ends for uses with copper tubes	a) Dimension - (Clause 4.3) b) Leaktightness under internal hydrostatic pressure - (Clause 4.6.1) c) Resistance to stress corrosion - (Clause 4.6.4) d) Resistance to pull-out - (Clause 4.6.2) e) Leaktightness under internal hydrostatic pressure whilst subjected to bending - (Clause 4.6.3) f) Chemical composition - (Clause 4.2 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	g) Metals (Refer to B2.4 for details)
Lead content	h) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	i) For components such as seal ring, where applicable j) Refer to B2.10 – B2.12 for details

5) Copper Pipes and Fittings - Copper and Copper Alloy Fittings (Short Ends for Capillary Brazing)

Stipulated Standard	Test item(s)
BS EN 1254-5:1998 Fittings with short ends for capillary brazing to copper tubes	a) Dimension - (Clause 4.3) b) Leaktightness under internal hydrostatic pressure - (Clause 4.6.1) c) Resistance to stress corrosion - (Clause 4.6.2) d) Carbon content test - (Clause 4.5.2) / Carbon film test - (Clause 4.5.2) e) Chemical composition - (Clause 4.2 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	f) Metals (Refer to B2.4 for details)
Lead content	g) Refer to B2.5 for details

6) Copper Pipes and Fittings - Copper and Copper Alloy Fittings (Push-fit Ends)

Stipulated Standard	Test item(s)
BS EN 1254-6:2012 Copper and copper alloys. Plumbing fittings. Fittings with push-fit ends	a) Dimension - (Clause 4.3) b) Leaktightness under internal hydrostatic pressure - (Clause 5.1.4) c) Resistance to stress corrosion - (Clause 5.1.14) d) Resistance to pull-out - (Clause 5.1.5) e) Leaktightness under internal hydrostatic pressure whilst subjected to bending - (Clause 5.1.10) f) Chemical composition - (Clause 4.2 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	g) Metals (Refer to B2.4 for details)
Lead content	h) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	i) For components such as seal ring, where applicable j) Refer to B2.10 – B2.12 for details

7) Copper Pipes and Fittings - Copper and Copper Alloy Fittings (Press Ends)

Stipulated Standard	Test item(s)
BS 8537:2010 Copper and copper alloys Plumbing fittings - Specification for press ends of plumbing fittings for use with metallic tubes	a) Dimension - (Clause 6.2) b) Leaktightness under internal hydrostatic pressure - (Clause 8.4.1) c) Resistance to pull-out - (Clause 8.4.2) d) Resistance of joints with tubes to pressure cycling - (Clause 8.4.5) e) Resistance of joints and tube to vibration - (Clause 8.4.7) f) Resistance of joints to static flexural force - (Clause 8.4.8) g) Resistance to stress corrosion - (Clause 8.4.10) h) Chemical composition - (Clause 6.1 and Note C1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	i) Metals (Refer to B2.4 for details)
Lead content	j) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	k) For components such as seal ring, where applicable l) Refer to B2.10 – B2.12 for details

Note C1:-

The material of copper pipe and pipe fittings shall conform to the corresponding material requirement in the Stipulated Standards.

The material of copper alloy pipe fittings shall conform to the corresponding material requirement in the Stipulated Standards. If the grade of copper alloy is not specified in the Stipulated Standard, copper alloy from other relevant national/international standards can be accepted, provided that the products manufactured from them comply with other requirements and test items of the Stipulated Standard.

For avoidance of doubt, chemical composition test is required for all copper/copper alloy pipe and pipe fittings to ensure the compliance.

8) Stainless Steel Pipes and Fittings - Stainless Steel Pipes

Stipulated Standard	Test item(s)
BS EN 10312:2002 Welded stainless steel tubes for the conveyance of water and other aqueous liquids – Technical delivery conditions	a) Dimension - (Clause 8.8) b) Hydrostatic test - (Clause 11.4.3) c) Tensile test - (Clause 11.1) d) Drift expanding test - (Clause 11.2) e) Flattening test - (Clause 11.3) f) Intergranular corrosion test (if applicable) - (Clause 11.8/ BS EN ISO 3651-2:1998) g) Chemical composition - (Clause 7 and Note S1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	h) Metals (Refer to B2.4 for details)

9) Stainless Steel Pipes and Fittings - Stainless Steel Pipes

Stipulated Standard	Test item(s)
BS EN 10217-7:2014 Welded steel tubes for pressure purposes. Technical delivery conditions Stainless steel tubes	a) Dimension - (Clause 8.8) b) Hydrostatic test - (Clause 11.8.1) c) Tensile test - (Clause 11.2.1) d) Drift expanding test - (Clause 11.4.4) e) Flattening test - (Clause 11.4.2) f) Intergranular corrosion test (if applicable) - (Clause 11.7) g) Chemical composition - (Clause 8.2 and Note S1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	h) Metals (Refer to B2.4 for details)

10) Stainless Steel Pipes and Fittings - Stainless Steel Pipes

Stipulated Standard	Test item(s)
BS 6362:1990 Specification for stainless steel tubes suitable for screwing in accordance with BS21 "Pipe threads for tubes and fittings where pressure-tight joints are made on the threads"	<ul style="list-style-type: none"> a) Dimension-Including Straightness & Preparation end - (Clause 7) b) Leak tightness - (Clause 9.4) c) Tensile test - (Clause 9.3) d) Chemical composition - (Clause 5 and Note S1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	e) Metals (Refer to B2.4 for details)

11) Stainless Steel Pipes and Fittings - Stainless Steel Fittings

Stipulated Standard	Test item(s)
AS 3688:2016 Water supply and gas systems - Metallic fittings and end connectors Stainless Steel Compression Fittings (AS 3688:2016 - Section 6)	<ul style="list-style-type: none"> a) Dimensions (Manufacture requirement) - (Clause 3) b) Leaktightness under internal pressure test - (Clause 4.2 and Appendix D) c) Strength of joint assembly (pressure cycling test) - (Clause 4.4 and Appendix F) d) Resistance to pull-out of assembled joints - (Clause 4.5 and Appendix G) e) Chemical composition - (BS EN 10088-1:2014 and Note S1) f) Intergranular corrosion test (if applicable) - (BS EN ISO 3651-2:1998)
AS 3688:2016 Water supply and gas systems - Metallic fittings and end connectors Stainless Steel Roll-Grooved Jointing End Connectors And Coupling Body (AS 3688:2016 - Section 9)	<ul style="list-style-type: none"> g) Dimensions (Manufacture requirement) - (Clause 3) h) Leaktightness under internal pressure test - (Clause 4.2 and Appendix D) i) Strength of joint assembly (pressure cycling test) - (Clause 4.4 and Appendix F) j) Resistance to pull-out of assembled joints - (Clause 4.5 and Appendix G) k) Leaktightness under internal hydrostatic pressure whilst subjected to bending - (Clause 4.7 and Appendix I) l) Roll-grooved assembly (Joint pressure resistance) - (Clause 4.9 and Appendix K) m) Chemical composition - (BS EN 10088-1:2014 and Note S1) n) Intergranular corrosion test (if applicable)

Stipulated Standard	Test item(s)
	applicable) - (BS EN ISO 3651-2:1998)
<p>AS 3688:2016 Water supply and gas systems - Metallic fittings and end connectors</p> <p>Stainless Steel Mechanical Jointing Press - Fit End Connectors (AS 3688: 2016 - Section 10)</p>	<p>o) Dimensions (Manufacture requirement) - (Clause 3)</p> <p>p) Leaktightness under internal pressure test - (Clause 4.2 and Appendix D)</p> <p>q) Strength of joint assembly (pressure cycling test) - (Clause 4.4 and Appendix F)</p> <p>r) Resistance to pull-out of assembled joints - (Clause 4.5 and Appendix G)</p> <p>s) Leaktightness under internal hydrostatic pressure whilst subjected to bending - (Clause 4.7 and Appendix I)</p> <p>t) Compatibility of water fittings with pipe - (Clause 4.8 and Appendix J)</p> <p>u) Resistance of press fitting joints and tubes to vibration - (Clause 4.13 and Appendix P)</p> <p>v) Chemical composition - (BS EN 10088-1:2014 and Note S1)</p> <p>w) Intergranular corrosion test (if applicable) - (BS EN ISO 3651-2:1998)</p>
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	x) Metals (Refer to B2.4 for details)
- Polymeric Materials	
<p>BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR</p> <p>AS/NZS 4020:2018 Testing of products for use in contact with drinking water</p>	<p>y) For components such as seal ring, where applicable</p> <p>z) Refer to B2.10 – B2.12 for details</p>

Note S1:-

The material of stainless steel pipe and pipe fittings shall conform to the corresponding material requirement in the Stipulated Standards.

For avoidance of doubt, chemical composition test is required for all stainless steel pipe and pipe fittings to ensure the compliance.

12) Ductile Iron Pipes and Fittings - Ductile Iron Pipes with Internal Lining and Coating

Stipulated Standard	Test item(s)
BS EN 545:2010 Ductile iron pipes, fittings, accessories and their joints for water pipelines. Requirements and test methods	<ul style="list-style-type: none"> a) Dimensions - (Clause 4.3) b) Straightness of pipe - (Clause 4.3.4) c) Leak tightness test - (Clause 6.5) d) Tensile test - (Clause 6.3) e) Brinell hardness - (Clause 6.4) f) Coating thickness – (Clause 4.5)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	<ul style="list-style-type: none"> g) For components such as internal lining and coating, where applicable h) Refer to B2.10 – B2.12 for details

13) Ductile Iron Pipes and Fittings - Ductile Iron Fittings with Internal Lining and Coating

Stipulated Standard	Test item(s)
BS EN 545:2010 Ductile iron pipes, fittings, accessories and their joints for water pipelines. Requirements and test methods	<ul style="list-style-type: none"> a) Dimensions - (Clause 4.3) b) Leak tightness test - (Clause 6.5) c) Tensile test - (Clause 6.3) d) Coating thickness – (Clause 4.6)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	<ul style="list-style-type: none"> e) For components such as internal lining and coating, where applicable f) Refer to B2.10 – B2.12 for details

14) Galvanised Steel Pipes and Fittings - Galvanised Steel Pipes (Lined)

Stipulated Standard	Test item(s)
BS EN 10255:2004+A1:2007 Non-alloy steel tubes suitable for welding and threading. Technical delivery conditions	a) Dimensions - (Clause 8.4) b) Tensile test - (Clause 9.3) c) Bend test - (Clause 9.4) d) Flattening test - (Clause 9.5) e) Leak tightness test - (Clause 9.6) f) Chemical composition test - (Clause 8.2) g) Coating thickness test (BS EN 10240:1998 Table 1/ BS EN ISO 1461)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	h) For components such as internal lining, where applicable i) Refer to B2.10 – B2.12 for details

15) Galvanised Steel Pipes and Fittings - Galvanised Steel Pipes for Fire Service (Unlined)

Stipulated Standard	Test item(s)
BS EN 10255:2004+A1:2007 Non-alloy steel tubes suitable for welding and threading. Technical delivery conditions	a) Dimensions - (Clause 8.4) b) Tensile test - (Clause 9.3) c) Bend test - (Clause 9.4) d) Flattening test - (Clause 9.5) e) Leak tightness test - (Clause 9.6) f) Chemical composition test - (Clause 8.2) g) Coating thickness test (BS EN 10240:1998 Table 1/ BS EN ISO 1461)

16) Galvanised Steel Pipes and Fittings - Galvanised Steel Pipes for diameter above 150mm and for Fire Service (Unlined)

Stipulated Standard	Test item(s)
BS EN 10217-1:2019 Welded steel tubes for pressure purposes — Technical delivery conditions	<ul style="list-style-type: none"> a) Dimensions - (Clause 8.7) b) Tensile test - (Clause 11.2) c) Flattening test - (Clause 11.4) d) Hydrostatic test - (Clause 11.8.1) e) Chemical composition – (Clause 8.2 Table 2) f) Coating thickness test if applicable (BS EN 10240:1998 Table 1/ BS EN ISO 1461)

17) Unplasticized Polyvinyl Chloride (PVC-U) Pipes and Fittings - PVC-U Pipes

Stipulated Standard	Test item(s)
BS EN ISO 1452-2:2009 Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure. Unplasticized poly(vinyl chloride) (PVC-U) – Pipe	<ul style="list-style-type: none"> a) Dimensions - (Clause 6) b) Impact resistance - (Clause 8.1) c) Resistance to internal pressure - (Clause 8.2)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Refer to B2.10 – B2.12 for details

18) Unplasticized Polyvinyl Chloride (PVC-U) Pipes and Fittings - PVC-U Fittings

Stipulated Standard	Test item(s)
BS EN ISO 1452-3:2010 Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure. Unplasticized poly(vinyl chloride) (PVC-U) - Fittings	a) Dimensions - (Clause 6) b) Resistance to internal pressure of fittings or parts of fittings - (Clause 8.1)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

19) Unplasticized Polyvinyl Chloride (PVC-U) Pipes and Fittings - PVC-U Pipes

Stipulated Standard	Test item(s)
BS 3505:1986 Specification for unplasticized polyvinyl chloride (PVC-U) pressure pipes for cold potable water	a) Dimension - (Clause 4) b) Short-term hydrostatic pressure resistance - (Clause 6.4) c) Impact resistance - (Clause 6.5)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Refer to B2.10 – B2.12 for details

20) Chlorinated Polyvinyl Chloride (PVC-C) Pipes and Fittings - PVC-C Pipes

Stipulated Standard	Test item(s)
BS EN ISO 15877-2:2009 +A1:2010 Plastics piping systems for hot and cold water installations. Chlorinated poly(vinyl chloride) (PVC-C) – Pipes	a) Dimensions - (Clause 6) b) Resistance to internal pressure - (Clause 7.1)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

21) Chlorinated Polyvinyl Chloride (PVC-C) Pipes and Fittings - PVC-C Fittings

Stipulated Standard	Test item(s)
BS EN ISO 15877-3:2009 +A1:2010 Plastics piping systems for hot and cold water installations. Chlorinated poly(vinyl chloride) (PVC-C) – Fittings	a) Dimensions - (Clause 6) b) Resistance to internal pressure - (Clause 7.1)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

22) Crosslinked Polyethylene (PE-X) Pipes and Fittings - PE-X Pipes

Stipulated Standard	Test item(s)
BS 7291-3:2010 Thermoplastics pipe and fitting systems for hot and cold water for domestic purposes and heating installations in buildings. Specification for crosslinked polyethylene (PE-X) pipes and associated fittings	a) Dimensions - (Clause 4.1) b) Short-term hydrostatic pressure resistance - (Clause 4.2.2)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

23) Crosslinked Polyethylene (PE-X) Pipes and Fittings - PE-X Fittings

Stipulated Standard	Test item(s)
BS 7291-3:2010 Thermoplastics pipe and fitting systems for hot and cold water for domestic purposes and heating installations in buildings. Specification for crosslinked polyethylene (PE-X) pipes and associated fittings	a) Dimensions - (Clause 4.1) b) Short-term hydrostatic pressure resistance - (Clause 5.4.2)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

24) Polyethylene (PE) Pipes and Fittings - PE Pipes

Stipulated Standard	Test item(s)
BS EN 12201-2:2011 + A1:2013 Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Pipes	a) Dimensions - (Clause 6) b) Hydrostatic strength - (Clause 7.2)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

25) Polyethylene (PE) Pipes and Fittings - PE Fittings

Stipulated Standard	Test item(s)
BS EN 12201-3:2011 + A1:2012 Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Fittings	a) Dimensions - (Clause 6) b) Hydrostatic strength - (Clause 7.3)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

26) Pipes and Fittings – Fittings (Long Screw Connector / Flange Adaptor for Water Meter)

Stipulated Standard	Test item(s)
N/A	a) Dimension - (Clause 3.2.1.2 of Part A of this document for Long Screw Connector; Based on Manufacturer Requirement for Flange Adaptor) b) Coating thickness (except copper alloy and stainless steel body) - (WIS 4-52-01 Appendix B) c) Chemical composition for body - (shall either be copper-zinc alloy (refer to Note C1), stainless steel (refer to Note S1), or ductile iron with internal coating)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Lead content	e) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	f) For components such as seal ring, internal coating, where applicable g) Refer to B2.10 – B2.12 for details

B5. Valves

1) Valve - Flushing Valve

Stipulated Standard	Test item(s)
BS EN 997:2012+A1:2015 WC pans and WC suites with integral trap	a) Dimensions - (Based on Manufacturer Requirement) b) Flush volume - (Clause 6.5) c) Flush rate - (Clause 6.6) d) Physical endurance and leakage of flushing device - (Clause 6.7)

2) Valve - Sensor Flushing Valve

Stipulated Standard	Test item(s)
BS EN 15091:2013 Sanitary tapware. Electronic opening and closing sanitary tapware	a) Dimension - (Clause 5.2 / 6.5 / 7.4) b) Leaktightness of the mixing valve - (Clause 4.6.4 & 4.6.5) c) Pressure resistance characteristics - (Clause 4.7) d) Hydraulic characteristics - (Clause 5.3 / 6.6 / 7.5) e) Endurance test - (Clause 5.5 / 6.8 / 7.7)
Other Requirements (for Salt Water Inside Service)	
- Metallic materials	
Material grade	f) For components such as body, spout, where applicable g) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable h) Refer to Note V1 for compliance details

3) Valve - Gate Valve (Copper Alloy Body)

Stipulated Standard	Test item(s)
BS EN 12288:2010 Industrial valves. Copper alloy gate valves	a) Dimensions - (Clause 4.2.4) b) Pressure test - (Clause 5.1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, bonnet, seat, stem, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, bonnet, seat, stem, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

4) Valve - Gate Valve (Cast Iron Body/Ductile Iron Body)

Stipulated Standard	Test item(s)
BS EN 1171:2015 Industrial valves. Cast iron gate valves	a) Dimensions - (Clause 4.1.3) b) Pressure test - (Clause 5.1) c) Strength torque - (Clause 4.3) d) Coating thickness – (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	e) Metals (Refer to B2.4 for details)
Material grade	f) For components such as body, stem, stem nut, seat, seat ring, where applicable g) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable h) Refer to B2.7 for compliance details i) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	j) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	k) For components such as internal coating, seat, where applicable l) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	m) For components such as body, stem, stem nut, seat, seat ring, where applicable n) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable o) Refer to Note V1 for compliance details p) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

5) Valve - Gate Valve (Cast Iron Body/Ductile Iron Body)

Stipulated Standard	Test item(s)
<p>BS EN 1074-1:2000 Valves for water supply. Fitness for purpose requirements and appropriate verification tests. General requirements; and</p> <p>BS EN 1074-2:2000 Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Isolating valves</p>	<p>a) Dimensions - (Clause 4.6 of BS EN 1074-1:2000 & Clause 4.2 of BS 5163-1:2004)</p> <p>b) Leak-tightness to internal pressure - (Clause 5.2.1.1)</p> <p>c) Seat tightness at high differential pressure - (Clause 5.2.2.1)</p> <p>d) Resistance of valves to operating loads (MST) - (Clause 5.1.4)</p> <p>e) Coating thickness – (Appendix B of WIS 4-52-01)</p>
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	f) Metals (Refer to B2.4 for details)
Material grade	<p>g) For components such as body, stem, stem nut, seat, seat ring where applicable,</p> <p>h) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable</p> <p>i) Refer to B2.7 for compliance details</p> <p>j) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2</p>
Lead content	k) Refer to B2.5 for details
- Polymeric Materials	
<p>BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR</p> <p>AS/NZS 4020:2018 Testing of products for use in contact with drinking water</p>	<p>l) For components such as internal coating, seat, where applicable</p> <p>m) Refer to B2.10 – B2.12 for details</p>
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	<p>n) For components such as body, stem, stem nut, seat, seat ring where applicable,</p> <p>o) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable</p> <p>p) Refer to Note V1 for compliance details</p> <p>q) If cast iron and ductile iron are used,</p>

	grade of those components shall be specified and declared in the supporting documents in B2.2
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6) Valve - Gate Valve (Stainless Steel Body)

Stipulated Standard	Test item(s)
BS EN 1984:2010 Industrial valves. Steel gate valves	a) Dimensions - (Clause 4.1.3) b) Pressure test - (Clause 5.1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
- Material grade	d) For components such as body, bonnet, stem, stem nut, seat, seat ring where applicable, e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, bonnet stem, stem nut, seat, seat ring, where applicable, i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

7) Valve - Check Valve (Copper Alloy Body)

Stipulated Standard	Test item(s)
BS 5154:1991 Specification for copper alloy globe, globe stop and check, check and gate valves (Specification for gate valves replaced by BS EN 12288)	a) Dimensions - (Clause 8) b) Pressure test requirement - (Clause 11)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, bonnet, seat, where applicable, e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, bonnet, seat, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

8) Valve - Check Valve (Cast Iron/Ductile Iron/Stainless Steel Body)

Stipulated Standard	Test item(s)
BS EN 16767:2016 Industrial valves. Steel and cast iron check valves	a) Dimensions - (Clause 4.2.3) b) Pressure test - (Clause 5.1) c) Coating thickness (except stainless steel body) - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, disc, seat ring, stem, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as internal coating, seat, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	l) For components such as body, disc, seat ring, stem, where applicable, m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

9) Valve - Check Valve (Cast Iron/Ductile Iron Body)

Stipulated Standard	Test item(s)
BS EN 12334:2001 Industrial valves. Cast iron check valves	a) Dimensions - (Clause 4.1.3) b) Pressure test - (Clause 5.1) c) Coating thickness - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, disc, seat ring, stem, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as internal coating, seat, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	l) For components such as body, disc, seat ring, stem, where applicable, m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

10) Valve - Ball Valve (Copper Alloy Body)

Stipulated Standard	Test item(s)
BS EN 13547:2013 Industrial valves. Copper alloy ball valves	a) Dimensions - (Clause 4.2.4) b) Production pressure testing & seat leakage rate - (Clause 5.1 & 5.2)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, ball, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, ball, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

11) Valve - Ball Valve (Copper Alloy Body/Stainless Steel Body)

Stipulated Standard	Test item(s)
BS EN 13828:2003 Building valves. Manually operated copper alloy and stainless steel ball valves for potable water supply in buildings. Tests and requirements	a) Dimensions - (Clause 5.2) b) Hydraulic strength - (Clause 7.4.1 & 7.4.2)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, ball, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, ball, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

12) Valve - Globe Valve (Copper Alloy Body)

Stipulated Standard	Test item(s)
BS 5154:1991 Specification for copper alloy globe, globe stop and check, check and gate valves (Specification for gate valves replaced by BS EN 12288)	a) Dimensions - (Clause 8) b) Pressure test requirement - (Clause 11)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, bonnet, stem, seat, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, bonnet, stem, seat, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

13) Valve - Globe Valve (Stainless Steel Body)

Stipulated Standard	Test item(s)
BS EN 13709:2010 Industrial valves. Steel globe and globe stop and check valves	a) Dimensions - (Clause 4.1.3) b) Pressure test - (Clause 5.1)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, bonnet, stem, seat, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	h) For components such as body, bonnet, stem, seat, where applicable i) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable j) Refer to Note V1 for compliance details

14) Valve - Globe Valve (Cast Iron Body/Ductile Iron Body)

Stipulated Standard	Test item(s)
BS EN 13789:2010 Industrial valves. Cast iron globe valves	a) Dimensions - (Clause 4.1.3) b) Pressure test - (Clause 5.1) c) Coating thickness - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, seat, seat ring, stem, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as internal coating, seat, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	l) For components such as body, seat, seat ring, stem, where applicable m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

15) Valve - Butterfly Valve

Stipulated Standard	Test item(s)
BS EN 593:2009+A1:2011 Industrial valves. Metallic butterfly valves	a) Dimensions - (Clause 4.1.4) b) Leak tightness - (Clause 4.2.4) c) Coating thickness (except copper alloy and stainless steel body) - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, stem, disc, seat, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as internal lining and coating, seat, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	l) For components such as body, stem, disc, seat, where applicable m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

16) Valve - Ball Float Valve

Stipulated Standard	Test item(s)
BS 1212-1:1990 Specification for piston type float operated valves (copper alloy body) (excluding floats)	a) Dimensions - (Section 3) b) Hydraulic pressure test - (Clause 24) c) Shut-off test - (Clause 24)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, piston, lever, float, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Float shall be made of copper alloy or stainless steel h) Refer to B2.7 for compliance details
Lead content	i) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service)	
- Metallic Materials	
Material grade	j) For components such as body, piston, lever, float, where applicable k) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable l) Float shall be made of plastic or stainless steel m) Refer to Note V1 for compliance details

17) Valve - Ball Float Valve

Stipulated Standard	Test item(s)
BS 1212-2:1990 Float operated valves. Specification for diaphragm type float operated valves (copper alloy body) (excluding floats)	a) Dimensions - (Section 3) b) Hydraulic pressure test - (Clause 26) c) Shut-off test - (Clause 26)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, piston, lever, float, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Float shall be made of copper alloy or stainless steel h) Refer to B2.7 for compliance details
Lead content	i) Refer to B2.5 for details
Other Requirements (for Salt Water Inside Service)	
- Metallic Materials	
Material grade	j) For components such as body, piston, lever, float, where applicable k) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable l) Float shall be made of plastic or stainless steel m) Refer to Note V1 for compliance details

18) Valve - Ball Float Valve for WC Flushing Cisterns

Stipulated Standard	Test item(s)
BS 1212-3:1990 Specification for diaphragm type float operated valves (plastics bodied) for cold water services only (excluding floats)	a) Dimensions - (Section 3) b) Hydraulic pressure test - (Clause 14.1) c) Shut-off test - (Clause 14.2) d) Backflow prevention test - (Clause 15) e) Endurance test - (Clause 17)
Other Requirements (for Salt Water Inside Service)	
- Metallic Materials	
Material grade	f) For components such as body, piston, lever, float, where applicable g) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable h) Float shall be made of plastic or stainless steel i) Refer to Note V1 for compliance details

19) Valve - Ball Float Valve for WC Flushing Cisterns

Stipulated Standard	Test item(s)
BS 1212-4:2016 Specification for compact type float operated valves for WC flushing cisterns (including floats)	a) Dimensions - (Clause 5.1) b) Static pressure test - (Clause 6.1.1) c) Shut-off pressure test - (Clause 6.1.2) d) Backflow prevention test - (Clause 6.2) e) Endurance test - (Clause 6.4)
Other Requirements (for Salt Water Inside Service)	
- Metallic Materials	
Material grade	f) For components such as body, piston, lever, float, where applicable g) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable h) Float shall be made of plastic or stainless steel i) Refer to Note V1 for compliance details

20) Valve - Pressure Reducing Valve

Stipulated Standard	Test item(s)
BS EN 1567:1999 Building valves. Water pressure reducing valves and combination water reducing valves. Requirements and tests.	a) Dimensions - (Clause 4) b) Pressure strength and tightness of the body - (Clause 8.2.2) c) Flow rate and outlet pressure - (Clause 8.3.4) d) Coating thickness (except copper alloy and stainless steel body) - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	e) Metals (Refer to B2.4 for details)
Material grade	f) For components such as body, seat, where applicable g) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable h) Refer to B2.7 for compliance details i) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B.2
Lead content	j) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	k) For components such as internal coating, where applicable l) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
Material grade	m) For components such as body, seat, where applicable n) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable o) Refer to Note V1 for compliance details p) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B.2

21) Valve - Hydrant Valve (Fire Hydrant Systems)

Stipulated Standard	Test item(s)
BS 5041-1:1987 Specification for landing valves for wet risers	a) Dimensions - (Clause 9 Figure 5a of BS 336:2010) b) Hydraulic pressure test - (Clause 19) c) Water flow rate and outlet pressure - (Clause 22)
Other Requirements (for Fire Service)	
- Metallic Materials	
Material grade	d) For components such as body, bonnet, disc, where applicable e) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable f) Refer to Note V1 for compliance details

22) Valve - Valves (PVC-U)

Stipulated Standard	Test item(s)
BS EN ISO 1452-4:2009 Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure. Unplasticized poly(vinyl chloride) (PVC-U). Valves	a) Dimensions - (Clause 6) b) Mechanical characteristics - (Clause 8.1)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

23) Valve - Valves (PE)

Stipulated Standard	Test item(s)
BS EN 12201-4:2012 Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Valves	a) Dimensions - (Clause 6) b) Mechanical characteristics - (Clause 7)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Refer to B2.10 – B2.12 for details

Note V1:

For valves and plumbing products in Section B5, B6 and B8 used in salt water inside service and fire service, the compliance to material grade could be demonstrated by specifying and declaring the grade of metallic components in accordance with relevant national/international standards in the test reports or other supporting documents mentioned in B2.2.

B6. Taps/Mixers

1) Tap - Single Tap/Combination Tap

Stipulated Standard	Test item(s)
BS EN 200:2008 Sanitary tapware. Single taps and combination taps for water supply systems of type 1 and type 2. General technical specification	a) Dimensions - (Clause 6) b) Leaktightness characteristics - (Clause 8.3 & 8.4) c) Pressure resistance characteristics - (Clause 9.4 & 9.5)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, spout, where applicable f) Refer to Note T1 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details
Lead content	h) Refer to B2.5 for details
Visual inspection of electroplating material on the internal water passage surfaces via main body and spout	i) Metals (Refer to B2.4 for details)
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as body, spout, flexible hose, where applicable k) Refer to B2.10 – B2.12 for details

2) Tap/Mixer - Basin Mixing Valve/Sink Mixing Valve/Shower Mixing Valve/Bath Mixing Valve/Combination Draw-off Tap

Stipulated Standard	Test item(s)
BS EN 1286:1999 Sanitary tapware. Low pressure mechanical mixing valves. General technical specifications	a) Dimensions - (Clause 8) b) Leaktightness of the mixing valve - (Clause 9.3, 9.4 & 9.5)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	c) Metals (Refer to B2.4 for details)
Material grade	d) For components such as body, spout, where applicable e) Refer to Note T1 for the suitability of metallic materials to be used for components, where applicable f) Refer to B2.7 for compliance details
Lead content	g) Refer to B2.5 for details
Visual inspection of electroplating material on the internal water passage surfaces via main body and spout	h) Metals (Refer to B2.4 for details)
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	i) For components such as body, spout, flexible hose, where applicable j) Refer to B2.10 – B2.12 for details

3) Thermostatic Mixing Valve - Shower Mixing Valve/Bath Mixing Valve

Stipulated Standard	Test item(s)
BS EN 1287:1999 Sanitary tapware. Low pressure thermostatic mixing valves. General technical specifications	<ul style="list-style-type: none"> a) Dimensions - (Clause 8) b) Leaktightness of the mixing valve - (Clause 9.3, 9.4 & 9.5) c) Sensitivity – (Clause 10.6) d) Safety with cold water failure - (Clause 10.7) e) Temperature stability with changing inlet pressure - (Clause 10.8) f) Temperature stability with changing inlet temperature - (Clause 10.9) g) Mechanical performance of the thermostatic mixing valve upstream of the obturator - Obturator in the closed position - (Clause 11.3)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	h) Metals (Refer to B2.4 for details)
Material grade	<ul style="list-style-type: none"> i) For components such as body, spout, where applicable j) Refer to Note T1 for the suitability of metallic materials to be used for components, where applicable k) Refer to B2.7 for compliance details
Lead content	l) Refer to B2.5 for details
Visual inspection of electroplating material on the internal water passage surfaces via main body and spout	m) Metals (Refer to B2.4 for details)
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	<ul style="list-style-type: none"> n) For components such as body, spout, flexible hose, where applicable o) Refer to B2.10 – B2.12 for details

4) Tap/Valve - Sensor Draw-off Tap/Sensor Mixing Valve

Stipulated Standard	Test item(s)
BS EN 15091:2013 Sanitary tapware. Electronic opening and closing sanitary tapware	a) Dimension - (Clause 5.2 / 6.5 / 7.4) b) Leaktightness of the mixing valve - (Clause 4.6.4 & 4.6.5) c) Pressure resistance characteristics - (Clause 4.7) d) Endurance test - (Clause 5.5 / 6.8 / 7.7)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	e) Metals (Refer to B2.4 for details)
Material grade	f) For components such as body, spout, where applicable g) Refer to Note T1 for the suitability of metallic materials to be used for components, where applicable h) Refer to B2.7 for compliance details
Lead content	i) Refer to B2.5 for details
Visual inspection of electroplating material on the internal water passage surfaces via main body and spout	j) Metals (Refer to B2.4 for details)
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	k) For components such as body, spout, flexible hose, where applicable l) Refer to B2.10 – B2.12 for details

5) Tap - Self-Closing Draw-off Tap (Non-electronic)

Stipulated Standard	Test item(s)
BS EN 816:1997 Sanitary tapware. Automatic shut-off valves PN 10	a) Dimensions - (Clause 8) b) Leaktightness of the mixing valve - (Clause 9.2.2 & 9.2.3) c) Pressure resistance characteristics - (Clause 10.2.2 & 10.2.3) d) Mechanical endurance or wear resistance characteristics - (Clause 13)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	e) Metals (Refer to B2.4 for details)
Material grade	f) For components such as body, spout, where applicable g) Refer to Note T1 for the suitability of metallic materials to be used for components, where applicable h) Refer to B2.7 for compliance details
Lead content	i) Refer to B2.5 for details
Visual inspection of electroplating material on the internal water passage surfaces via main body and spout	j) Metals (Refer to B2.4 for details)
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	k) For components such as body, spout, flexible hose, where applicable l) Refer to B2.10 – B2.12 for details

Note T1:

If metallic materials are in direct contact with fresh water, grade of the metallic materials shall either be stainless steel/copper/copper alloy.

B7. Other Products of the prescribed Water Efficiency Labelling Scheme (WELS) Types**1) Showers for Bathing**

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Showers for Bathing', published by WSD</i>	a) Full compliance, in particular:- - Annex 1

2) Water Taps

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Water Taps', published by WSD</i>	a) Full compliance, in particular:- - Annex 1
Relevant Requirements in Section B6 for Taps/Mixers	b) Full compliance
Relevant Requirements in Section B8 for Polymeric material	c) Full compliance

3) Washing Machines

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Washing Machines', published by WSD</i>	a) Full compliance

4) Urinal Equipment

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Urinal Equipment', published by WSD</i>	a) Full compliance, in particular:- - Annex 1
Relevant Requirements in Section B5 for Flushing Valves	b) Full compliance

5) Flow Controllers

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Flow Controllers', published by WSD</i>	a) Full compliance, in particular:- - Annex 1
Relevant Requirements in Section B8 for Polymeric material	b) Full compliance

6) Water Closets

Stipulated Standard	Test item(s)
<i>The latest version of the Scheme Document 'The Voluntary Water Efficiency Labelling Scheme on Water Closets, published by WSD</i>	a) Full compliance, in particular:- - Annex 1
Relevant Requirements in Section B5 for Flushing Valves	b) Full compliance

B8. Other Materials

1) Expansion Joint / Settlement Joint / Flexible Joint / Rubber Joint

Stipulated Standard	Test item(s)
BS EN 12266-1:2012 Industrial valves. Testing of metallic valves Pressure tests, test procedures and acceptance criteria. Mandatory requirements	<ul style="list-style-type: none"> a) Dimensions - (Based on Manufacturer Requirement) b) Shell tightness to internal pressure - (BS EN 12266-1:2012) c) Coating thickness (except copper alloy and stainless steel body) - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Material	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
- Material grade	<ul style="list-style-type: none"> e) For components such as body, inner sleeve, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Material	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	<ul style="list-style-type: none"> j) For components such as body, inner sleeve, internal lining and coating, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Material	
Material grade	<ul style="list-style-type: none"> l) For components such as body, inner sleeve, where applicable m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

2) Strainers

Stipulated Standard	Test item(s)
BS EN 12266-1:2012 Industrial valves. Testing of metallic valves Pressure tests, test procedures and acceptance criteria. Mandatory requirements	a) Dimensions - (Based on Manufacturer Requirement) b) Shell tightness to internal pressure - (BS EN 12266-1:2012) c) Coating thickness (except copper alloy and stainless steel body) - (Appendix B of WIS 4-52-01)
Other Requirements (for Fresh Water Inside Service)	
- Metallic Materials	
AS/NZS 4020:2018 Testing of products for use in contact with drinking water	d) Metals (Refer to B2.4 for details)
Material grade	e) For components such as body, screen, where applicable f) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable g) Refer to B2.7 for compliance details h) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2
Lead content	i) Refer to B2.5 for details
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	j) For components such as internal lining and coating, where applicable k) Refer to B2.10 – B2.12 for details
Other Requirements (for Salt Water Inside Service and Fire Service)	
- Metallic Materials	
- Material grade	l) For components such as body, screen, where applicable m) Refer to Table B2.3.3 for the suitability of metallic materials to be used for components, where applicable n) Refer to Note V1 for compliance details o) If cast iron and ductile iron are used, grade of those components shall be specified and declared in the supporting documents in B2.2

3) Electric Water Heaters - Instantaneous Electric Water Heaters

Stipulated Standard	Test item(s)
Waterworks Regulations (Cap.102A) – Schedule 2 Part 4 2(a)	a) it has been tested satisfactorily at factory to a pressure at least 1.5 times the maximum static working pressure of the water heater

4) Gas Water Heaters - Instantaneous Gas Water Heaters

Stipulated Standard	Test item(s)
Waterworks Regulations (Cap.102A) – Schedule 2 Part 4 2(a)	a) it has been tested satisfactorily at factory to a pressure at least 1.5 times the maximum static working pressure of the water heater

5) GRP Potable Water Tank

Stipulated Standard	Test item(s)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	a) For components such as GRP panel, resin coating, epoxy coating, where applicable b) Refer to B2.10 – B2.12 for details

6) Lining Materials of Potable Water Tanks - Tile Grout, Paint/Coating & Cementitious Products

Stipulated Standard	Test item(s)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	a) Refer to B2.10 – B2.12 for details

7) Lining Materials of Potable Water Tanks - Tile

Stipulated Standard	Test item(s)
Other Requirements (for Fresh Water Inside Service)	
- Polymeric Materials	
BS 6920 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water, OR AS/NZS 4020:2018 Testing of products for use in contact with drinking water	a) Only extraction of metals (BS 6920:Section 2.6:2014) and High Temperature Test (BS 6920:Part 3:2000) are applicable

8) Soldering Material – Brazing

Stipulated Standard	Test item(s)
BS EN ISO 17672:2010 Brazing. Filler metals	a) Chemical composition (Refer to B2.6 for details)

9) Soldering Material - Soft Solder Alloy

Stipulated Standard	Test item(s)
BS EN ISO 9453:2014 Soft solder alloys – Chemical compositions and forms	a) Chemical composition (Refer to B2.6 for details)