



# GUIDELINES FOR LISTING AND REGISTRATION OF PRODUCTS AND SUPPLIERS

(Revision 7)

1 October 2015

Research, Development and Innovation Division  
National Water Services Commission

SURUHANJAYA PERKHIDMATAN AIR NEGARA (SPAN)

## RECORD OF AMENDMENT

Rev.	Effective Date	Page	Description of Amendments
0	1 Mac 2012	-	First Issuance
1	28 February 2013	6	Clause 4.1: Imposed on application for listing/ registration to be made on line through e-registration
2	25 July 2013	4 4 6 7 11 11	Amendments made on the following matters:  Clause 5.1: Application for listing  Clause 5.2: Processing time for listing  Clause 6.1: Application for registration  Clause 6.4: Certificate of Registration  Clause 11.0: Use of SPAN logo  Clause 12.2 SPAN 's right not to process an application or to cancel a listing or a registration
3	18 April 2014	1 1 2 9	Amendments made on the following matters:  Clause 1.3 Water Services Industry (Water Reticulation and Plumbing) Rules 2014  Clause 2.1: Redefined Supplier  Clause 3.2 and 3.3: Water Services Industry (Water Reticulation and Plumbing) Rules 2014  Clause 7.2: Add list of bodies that can do the translation of product certificate



<b>Rev.</b>	<b>Effective Date</b>	<b>Page</b>	<b>Description of Amendments</b>
7	1 October 2015	4	Changed processing for listing application from 7 days to 21 days
		9	Update sentence 7.3 (b) - MRA to Multi Lateral Recognition (MLA)
		10	Update sentence 8.4 (a) and 8.4 (c) – CBs to Labs
		10	Update sentence 8.4 (a) – Accreditation of Certification Bodies (ACB) Scheme to Skim Akreditasi Makmal Malaysia (SAMM)
		10	Updated Guidance to Conduct a Pilot Project
		Others	Updated APPENDICES A, B and C

## **GUIDELINES FOR LISTING AND REGISTRATION OF PRODUCTS AND SUPPLIERS**

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# GUIDELINES FOR LISTING AND REGISTRATION OF PRODUCTS AND SUPPLIERS

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## 1.0 INTRODUCTION

- 1.1 A supplier who supplies equipment, device, material, system or facility (herein collectively called as products) for use in water supply and sewerage services in Peninsular Malaysia, Federal Territories of Putrajaya and Labuan is required to list and register its standard products with SPAN.
- 1.2 Listing and registration with SPAN shall be made before the standard products supplied for any purpose of installing, working or operating and failure to supply a standard product is an offence under Section 129 of the Water Services Industry Act 2006 [Act 655].
- 1.3 In exercise of the powers conferred by section 180 of the Water Services Industry Act 2006 [Act 655], SPAN makes the Water Services Industry (Water Reticulation and Plumbing) Rules 2014.

## 2.0 DEFINITION

- 2.1 In this document:

**A supplier** means a company constituted under the laws of Malaysia and carrying out business in Malaysia. A supplier can be a manufacturer, an importer, a local authorised representative or a distributor but does not include the retailer.

**A product** is referred to any equipment, device, material, system or facility used for the purpose for supplying water services, i.e. water supply and sewerage services.

**A custody transfer meter** is referred to a meter that will be “used for trade” as defined in the Weights and Measure Act 1972 [Act 71].

### **3.0 PRODUCT CATEGORY**

3.1 All products are classified into two (2) main categories as listed below:

**Category A** : *Products that can undergo full certification to any SPAN recognised standards/ specifications by any Certification Bodies recognised by SPAN, and*

**Category B** : *Products without any standards/ specifications or products with standards/ specifications but full compliance to the standards/ specification cannot be met. Products under this category are assessed based on recognised manufacturer specifications/ standards or recognised performance testing or through a pilot project investigation.*

3.2 Product Categories A and B with their respective recognised standards are listed in Appendices A and B respectively, where the Appendices shall be referred together with the First Schedule [Rule 2 and Subrule 4(1)] of the Water Services Industry (Water Reticulation and Plumbing) Rules 2014 and any amendments thereto.

3.3 In the event of any inconsistency between the recognised standards and the provisions of the Water Services Industry (Water Reticulation and Plumbing) Rules 2014 relating to any matter, the provisions of these Rules shall prevail.

## **4.0 LISTING AND REGISTRATION OF SUPPLIERS**

4.1 Listing is applied for suppliers whose products listed under product Category A. Listed suppliers will be given a letter of confirmation on the products that are listed with SPAN.

4.2 Registration is applied for suppliers whose products listed under product Category B. Registered suppliers will be given a certificate on confirming the registration with SPAN.

4.3 All listed and registered suppliers with their products will be displayed at the SPAN website ([www.span.gov.my](http://www.span.gov.my)).

## **5.0 PROCEDURES FOR LISTING**

### **5.1 Application**

5.1.1 Application for listing shall be made via e-Registration at the SPAN website ([http://eregistration.span.gov.my/Product\\_Internet/Login.aspx](http://eregistration.span.gov.my/Product_Internet/Login.aspx)).

5.1.2 The following document shall be uploaded during the on-line application:

- (a) Form 9, 24 and 49 of Registered of Company,
- (b) Organization Management Chart,
- (c) Certificate of ISO Quality Management System (if any),
- (d) Letter of Appointment (as an agent or distributor),
- (e) Product Catalogue,
- (f) Product Certificate/ Certificate of Conformity,
- (g) Halal Certificate and Material Safety Data Sheet (for water treatment chemicals only), and



- (h) Pattern Approval and Certificate of Approval Weighing/ Measuring/ Weighing Devices/ Measuring Devices which produced by SIRIM NMSL (for custody transfer meter only).

5.1.3 Product certificate/ certificate of conformity that is submitted to SPAN shall comply with requirements as specified in Section 7.

## **5.2 Processing**

5.2.1 Application for listing will be processed within 21 working days.

5.2.2 The processing time include the time for reviewing and approving of an application, issuing of confirmation letter and listing of supplier at the SPAN website.

## **5.3 Approval**

5.3.1 Approval for listing shall be made by the Senior Director of Research, Development and Innovation Division of SPAN.

## **5.4 Confirmation of Listing**

5.4.1 A confirmation letter will be issued to the suppliers confirming the listing of products with SPAN and will be displayed at the SPAN website.

## **5.5 Period of Listing**

5.5.1 Every listed product and the supplier will be maintained at the SPAN website until the expiry date of the product certificate.

5.5.2 However, to facilitate any unforeseen delay in the renewal of product certificate, the expired certificates will remain valid in SPAN listing for an additional one month.

## **5.6 Maintaining of Products in SPAN Listing**

5.6.1 In order to maintain listing, the suppliers shall submit the renewed product certificate through e-Registration before the expiry date.

5.6.2 Supplier will be delisted if SPAN does not received the renewed certificate within the one month extended period.

## **5.7 Responsibilities of Listed Suppliers**

5.7.1 All suppliers shall be responsible to ensure that the product certificate is continuously maintained and valid throughout the listing period.

5.7.2 Any failure to maintain the validity of the certificate will render the suppliers to be delisted from SPAN listing.

## **6.0 PROCEDURES FOR REGISTRATION**

### **6.1 Application**

6.1.1 Application for registration shall be made via e-Registration at SPAN website ([http://eregistration.span.gov.my/Product\\_Internet/Login.aspx](http://eregistration.span.gov.my/Product_Internet/Login.aspx)).

6.1.2 The following document shall be uploaded during the on-line application:

- (a) Form 9, 24 and 49 of Registered of Company,
- (b) Organizational management chart,
- (c) Certificate of ISO Quality Management System (if any),
- (d) Letter of Appointment (as an agent or a distributor),
- (e) Product catalogue,
- (f) Technical specification,

- (g) Design criteria,
- (h) Engineering drawing,
- (i) Operation manual,
- (j) Test Report/ Performance Report/Report of Pilot Project,
- (k) Halal Certificate and Material Safety Data Sheet (for water treatment chemicals only), and
- (l) Pattern Approval and Certificate of Approval Weighing/ Measuring/ Weighing Devices/ Measuring Devices which produced by SIRIM NMSL (for custody transfer meter only).

6.1.3 Testing or performance report that is submitted to SPAN shall comply with requirements as specified in Section 8.

## **6.2 Processing**

6.2.1 Certificate of registration will be issued to the successful applicant within 21 working days from the date of receipt of an application.

6.2.2 However, for products that need to be assessed through pilot project investigation, the processing time depends on the required time to complete the project. Certificate of registration will only be issued to the suppliers after the pilot project demonstrated full compliance to requirements determined by SPAN.

## **6.3 Approval**

6.3.1 All approval for registration shall be made by Chief Executive Officer of SPAN.

## 6.4 Certificate of Registration

6.4.1 An approved applicant will be issued with a Certificate of Registration that consists of the following information:

- details of product approved,
- details of supplier of the product,
- general conditions of the registration, and
- additional requirements or conditions for specific products of the registration (if any).

6.4.2 The general conditions apply to all registered suppliers are:

- (a) the approval is applicable to Peninsular Malaysia and Federal Territories Putrajaya and Labuan only,
- (b) the supplier will ensure that only registered products are supplied to the user,
- (c) SPAN reserves the right to cancel the certificate/ registration due to:
  - false or misleading information is given to SPAN,
  - deterioration of product quality,
  - complaint on product or the supplier is found to be true,
  - changes made on the registration procedures,
  - supplier fails to comply with requirements in the Guidelines for Listing and Registration of Products and Suppliers,
- (d) SPAN also reserve right to conduct compliance audit on products at any time within the listing/ registration period and the supplier shall give full cooperation during the audit,
- (e) the supplier shall comply with other instructions issued by SPAN from time to time, and
- (f) the supplier shall update record of supply or record of installation of products to the water services industry through e-Registration.

6.4.3 In certain circumstances and depending on type of product, additional requirements or conditions for specific products as listed in the certificate of registration will be imposed on suppliers.

## **6.5 Validity of Certificate of Registration**

6.5.1 The validity period of certificate of registration will be determined by SPAN and shall be valid for a period as specified in the certificate.

## **6.6 Renewal of Certificate of Registration**

6.6.1 Every application for renewal of certificate shall be made online not later than three months before the end of the expiry date.

## **6.7 Responsibilities of Registered Suppliers**

6.7.1 All registered suppliers are responsible to adhere to all approval conditions as listed in the certificate of registration.

6.7.2 Failing to comply with any of the conditions may lead to termination of registration.

## **7.0 PRODUCT CERTIFICATE AND CERTIFICATION BODIES**

7.1 Application for listing shall be accompanied with a product certificate/ certificate of conformity to confirm the compliance of products to SPAN recognised standards as specified in Appendix A.

7.2 The certificate shall be written either in English or Bahasa Malaysia. Certificate in other languages shall be translated into either in English or Bahasa Malaysia before submission to SPAN. Translation can be made by any of the following:

- (i) Institut Terjemahan & Buku Malaysia (ITBM),
- (ii) ITBM registered translators, and
- (iii) The embassy of the country of origin of products.

7.3 Certificates from any of the following certification bodies (CBs) or organisations are recognised by SPAN:

- (a) CBs that are accredited by Standard Malaysia under the Accreditation of Certification Bodies (ACB) Scheme,
- (b) CBs that are accredited by an accreditation body that is part of the international and regional mutual global recognition arrangement Multi Lateral Recognition (MLA) implemented by Pacific Accreditation Cooperation (PAC) and International Accreditation Forum (IAF), and
- (c) Organisations that are recognised by SPAN as deem competent to carry out product certification.

## **8.0 TEST REPORT AND TESTING LABORATORIES**

8.1 Application for registration for most products under product Category B shall be accompanied with a test report to show compliance with requirements as specified in Appendix B.

8.2 Test report to be submitted for registration shall be written either in English or Bahasa Malaysia. Report in other languages shall be translated into either in English or Bahasa Malaysia before submission to SPAN. Translation can be made by any of the following:

- (i) Institut Terjemahan & Buku Malaysia (ITBM),
- (ii) ITBM Registered Translators, and
- (iii) The embassy of the country of origin of products.

- 8.3 The validity of the test report shall be within 5 years from the date of the application.
- 8.4 Test reports from any of the following laboratories are recognised by SPAN:
- (a) Labs that are accredited by Standard Malaysia under the Skim Akreditasi Makmal Malaysia (SAMM),
  - (b) Labs that have been accredited by an accreditation body that is part of the international and regional mutual global recognition arrangement (MRA) implemented by International Laboratory Accreditation Cooperation (ILAC) and Asia Pacific Laboratory Accreditation Cooperation (APLAC), and
  - (c) Organisations that are recognised by SPAN as deemed competent to carry out testing that was specified by SPAN.

## **9.0 GUIDANCE TO CONDUCT A PILOT PROJECT**

- 9.1 The performance of some products under product Category B is assessed through pilot project investigation.
- 9.2 Suppliers are required to get SPAN approval to carry out a pilot project before proceeding with the implementation of the project.
- 9.3 Procedures to carry out a pilot project and criteria to measure the performance of a product or a system will be determined by SPAN.
- 9.4 The list of Third Parties (Independent Agency) certified and endorsed by SPAN for the purpose of monitoring and verification of Water Supply Pilot Project are:

(a) Licensee or a person recognised by SPAN for Water Supply System:

- Water supply operators

(b) Testing Body recognised by the Department of Standards Malaysia:

- SIRIM QAS International Sdn. Bhd.
- IKRAM QA Services Sdn. Bhd.

9.5 The list of Third Parties (Independent Agency) certified and endorsed by SPAN for the purpose of monitoring and verification of Sewerage Pilot Project are:

(a) Licensee or a person recognised by SPAN for sewerage services:

- Indah Water Konsortium Sdn Bhd

(b) Testing Body recognised by the Department of Standards Malaysia:

- SIRIM QAS International Sdn. Bhd.
- IKRAM QA Services Sdn. Bhd.

(c) Higher Education Institutions recognised by SPAN:

- Research Management Center (RMC), UPM
- University of Malaya Consultancy Unit (UPUM), UM
- Research Management Institute, UiTM
- Development of Environmental Engineering, Faculty of Civil Engineering, UTM



- 9.6 Third Party (Independent Agency) for the purpose of sampling:
- (a) Testing Laboratory accredited by the Department of Standards Malaysia Laboratory Accreditation Scheme of Malaysia (SAMM)
    - List of accredited laboratories can be obtained from [www.standardsmalaysia.gov.my](http://www.standardsmalaysia.gov.my).

## **10.0 COMPLIANCE TO SPAN ADDITIONAL REQUIREMENTS OR CONDITIONS FOR SPECIFIC PRODUCTS**

- 10.1 In addition to compliance to standards, SPAN also imposed additional requirements or conditions on specific products as specified in Appendix C.
- 10.2 Compliance to the additional requirements or conditions is a part of listing and registration procedures.

## **11.0 FEES OF APPLICATION**

- 11.1 No fees are imposed for the application of listing or registration of products and suppliers at this moment.
- 11.2 However, SPAN reserves the right to impose any fees or charges at anytime for the registration and listing of the suppliers.

## **12.0 USE OF SPAN LOGO**

- 12.1 Use of SPAN logo on product or marketing material is not allowed.
- 12.2 However, the supplier may quote “product has been listed/ registered with SPAN (state listing/ registration number)” on marketing materials.
- 12.3 Statement connoting that the product is “SPAN certified” or “SPAN approved” are prohibited.

## **13.0 OFFENCE FOR GIVING FALSE OR MISLEADING INFORMATION**

- 13.1 It is an offence under Section 130 of the Water Services Industry Act 2006 for “*a person who discloses or provides information to the Commission or its authorized officers that he knows or has reason to believe is false or misleading commits an offence and shall, on conviction, be liable to a fine not exceeding two hundred thousand ringgit or to imprisonment for a term not exceeding two years or to both.*”
- 13.2 SPAN also has the right not to process an application or to cancel a listing or a registration if it is believed that false or misleading information is given by the suppliers.

## **14.0 ENQUIRIES**

- 14.0 For any further information about listing and registration of products and suppliers, please contact Research, Development and Innovation Division of SPAN at e-mail: [eregistrationadmin@span.gov.my](mailto:eregistrationadmin@span.gov.my) or telephone: 03 - 83179 333/ 334/ 335.

## APPENDIX A

### PRODUCT CATEGORY A AND THE RECOGNIZED STANDARDS

Listing of product category A requires the products to have undergone full certification by recognised certification bodies and shall be referred together with the First Schedule [Rule 2 and Subrule 4(1)] of the Water Services Industry (Water Reticulation and Plumbing) Rules 2014 and any amendments thereto.

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
<b>(A) Water Pipes</b>				
1	Polyethylene (PE) Pipes	MS 1058: Part 2: 2005	Specification for Polyethylene (PE) Piping Systems for Water Supply : Part 2 : Pipes (Forth Revision)	1 January 2008
		ISO 4427-2: 2007: AMD 1:2011	Plastics Piping Systems – Polyethylene (PE) Pipes and Fittings for Water Supply – Part 2 : Pipes	1 January 2008
		DIN 8075 (2011 – 2012)	Polyethylene (PE) Pipes – PE 80, PE 100 - General quality requirements, testing	1 January 2008
2	PE-RT Pipes	ISO 22391- 2: 2009	Plastics Piping Systems for Hot and Cold Water Installations – Polyethylene of Raised Temperature Resistance (PE-RT) : Part 2 : Pipes	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		MS 2508-2: 2012	Plastics Piping Systems for Hot and Cold Water Installations – Polyethylene of Raised Temperature Resistance (PE-RT) : Part 2 : Pipes (ISO 22391-2: 2009, MOD)	1 January 2013
3	PE-RT/AL/PE-RT Pipes	BS EN ISO 21003 -1: 2008	Multilayer Piping Systems for Hot and Cold Water Installations Inside Buildings. General	1 June 2013
4	PE-X Pipes	MS 1736 : Part 2 : 2004	Plastics Piping Systems for Hot and Cold Water Installations –Crosslinked Polyethylene (PE-X): Part 2 : Pipes	1 January 2008
		AS/NZS 2492 : 2007	Cross-linked polyethylene (PE-X) pipes for pressure applications	10 Sept 2014
		ISO 15875-2 : 2003	Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 2: Pipes	10 Sept 2014
5	PE-X/AL/PE-X Pipes	AS 4176 : 1994	Polyethylene/ aluminium and cross-linked polyethylene/ aluminium macro-composite pipe systems for pressure applications	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		AS 4176.2 : 2010	Multilayer Pipes for Pressure Applications - Multilayer Piping Systems For Hot And Cold Water Plumbing Applications - Pipes	10 Sept 2014
6	PE Aluminium (PE-AL-PE) Pipes	ASTM F1282 - 03	Standard Specification for Polyethylene/ Aluminium/ Polyethylene (PE-AL-PE) Composite Pressure Pipe	1 January 2008
7	Unplasticized Polyvinylchloride (uPVC) Pipes	MS 628: Part 1: 1999 AMD.1: 2001 & AMD.2: 2002	Specification for Unplasticised PVC (uPVC) Pipes for Water Supply : Part 1: Pipes (1 <sup>st</sup> revision)	1 January 2008
		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). Pipes	1 January 2008
8	Solvent cement for UPVC piping system	MS 628 : Part 2 : Section 2.2 : 1999	Specification for Unplasticised PVC (UPVC) Pipes for Water Supply : Part 2 : Joints and Fittings for Use with Unplasticised PVC Pipes : Section 2.2 : Solvent Cement	1 January 2008
9	Chlorinated Polyvinylchloride (cPVC) Pipes	MS 2045 : 2007	Chlorinated Poly (Vinyl Chloride) (PVC-C) Plastic Hot-and-Cold-Water Distribution Systems - Specification	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		ASTM D2846 / D2846M – 09b	Standard Specification for Chlorinated Poly (Vinyl Chloride) (cPVC) Plastic Hot and Cold Water Distribution System	1 January 2008
		MS 1757 : Part 1 : 2008	Chlorinated Poly (Vinyl Chloride) (PVC-C) – Plastic Piping System – Part 1 : Specification for Schedules 40 & 80 Pipes	1 June 2009
10	Oriented Unplasticized Polyvinylchloride (PVC-O) Pipes	ISO 16422: 2006	Pipes and Joints Made of Oriented Poly (Vinyl Chloride) (PVC-O) for the Conveyance of Water under Pressure – Specifications	10 Sept 2014
11	Acrylonitrile-Butadiene-Styrene (ABS) Pipes	MS 1419: Part 1: 2007	Acrylonitrile-Butadiene Styrene (ABS) Piping Systems for Pressure Applications – Part 1: Specification for Compounds, Pipes and Fittings (First Revision)	1 January 2008
		AS/NZS 3518 : 2004	Acrylonitrile Butadiene Styrene (ABS) Compounds, Pipes and Fittings for Pressure Applications	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
12	Solvent cement for ABS piping system	MS 1419 : Part 3 : 1997	Specification for Acrylonitrilebutadiene Styrene (ABS) Pipes and Fittings for Pressure Applications Part 3 : Solvent Cement and Priming (Cleaning) Fluids for Use with ABS Pipes and Fittings	1 January 2008
13	Polypropylene (PP) Pipes	MS 2286-2: 2012	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP)- Part 2: Pipes (ISO 15874-2: 2003, AMD.1: 2007, MOD)	1 January 2013
		ISO 15874 - 2: 2003	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP). Part 2: Pipes  <i>**This standard is recognized for SPAN product listing until 14 April 2017 only</i>	1 January 2008
		ISO 15874 - 2: 2013	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP). Part 2: Pipes	15 April 2015
		DIN 8078: 2008	Polypropylene (PP) Pipes – PP-H, PP-B, PP-R, PP-RCT – General Quality Requirements and Testing	1 June 2009

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
14	Polybutylene (PB) Pipes	MS ISO 15876-2 : 2004, AMD. 1: 2009	Plastics Piping Systems for Hot and Cold Water Installations – Polybutylene (PB) Part 2 : Pipes (ISO 15876-2:2003, MOD)	1 June 2010
		AS/NZS 2642-2: 2008	Polybutylene (PB) Plumbing Pipe Systems – Polybutylene (PB) Pipe for Hot and Cold Water Applications	1 June 2009
15	Glass Reinforced Plastic (GRP) Pipes	ISO 10639: 2004	Plastics Piping System for Pressure and Non-pressure Water Supply – Glass Reinforced Thermosetting Plastics (GRP) Systems Based On Unsaturated Polyester (UP) Resin	1 January 2008
		BS EN 1796: 2013	Plastics Piping System for Water Supply With or Without Pressure – Glass-Reinforced Thermosetting Plastics (GRP) Based on Unsaturated Polyester Resin	10 Sept 2014
16	Steel Pipes	SPAN TS 21827:2013	Specification for Steel Pipes, Fittings and Joints for Water and Sewage Part 1: Technical Delivery Requirements Part 2: Tube Requirements	15 June 2013



<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		MS 1968 : 2007 (confirmed 2011)	Non-Alloy Steel Tubes and Fittings for the Conveyance of Aqueous Liquids Including Water for Human Consumption – Technical Delivery Conditions	1 January 2008
		BS EN 10224 : 2002	Non-Alloy Steel Tubes and Fittings for the Conveyance of Water and Other – Technical Delivery Conditions	1 January 2008
17	Stainless Steel (SS) Pipes – Industrial	MS 1841: 2010	Seamless, Welded and Heavily Cold Austenitic Stainless Steel Pipes – Specification (First Revision)	1 June 2011
		ASTM A312/A312M-11	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	1 January 2008
18	Stainless Steel (SS) Light Gauge Tubes	MS 1988: 2007 (Confirmed: 2011)	Welded Stainless Steel Tubes for the Conveyance of Water and Other Aqueous Liquids – Technical Delivery Conditions and Includes Amendment A1	1 January 2008
		BS EN 10312 : 2002	Welded Stainless Steel Tubes for the Conveyance of Aqueous Liquids Including Water for Human Consumption. Technical Delivery Conditions	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		JIS G 3448: 2012	Light Gauge Stainless Steel Tubes for Ordinary Piping	1 January 2008
19	Ductile Iron (DI) Pipes	MS 1919: 2013	Ductile Iron Pipes, Fittings, Accessories and Their Joints for Water Pipelines – Requirements and Test Methods (First Revision)	1 January 2008
		BS EN 545 : 2010	Ductile Iron Pipes, Fittings, Accessories and Their Joints for Water Pipelines – Requirement and Test Method	1 January 2011
20	Copper Tubes	BS EN 1057: 2006 + A1 : 2010	Copper and Copper Alloys. Seamless, Round Copper Tubes for Water and Gas in Sanitary and Heating Applications	1 January 2008
21	Steel Pipe with Plastic Lining	CJ/T 136: 2001	Steel Pipes of Lining Plastic for Water Supply	10 Sept 2014
<b>(B) Water Fittings</b>				
1	Polyethylene (PE) Fittings	BS EN 12201-3:2011	Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Fittings	1 January 2008
		MS 1058: Part 3: 2006	Polyethylene (PE) Piping Systems for Water Supply – Part 3 : Fittings	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		AS/NZS 4129: 2008	Fittings for Polyethylene (PE) Pipes for Pressure Applications	1 January 2009
2	HDPE Joints Assemblies and Fittings	DIN 16963 : Part 5 : (1999-10)	Pipe Fittings and Joints and Assemblies for PE 80 and PE 100 Polyethylene Pressure Pipes-Part 5: General Quality Requirements and Testing	31 December 2013
3	PE-X Fittings	MS 1736 : Part 3 : 2004	Plastics Piping Systems for Hot and Cold Water Installation – Crosslinked Polyethylene (PE-X): Part 3 Fittings	1 January 2008
		AS 2537 : 1994	Mechanical Jointing Fittings for Use with Cross-Linked Polyethylene (PE-X) Pipe for Hot and Cold Water Applications	10 Sept 2014
4	PE-RT Fittings	ISO 22391 – 3 : 2007	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 3 : Fittings	1 January 2008
		MS 2508-3: 2012	Plastics piping systems for hot and cold water installations – Polyethylene of raised temperature resistance (PE-RT) – Part 3 : Fittings (ISO 22391-3: 2009, MOD)	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
5	PE-RT/AL/PE-RT Fittings	ISO 21003 – 3 : 2008	Multilayer piping systems for hot and cold water installations inside buildings – Part 3 : Fittings	1 January 2009
6	PPO and Macro-Composite Fittings	AS 4176 : 1994	Polyethylene/aluminium and cross-linked polyethylene/aluminium macro-composite pipe systems for pressure applications	10 Sept 2014
		AS 4176.3 : 2010	Multilayer Pipes for Pressure Applications - Multilayer Piping Systems for Hot And Cold Water Plumbing Applications – Fittings	10 Sept 2014
7	Nylon Joints and Compression Fittings for use with HDPE Pipes	BS 5114: 1975 (1981) Amd.2 – 1987	Specification for Performance Requirements for Joints and Compression Fittings for Use with Polyethylene Pipes	1 January 2008
		ISO 14236: 2000	Plastics Pipes and Fittings – Mechanical-Joint Compression Fittings for Use with Polyethylene Pressure Pipes in Water Supply Systems	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
8	Polypropylene (PP) Fittings	ISO 15874 - 3: 2003	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP) – Part 3 : Fittings  <i>**This standard is recognized for SPAN product listing until 14 April 2017 only</i>	1 January 2008
		ISO 15874 - 3: 2013	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP) – Part 3 : Fittings	15 April 2015
		DIN 16962-5: 2000	Pipe fittings and joint assemblies for polypropylene (PP) pressure pipes - Part 5: General quality requirements and testing	1 January 2008
		MS 2286-3: 2012	Plastics Piping Systems for Hot and Cold Water Installations – Polypropylene (PP) – Part 3 : Fittings (ISO 15874-3: 2003, FDAM 1:2009, MOD)	15 June 2013
9	Polybutylene (PB) Fittings	AS/NZS 2642-3: 2008	Polybutylene Pipe Systems – Mechanical Jointing Fittings for Use with Polybutylene (PB) Pipes for Hot and Cold Water Applications	1 January 2009

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		MS ISO 15876 – 3 : 2004	Plastics Piping Systems for Hot and Cold Water Installations – Polybutylene (PB) Part 3 : Fittings	1 January 2008
10	Unplasticized Polyvinylchloride (uPVC) Joints / Fittings	MS 628: Part 2: Section 2.1: 1999	Specification for Unplasticised PVC (uPVC) Pipes for Water Supply : Part 2: Joints and Fittings for Use with uPVC Pipes: Section 2.1: uPVC Joints and Fittings	1 January 2008
		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	1 January 2010
		BS 4346-1: 1969	Joints and Fittings for use with Unplasticised PVC Pressure Pipes. Injection Moulded Unplasticised PVC Fittings for Solvent Welding for use with Pressure Pipes, Including Potable Water Supply	1 January 2010
		BS 4346-2:1970	Joint and Fittings for use with Unplasticised PVC Pressure Pipes. Mechanical Joints and Fittings, Principally of Unplasticised PVC	1 January 2010

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
11	Chlorinated Polyvinylchloride (cPVC) Fittings	ASTM D2846 / D2846M – 09b	Standard Specification for Chlorinated Polyvinyl Chloride (cPVC) Plastic Hot and Cold Water Distribution System.	1 January 2008
		MS 1757 : Part 2 : 2008	Chlorinated Poly (Vinyl Chloride) (PVC-C) - Plastic Piping System - Part 2: Specification for Schedule 40 Socket-type Pipe Fittings.	1 January 2009
		MS 1757 : Part 3 : 2008	Chlorinated Poly (Vinyl Chloride) (PVC-C) – Plastic Piping System – Part 3 : Specification for Schedule 80 Pipe Fittings.	1 January 2009
		MS 2045 : 2007	Chlorinated Poly (Vinyl Chloride) (PVC-C) Plastic Hot-and-Cold-Water Distribution Systems – Specification.	1 January 2008
12	Oriented Unplasticized Polyvinylchloride (PVC-O) Fittings	ISO 16422 : 2006	Pipes and Joints Made of Oriented Poly (Vinyl Chloride) (PVC-O) for the Conveyance of Water under Pressure – Specifications	10 Sept 2014
13	Acrylonitrile-Butadiene-Styrene (ABS) Fittings	MS 1419: Part 1: 2007	Acrylonitrile-Butadiene Styrene (ABS) Piping Systems for Pressure Applications – Part 1: Specification for Compounds, Pipes and Fittings (First Revision)	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		AS/NZS 3518: 2004	Acrylonitrile Butadiene Styrene (ABS) Compounds, Pipes and Fittings for Pressure Application	1 January 2008
14	Glass Reinforced Plastic (GRP) Fittings	ISO 10639: 2004	Plastics Piping System for Pressure and Non-pressure Water Supply – Glass Reinforced Thermosetting Plastics (GRP) Systems Based On Unsaturated Polyester (UP) Resin	1 January 2008
		BS EN 1796: 2013	Plastics Piping System for Water Supply With or Without Pressure – Glass-Reinforced Thermosetting Plastics (GRP) Based on Unsaturated Polyester Resin	10 Sept 2014
15	Steel Pipe Specials	SPAN TS 21827:2013	Specification for Steel Pipes, Fittings and Joints for Water and Sewerage Part 1: Technical Delivery Requirements Part 2: Tube Requirements	15 June 2013
		MS 1968 : 2007	Non-alloy steel tubes and fittings for the conveyance of aqueous liquids including water for human consumption – technical delivery conditions	1 January 2008



<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
16	Stainless Steel (SS) Threaded Fittings	ISO 4144: 2003	Pipework – Stainless Steel Fittings Threaded in Accordance with ISO 7-1	1 January 2008
		MS 2495: 2012	Pipework – Stainless Steel Fittings Threaded in Accordance with MS 1989: Part 1 (ISO 4144:2003, MOD)	1 January 2013
17	Stainless Steel (SS) Welded Fittings	MS 1842: 2010	Wrought Austenitic Stainless Steel Piping Fittings – Specification (First Revision)	1 January 2011
		ASTM A403/A403M-13a	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	1 January 2008
18	Stainless Steel (SS) Press Fittings	SAS 322: 2003	Pipe Coupling Performance Standards for Stainless Steel Pipes for General Piping	1 January 2008
19	Ductile Iron Fittings	MS 1919: 2006	Ductile Iron Pipes, Fittings, Accessories and Their Joints for Water Pipelines – Requirement and Test Method	1 January 2008
		BS EN 545 : 2010	Ductile Iron Pipes, Fittings, Accessories and Their Joints for Water Pipelines – Requirement and Test Method	1 January 2011

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
20	Copper & Copper Alloys Fittings	BS EN 1254-1: 1998	Copper and Copper Alloys. Plumbing Fittings. Fittings with Short Ends for Capillary Brazing to Copper Tubes.	1 January 2008
		BS EN 1254-2: 1998	Copper and Copper Alloys. Plumbing Fittings. Fittings with Compression Ends for Use with Copper Tubes.	1 January 2008
		BS EN 1254-3: 1998	Copper and Copper Alloys. Plumbing Fittings. Fittings with Compression Ends for Use with Plastic Pipes.	1 January 2008
		BS EN 1254-4: 1998	Copper and Copper Alloys. Plumbing Fittings. Fittings Combining Other End Connections with Capillary or Compression Ends.	1 January 2008
		BS 8537: 2010	Copper and Copper Alloys. Plumbing Fittings. Specification for Press Ends of Plumbing Fittings for Use with Metallic Tubes	10 Sept 2014
		AS 3688: 2005	Water Supply – Metallic Fittings and End Connectors	15 April 2015
21	Steel Fittings with Plastic Lining	CJ/T 137: 2001	Malleable Iron Threaded Fittings of Lining Plastic for Water Supply.	10 Sept 2014

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
22	Variable Adapter	Spesifikasi JKR 20200-0045-99	JKR Standard Specification for Detachable Joints and Variable Adaptors for uPVC, Ductile Iron and AC Pipes.	1 January 2008
23	Flange Adapter	Spesifikasi JKR 20200-0048-99	JKR Standard Specification For Flexible Couplings and Flange Adaptors	1 January 2008
24	Flexible Coupling	Spesifikasi JKR 20200-0048-99	JKR Standard Specification For Flexible Couplings and Flange Adaptors	1 January 2008
25	Detachable Joint	Spesifikasi JKR 20200-0045-99	JKR Standard Specification for Detachable Joints and Variable Adaptors for uPVC, Ductile Iron and AC Pipes	1 January 2008
26	Ferrous Saddle	Spesifikasi JKR 20200-0044-99	JKR Standard Specification for Ferrous Saddles	1 January 2008
		JKR Spec. 20200-0184-04	JKR Standard Spesification for Ferrous Saddles	10 Sept 2014
27	Pillar Hydrant	Spesifikasi JKR 20200-0042-99	JKR Standard Specification for Ductile Iron Pillar Hydrants	1 January 2008
		MS 1395: 2011	Pillar Fire Hydrants: Specification (First Revision)	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
28	Ductile Iron (DI) Strainer	Spesifikasi JKR 20200-0100-01	JKR Standard Specification for Ductile Iron Y and T Strainers (DN 50 to DN 600)	1 January 2008
29	Swivel Ferrules	Spesifikasi JKR 20200-0174-04	JKR Standard Specification for Ferrules	1 January 2008
30	Under Pressure Vertical Ferrules	MS 1396: 2006	Ferrules – Specification (First Revision)	1 January 2008
31	Polypropylene (PP) Tapping Ferrules	Spesifikasi JKR 20200-0055-99	JKR Standard Specification for Polypropylene (PP) Tapping Ferrules to be used with Polyethylene (PE) and uPVC Pipes	1 January 2008
32	Manhole Cover	BS EN 124 : 1994	Gully Tops and Manhole Tops for Vehicular and Pedestrian Areas. Design Requirements, Type Testing, Marking, Quality Control	1 January 2008
33	Polypropylene (PP) Clamp Saddle	Spesifikasi JKR No. 1-95 (BA)	JKR Standard Specification for Polypropylene (PP) Clamp Saddle to be used with Polyethylene (PE) Pipe	15 April 2015
34	Vulcanized Rubber Pipe Joint Seals	BS EN 681-1: 1996	Elastomeric Seals – Material Requirements for Pipe Joint Seals used in Water and Drainage Application. Part 1: Vulcanized Rubber	15 April 2015

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
<b>(C) Service Reservoir</b>				
1	Cylindrical Double Fold System	BS 5950-1:2000	Structural Use of Steelwork in Building Part 1: Code of Practice for Design Rolled and Welded Section	1 January 2008
2	Glass Coated /Glass Lined /Glass Fused /Epoxy Coated /Epoxy Lining	AWWA D103-97, ANSI/AWWA D103-09	Factory-Coated Bolted Steel Tanks for Water Storage	1 January 2008
		ISO 28765: 2008	Vitreous and Porcelain Enamels – Design of Bolted Steel Tanks for the Storage org7 Treatment of Water or Municipal or Industrial Effluents and Sludges	1 January 2008
<b>(D) Storage Cistern</b>				
1	Cylindrical Double Fold System	BS 5950-1: 2000	Structural Use of Steelwork in Building Part 1: Code of Practice for Design – Rolled and welded Section	1 January 2008
2	Glass Coated / Glass Lined / Glass Fused / Epoxy Coated / Epoxy Lining	AWWA D103-97, ANSI/AWWA D103-09	Factory-Coated Bolted Steel Tanks For Water Storage	1 January 2008
		ISO 28765: 2008	Vitreous and Porcelain Enamels – Design of Bolted Steel Tanks for the Storage org7 Treatment of Water or Municipal or Industrial Effluents and Sludges	1 January 2009

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
3	PE / HDPE Tanks Storage Tank	MS 1225: Pt 1: 2007 AMD 1: 2011	Polyethylene (PE) Tanks For Cold Water Storage; Part 1: Capacity up to 600G (second Revision)	1 January 2008
		MS 1225: Pt 2: 2006 AMD. 1:2011	Polyethylene (PE) Tanks For Cold Water Storage; Part 2: Capacity more than 600G (First Revision)	1 January 2008
4	GRP/FRP Sectional Water Tank	MS 1390 : 2010	Glass-fibre Reinforced Polyester Panels and Panel Water Tanks - Specification (First Revision)	1 January 2011
5	Corrugated Steel Panel With Polyethylene-Lined Water Storage Tank	BS 1449- 1.1: 1991	Steel Plate, Sheet & Strip. Carbon and carbon-manganese plate, sheet and strip general specification	1 January 2008
		SS 245:1995 (Cl. 10.2.1 & Cl 10.2.2)	Specification for Glass Reinforced Polyester Sectional Water Tank	1 January 2008
6	FRP One-Piece Water Tank	BS EN 13280 : 2001	Specification for glass fibre reinforced cistern of one-piece and sectional construction for storage above ground of cold water	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		MS 1241 : 2011	One Piece Glass Fibre Reinforced Polyester (GRP) Water Tanks Nominal Capacity of 100 000 Litres and Below-Specification (First Revision)	1 January 2008
7	Pressed Steel Sectional Rectangular Tank Panel	BS 1564 : 1975	Specification for Pressed Steel Sectional Rectangular Tanks	1 January 2008
8	Stainless Steel Storage Tank	JKR 20200- 0041-99	Stainless Steel Water Tanks (With Effective Capacity Up to 15,000L)	1 January 2008
9	Stainless Steel Storage Tank (Rectangular / Panel Tank)	CNS 9443 : 2000	Stainless Steel Storage Tanks	1 January 2008
<b>(E) Valves</b>				
1	Butterfly Valve	BS EN 593 : 2009 +A1:2011	Industrial Valves. Metallic Butterfly Valves	1 January 2008
2	Air Valve	JKR 20200- 0097-01	Ductile Iron Air Valves (Revised Edition 2001)	1 January 2008
		JKR 20200- 0043-99	Ductile Iron Air Valves (Revised Edition 1999)	1 January 2008
		AWWA C512- 07	Air Release, Air/ Vacuum, and Combination Air Valve for Waterworks Service	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		BS EN 1074-4 : 2000	Valves for Water Supply. Fitness for Purpose Requirements and Appropriate Verification Tests. Air Valves	1 January 2008
3	Gate Valve	MS 1049 : 1986	Specification for Double Flanged Cast Iron Wedge Gate (sluice) valves for waterworks purposes	1 January 2008
		BS EN 12288 : 2010	Industrial Valves. Copper Alloy Gate Valves	1 January 2011
		BS EN 1171 : 2002	Industrial Valves. Cast Iron Gate Valves	1 January 2008
		JKR 20200-0077-00	Ductile Iron Type B Large Sluice Valves (DN700-DN1800)	1 January 2008
		BS 5163-1 : 2004	Valves for Waterworks Purposes. Predominantly key-operated cast iron gate valves. Code of practice	1 January 2008
		BS 5163-2 : 2004	Valves for Waterworks Purposes. Stem Caps for use on isolating valves and associated water control apparatus. Specification	1 January 2008
		BS EN 1074-2 : 2000	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Isolating valves	1 January 2008



<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
4	Check Valve	BS EN 12334 : 2001	Industrial Valves. Cast Iron Check Valves	1 January 2008
		BS EN 14341 : 2006	Industrial Valves. Steel Check Valves	1 January 2008
		BS EN 12288 : 2010	Industrial valves. Copper Alloy Gate Valve	1 January 2008
		BS EN 1074-3 : 2000	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Check valves	1 January 2008
		AWWA C508 - 2009	Swing-Check Valves for Waterworks Service, 2 In. (50 mm) Through 24 In. (600 mm) NPS	1 January 2008
5	Control Valve	BS EN 1074-5:2001	Valves for Water Supply – Fitness Purpose Requirements and Appropriate Verification Tests. Part 5 : Control Valve	1 January 2008
		AWWA C530-07	Pilot-operated control valve	1 January 2012
6	Stop Valve	MS 1022 : 2005	Stopvalves – Specification (First Revision)	1 January 2008
		BS 6675 : 1986	Specification for servicing valves (copper alloy) for water services	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		BS EN 1213 : 2000	Building Valves. Copper alloy stopvalves for potable water supply in buildings. Test & Requirements	1 January 2008
		JKR 20200-0056-99	Specification of Mechanical Stop Valve for Water Supply Usage  <i>**This standard is recognized for SPAN product listing until 9 September 2016 only</i>	1 January 2008
		JKR 20200-0172-04	JKR Standard Specification for Stop Valves (Revised Edition 2004)	10 Sept 2014
7	Ball Valves	BS 1212 : Part 1 : 1990	Float Operated Valves. Specification for Piston Type Float Operated valves (Copper Alloy Body)	1 January 2008
		BS 1212 : Part 2 : 1990	Float Operated Valves. Specification for Diaphragm Type Float Operated Valves (Copper Alloy) (Excluding Float)	1 January 2008
8	Landing Valve	MS 1210: Part 1: 1991 (Confirmed : 2011)	Specification for Fire Hydrant Systems Equipment – Part 1: Landing Valves for Wet Risers	1 January 2008

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		MS 1210: Part 2: 1991 (Confirmed : 2011)	Specification for Fire Hydrant Systems Equipment – Part 2: Landing Valves for Dry Risers	1 January 2012
		BS 5041 : Pt 1 : 1987	Fire Hydrant Systems Equipment. Specification for landing valves for wet risers	1 January 2008
		BS 5041 : Pt 3 : 1975	Fire Hydrant System Equipment. Specification for Inlet Breeching for Dry Riser Inlets	1 January 2008
9	Mixing Valve (Manually Operated)	BS EN 1286 : 1999	Sanitary Tapware. Low Pressure Mechanical Mixing Valves. General Technical Specification	1 January 2008
10	Float Operated Valve	MS 1882 : 2005	Piston Type Float Operated Valves – Specification	1 January 2008
		JKR 20200-0059-99	Piston Type Float Operated Valve (Revised Edition 1999)  <i>**This standard is recognized for SPAN product listing until 9 September 2016 only</i>	1 January 2008
		JKR 20200-0178-04	JKR Standard Specification for Piston Type Float Operated Valves (Revised Edition 2004)	10 Sept 2014

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
11	Pressure Reducing Valves	BS EN 1567 : 2000	Building Valves. Water Pressure Valves and Combination Water Reducing Valves. Requirements and Test.	1 January 2008
12	Plug Valve	AWWA C517 - 09	Resilient-Seated Cast-Iron Eccentric Plug Valves	1 January 2013
13	Penstock	BS 7775 : 2005	Penstocks for use in Water and Other Liquid Flow Applications. Specification	1 January 2008
		JKR 20200-0108-01	JKR Standard Specification for Penstocks (Revised Edition 2001)	1 January 2008
14	Globe Valve	BS EN 13789 : 2002	Industrial Valves: Cast Iron Globe Valve	10 Sept 2014
15	Knife Gate Valve	MSS SP-81-2000	Stainless Steel, Bonnetless, Flanged Knife Gate Valve	10 Sept 2014
<b>(F) Back flow preventer</b>				
1	Dual Check Backflow Preventer	BS EN 14454 : 2005	Devices to prevent pollution by backflow of potable water. Hose Union backflow preventer DN15 to DN32 inclusive. Family H, Type A	1 January 2008
		AS/NZS 3500.1:2003/ Amdt 2:2010	Plumbing and drainage - Water Services	1 January 2008

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
2	Reduced Pressure Zone Assembly	BS EN 12729 : 2002	Devices to prevent pollution by backflow of potable water. Controllable backflow preventer with reduced pressure zone. Family B, Type A	1 January 2008
		AS/NZS 3500.1:2003/ Amdt 2:2010	Plumbing and drainage - Water Services	1 January 2008
3	Cast Iron Check Valves	BS EN 12334 : 2001	Industrial Valves. Cast Iron Check Valves.	1 January 2008
4	Steel Check Valves	BS EN 14341 : 2006	Industrial Valves. Steel Check Valves	1 January 2008
5	Copper Alloy Globe, Globe Stop, Check and Gate Valves	BS EN 12288 : 2010	Industrial Valve. Copper Alloy Gate Valve	1 January 2008
<b>(G) Meter</b>				
<i>(a) Custody Transfer Meter</i>				
1	Mechanical Water Meter	ISO 4064-1 : 2005	Measurement of Water Flow in fully charged closed conduits – Meters for Cold Potable Water and Hot Water – Part 1 – Specifications	1 January 2012

PRODUCT CATEGORY A (WATER SUPPLY)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		MS ISO 4064-1 : 2006	Measurement of Water Flow in fully charged closed conduits – Meters for Cold Potable Water and Hot Water – Part 1 – Specification (First revision) (ISO 4064-1:2005, IDT)	1 January 2012
<i>(b) Non-Custody Transfer Meter</i>				
1	Mechanical Water Meter	ISO 4064-1 : 2005	Measurement of Water Flow in fully charged closed conduits – Meters for Cold Potable Water and Hot Water – Part 1 – Specifications	1 January 2012
		MS ISO 4064-1 : 2006	Measurement of Water Flow in fully charged closed conduits – Meters for Cold Potable Water and Hot Water – Part 1 – Specification (First revision) (ISO 4064-1:2005, IDT)	1 January 2012
<p><i>Note: Listing for mechanical water meter shall accompany <b>with Certificate of Pattern Approval</b> (compliance to OIML R49-1) and <b>Certificate of Approval Weighing / Measuring / Weighing Devices / Measuring Devices</b> (issued by SIRIM NMSL).</i></p> <p><i>Meter without Certificate of Pattern Approval and Certificate of Approval Weighing / Measuring / Weighing Devices / Measuring Devices will be listed as for <u>non-custody transfer meter</u> which mean that the meter cannot be “use for trade</i></p>				

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
<b>(H) Sanitary Fittings - Taps &amp; Mixer</b>				
1	Bib Tap / Pillar Tap/ Faucet	BS EN 200 : 2008	Sanitary Tapware. Single Taps and combination Taps For Water Supply Systems of Type 1 and Type 2. General Technical Specification	1 January 2009
		AS / NZS 3718 : 2005	Water Supply – Tap ware	1 January 2008
		MS 1461 : 1999	Specification for draw off taps with metal bodies for water service	1 January 2008
2	Mixer	BS EN 817 : 2008	Sanitary tapware. Mechanical mixing valves (PN 10). General technical specifications.	1 January 2009
		BS EN 1286 : 1999	Sanitary Tapware. Low Pressure Mechanical Mixing Valves. General Technical Specification	1 January 2008
<b>(I) Sanitary Wares - Water Closet</b>				
1	Water Closet	MS 1522 : 2011	Vitreous China Water Closet Pans- Specification (Third Revision)	1 January 2012
<b>(J) Water Closet Flushing Cistern &amp; Flush Pipes</b>				
1	Water Closet Flushing Cistern & Flush Pipes	MS 795-1 : 2011	WC Flushing Cisterns – Part 1: Specification (Second Revision)	1 January 2012

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
<b>(K) Flush Valve</b>				
1	Flush Valve	JKR 20200-0130-01	JKR Standard Specification For Flush Valve	1 January 2008
		BS EN 12541 : 2002	Sanitary Tapware – Pressure Flushing Valves & Automatic Closing Urinal Valves PN 10	1 January 2008
		MS 2545: 2014	Flush Valve: Specification	10 Sept 2014
<b>(L) Sanitary Appliances</b>				
1	Urinal bowls, Pedastal, Bidets, WC Pan	MS 147: 2001	Specification for quality of Vitreous China Sanitary Appliances (First Revision)	1 January 2008
<b>(M) Sanitary Wares – Urinals</b>				
1	Urinals	MS 1799: 2008	Urinals - Specification	1 January 2008
<b>(N) Chemical for Water Treatment</b>				
1.	Aluminium Sulphate	MS 699:2008	Aluminium Sulphate for Use in Potable Water Supply – Specification (Second Revision)	1 January 2009
2.	Polyaluminium Chloride and ACH	MS 1454:2007	Liquid polyaluminium chloride for use in potable water supply – specification (first revision), 2007	1 January 2008



<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
3.	Ferric Chloride	MS 1450:1999	Specification for liquid ferric chloride for potable water treatment	1 January 2008
4.	Ferric Sulphate	MS 1452:1999	Specification for liquid ferric sulphate for potable water treatment	1 January 2008
5.	Polymer Based on PolyDADMAC	MS 1930:2007	Poly(polydiallyldimethyl ammonium chloride) or polyDADMAC for use in potable water supply	1 January 2008
6.	Polymer based on Polyacrylamide	MS 1928:2007	Polyacrylamides for use in potable water supply (specification)	1 January 2008
7.	Polymer based on Polyamine	MS 1929:2007	Polyamines for use in potable water supply (specification)	1 January 2008
8.	Calcium Hydroxide/ Hydrated Lime	MS 1836:2005	Hydrated Lime and slurry lime for use in potable water supply	1 January 2008
9.	Sodium Carbonate / Soda Ash	MS 1551 : 2002	Specification for soda ash (sodium carbonate) used for potable water supply	1 January 2008
10.	Chlorine	MS 171:2003	Specification for liquid chlorine used for potable water supply	1 January 2012
11.	Sodium Hypochlorite	MS 1718:2003	Sodium hypochlorite for use in potable water supply	1 January 2012

<b>PRODUCT CATEGORY A (WATER SUPPLY)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
12.	Calcium Hypochlorite	MS 1584:2003	Specification for calcium hypochlorite use for potable water supply 2003	1 January 2012
13.	Potassium Permanganate	MS 1576: 2003	Specification for potassium permanganate used for potable water supply	1 January 2012
14.	Copper Sulphate	MS 1571:2003	Specification for copper sulphate used for potable water	1 January 2012
15.	Sodium Flouride	MS 1573 : 2003	Specification for sodium fluoride used for potable water supply	1 January 2008
16.	Sodium Silicoflouride	MS 1724: 2004	Sodium silicoflouride for use in potable water supply specification 2004	1 January 2008
17.	Sodium Hydroxide / Caustic Soda	MS 700: 1981	(Specification) for sodium hydroxide (technical grades)	1 January 2008
18.	Sodium Aluminate	MS 1572: 2003	Specification for Sodium Aluminate used for potable water supply	1 January 2008

<b>PRODUCT CATEGORY A (SEWERAGE)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
<b>(A) Package Plant</b>				
1	Package Plant	SPAN TS 1401: 2010 (A1:2013) Part 1	Sewage Treatment System Part 1 : Prefabricated Tanks – Packaged Plants	1 April 2012
		SPAN TS 1402:2010 (A1:2013) Part 2	Sewage Treatment System Part 2 : Construction and Installation – Packaged Plants	1 April 2013
<b>(B) Small Sewage Treatment System</b>				
1	Small Sewage Treatment System	MS 2441 - 2 : 2014	On Site Sewage Treatment Units – Part 2: Packaged Prefabricated Small Sewage Treatment System Specifications	1 June 2015
<b>(C) Septic Tank</b>				
1	Septic tank	MS 2441-1:2012	Onsite sewage treatment units Part 1: Prefabricated septic tanks specifications	18 October 2012
<b>(D) Manhole</b>				
1	Manhole	MS 881: Part 1 :1991	Specification for precast concrete pipes and fittings for drainage and sewerage	1 Januari 2008
<b>(E) Manhole Cover</b>				
1	Manhole cover	BS EN 124 :1994 AMD 8587/1995	Gully tops & manhole tops for vehicular & pedestrian areas design req., type testing, marking, quality control	1 January 2008

PRODUCT CATEGORY A (SEWERAGE)				
No.	Product Type	Standard Number	Standard Title	Effective Date
<b>(F) Pipes &amp; Fittings</b>				
1	Vitrified clay pipe	MS 1061 Part 1: 1999	Vitrified clay pipes and fittings and pipes joints for drains and sewers : Part 1 : Requirement (First Revision)	1 January 2008
		BS EN 295-1:1991	Vitrified clay pipes and fittings and pipe joints for drains and sewers.	1 January 2008
		<u>Jacking pipe</u> BS EN 295-7: 1996	<u>Jacking pipe</u> Vitrified clay pipes and fittings and pipe joints for drains and sewers. Requirements for vitrified clay pipes and joints for pipe jacking	1 January 2008
2	Reinforced concrete pipe	MS 881:Part 1 : 1991	Part 1: Specification for precast concrete pipes and fittings for drainage and sewerage	1 January 2008
		MS 881:Part 2 : 1991	Part 2: Specification for Inspection Chambers and gullies	1 January 2008
		MS 881:Part 3 : 1991	Part 3: Specification for precast reinforced concrete pipes with ogee joints	1 January 2008
		AS 4058 : 1992	Precast concrete pipes (pressure and non-pressure)	1 January 2008

PRODUCT CATEGORY A (SEWERAGE)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		<u>Jacking pipe</u> MS EN 1916: 2011	<u>Jacking pipe</u> Concrete pipes and fittings, unreinforced, steel fibre and reinforced (first revision)	1 January 2008
		BS 5911-1: 2002	Concrete pipes and ancillary concrete products	1 January 2008
3	HDPE pipe	<u>Profile Wall</u> DIN 16961:Part 1:2000 DIN 16961:Part 2 : 2000	<u>Profile Wall (double wall corrugated)</u> Thermoplastics pipes and fittings with profiled wall and smooth pipe inside	1 January 2008
		<u>Solid Wall</u> MS 1058: Part 2: 2005	<u>Solid Wall</u> Specification for Polyethylene (PE) piping systems for water supply Part 2: Pipes	1 January 2008
		ISO 4427-2: 2007: AMD 1:2011	Plastics Piping Systems – Polyethylene (PE) Pipes and Fittings for Water Supply – Part 2 : Pipes	1 January 2012
4	HDPE fittings	MS 1058: Part 3: 2005	Specification for Polyethylene (PE) piping systems for water supply Part 3: Fittings	1 January 2008
		EN 12201-3:2003	EN 12201-3:2003 (Polyethylene (PE) Fittings For Water Supply)	31 December 2013

PRODUCT CATEGORY A (SEWERAGE)				
No.	Product Type	Standard Number	Standard Title	Effective Date
5	Polypropylene pipe (PP)	<u>Profile Wall</u> DIN 16961: Part 1:2000	Thermoplastics pipes and fittings with profiled wall and smooth pipe inside - Part 1: Dimensions	1 January 2008
6	Ductile iron pipe	BS EN 598:2007+A 1:2009	Ductile iron pipes, fittings, accessories and their joints for sewerage applications. Requirements and test methods	1 January 2008
7	Glass-fibre reinforced pipe	ISO 10467:2004	Plastic Piping System for pressure and non-pressure drainage and sewerage-Glass-reinforced thermosetting plastic (GRP) systems based on unsaturated polyester (UP) resin	1 January 2008
		ISO 10467:2004/ Amd. 1:2012 (E)	Plastic Piping Systems for pressure and non-pressure drainage and sewerage-Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin (AMENDMENT 1)	31 Julai 2015
		BS EN 14364:2013	Plastics piping systems for drainage and sewerage with or without pressure. Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP). Specifications for pipes, fittings and joints	1 January 2014

PRODUCT CATEGORY A (SEWERAGE)				
No.	Product Type	Standard Number	Standard Title	Effective Date
		<u>Jacking pipe</u> ISO 25780: 2011	<u>Jacking pipe</u> Plastic Piping systems for pressure and non-pressure water supply, irrigation, drainage or sewerage – Glass-reinforced thermosetting plastic (GRP) systems based on unsaturated polyester (UP) resin – Pipes with flexible joints intended to be installed using jacking techniques.	1 July 2013
8	PVC pipe (PVC-U, PVC-M, PVC-C)	MS 979: Part 1 :1985	Specification for unplastizies sewerage pipe and fitting Part 1: pipes of diameter 100mm and 155mm	1 January 2008
		MS 979: Part 2: 1985	Specification for unplastizies sewerage pipe and fitting Part 2: Pipes of diameter 200mm and above	1 January 2008
		MS 628: Part 1:1999 AMD 2:2002	Specification for Unplasticised PVC (uPVC) Pipes for Water Supply:Part1:Pipes (First Revision)	1 January 2008
		MS 628: Part 2: Seection 2.1:1999	Specification for Unplasticised PVC (uPVC) Pipes for Water Supply:Part 2: Joint and Fittings for use with uPVC Pipes:Section 201: uPVC Joints and Fittings	1 January 2008

<b>PRODUCT CATEGORY A (SEWERAGE)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		BS EN 1401-1:2009	Plastic piping systems for non-pressure underground drainage and sewerage. Unplasticized poly(vinyl chloride) (PVC-U) Specifications for pipes, fittings and the system	1 January 2008
9	ABS pipe & fittings	MS 1419 : Part 1:2007	Specification for acrylonitrile butadiene styrene (ABS) pipes and fittings for pressure application Part 1: Specification for Compounds, Pipes and Fittings (First Revision)	1 January 2008
		MS 1419 : PART 2 : 1997	Acrylonitrile butadiene styrene (ABS) fittings for pressure application	1 January 2008
		MS 1419 : PART 3 : 1997	Acrylonitrile butadiene styrene (ABS) Solvent Cement	1 January 2008
		AS/NZS 3518:2004	Acrylonitrile butadiene styrene (ABS) compounds, pipes and fittings for pressure applications	1 January 2008
10	Steel Pipes	SPAN TS 21827: 2013	Specification for Steel Pipes, Fittings and Joint for Water and Sewerage Part 1 : Technical Delivery Requirements)	15 June 2013



<b>PRODUCT CATEGORY A (SEWERAGE)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
11	Stainless Steel Pipes	ASTM A 312/A 312M – 2011	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	1 January 2012
12	Stainless Steel Fittings	ASTM A403-13	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	1 January 2012
13	Cast Iron Pipes & Fittings	ISO 6594 :2006	Cast Iron Pipes & Fittings - Spigot Series	1 January 2008
<b>(G)Penstock &amp; Valves</b>				
1	Penstock (Wall mounted, channel type, weir gate)	BS7775: 2005	Penstocks for use in water and other liquid flow applications. Specification	1 January 2008
		KR 20200-0061-2000	JKR Standard Specification For Penstocks	1 January 2008
2	Gate valve	MS 1049:1986	Specification for double flanged cast iron wedge gate (sluice) valves for waterworks purposes	1 January 2008
		BS 5163-1:2004	Valves for waterworks purposes. Stem caps for use on isolating valves and associated water control apparatus. Specification	1 January 2008

<b>PRODUCT CATEGORY A (SEWERAGE)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		EN 1074-2:2000	Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 2: Isolating valves	1 January 2008
		BS EN 1171:2002	Industrial valves. Cast iron gate valves	1 January 2008
3	Check valve	BS EN 12334:2001	Industrial valves. Cast iron check valves	1 January 2008
		AWWA C508-2009	Swing Check Valve for Waterworks Service	1 January 2013
		BS EN 1074-3 : 2000	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Check valves	1 January 2008
4	Plug Valve	AWWA C517-2009	Resilient-Seated Cast-Iron Eccentric Plug Valves	1 January 2013
5	Butterfly valve	BS EN 593:2004	Industrial valves. Metallic butterfly valves	1 January 2008
6	Knife Gate Valve	MSS SP-81-2000	Stainless Steel, Bonnetless, Flanged Knife Gate Valve	1 January 2014
7	Air Valve	JKR 20200-0097-01	Ductile Iron Air Valves (Revised Edition 2001)	1 Nov 2014
		JKR 20200-0043-99	Ductile Iron Air Valves (Revised Edition 1999)	1 Nov 2014

<b>PRODUCT CATEGORY A (SEWERAGE)</b>				
<b>No.</b>	<b>Product Type</b>	<b>Standard Number</b>	<b>Standard Title</b>	<b>Effective Date</b>
		BS EN 1074-4 : 2000	Valves for Water Supply. Fitness for Purpose Requirements and Appropriate Verification Tests. Air Valves	1 Nov 2014
		AWWA C512-07	Air Release, Air/ Vacuum, and Combination Air Valve for Waterworks Service	1 Sept 2015

## APPENDIX B

### PRODUCT CATEGORY B AND TESTING/PERFORMANCE REQUIREMENTS FOR REGISTRATION

PRODUCT CATEGORY B (WATER SUPPLY)			
No.	Product Type	Requirements	Effective Date
1	Lining/coating/ waterproofing/ sealant/ adhesive	<p>MS 1583 - Part 1 : 2003: 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 : Part 1 : Specification</p> <p>BS 6920 – 1 : 2000: 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 : Specification</p> <p>AS/NZS 4020: 2005: Testing of Products for Use in Contact with Drinking Water</p> <p>SS 375: Part 1: 2001: Specification for 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 : Part 1 : Specification</p>	<p>1 January 2008</p> <p>1 January 2008</p> <p>1 January 2008</p> <p>10 September 2014</p>
<p><i>Note:</i> For the test report that using standards <b>MS 1583 - Part 1 : 2003</b> or <b>BS 6920 - 1 : 2000</b>, the report must complete with the tests as below:</p> <ol style="list-style-type: none"> <li>1. <i>Odour and flavour water</i></li> <li>2. <i>Appereance of water</i></li> <li>3. <i>Growth of aquatic microorganisms test</i></li> <li>4. <i>The extraction of substances that may be concern to public health</i></li> <li>5. <i>The extraction of metals</i></li> </ol>			

<b>PRODUCT CATEGORY B (WATER SUPPLY)</b>			
<b>No.</b>	<b>Product Type</b>	<b>Requirements</b>	<b>Effective Date</b>
2	Imported Chemicals for Water Treatment: <ul style="list-style-type: none"> <li>• Soda Ash</li> <li>• Potassium permanganate</li> <li>• Polymers</li> <li>• Chlorine Dioxide</li> </ul>	NSF/ANSI 60-2011: Drinking water treatment chemical – Health Effects  BS EN 12671-2009 : Chemical used for treatment of water intended for human consumption	1 January 2010
3	Onsite Hypochlorite Generation	Assessment for performance/ treatment efficiency is made through a pilot project	1 January 2010
4	Tank <ul style="list-style-type: none"> <li>• Cylindrical Double fold System</li> <li>• Corrugated Steel Panel With Polyethylene-Lined Water Storage Tank</li> </ul>	BS 5950-1:2000: Structural Use of Steelwork in Building Part 1: Code of Practice for Design – Rolled and Welded Section  BS 1449:Pt 1: 1991: Steel Plate, Sheet & Strip. Carbon and carbon-manganese sheet and strip  or  SS 245:1995 (Cl. 10.2.1 & Cl 10.2.2): Specification for Glass Reinforced Polyester Sectional Water Tank	1 January 2008
5	Pilot control valve	AWWA C530-12 : Pilot-operated control valves	1 October 2015
6	Pump	ISO 9906:1999 / ISO 9906:2012 or Rotodynamic pumps – Hydraulic Performance Acceptance Tests – Grades 1 and 2	1 January 2009

PRODUCT CATEGORY B (WATER SUPPLY)			
No.	Product Type	Requirements	Effective Date
		BS EN ISO 5198:1987 - Centrifugal, mixed flow and axial pumps. Code for hydraulic performance tests. Precision class	1 October 2014
		JIS B8301:2000 - Rotodynamic pumps - Hydraulic performance acceptance tests - Grades 1 and 2	1 October 2015
7	Electromagnetic / Ultrasonic Flowmeter	<p>OIML R 49-1: Water Meters Intended for the metering of Cold Potable Water and Hot Water Part 1 : Metrological and technical requirement</p> <p><i>Note:</i>  Application for custody transfer meter shall be attached <b>with Certificate of Approval Weighing / Measuring / Weighing Devices / Measuring Devices</b> (produced by SIRIM NMSL). Meter without Certificate of Approval Weighing / Measuring / Weighing Devices / Measuring Devices will be registered as for <u>non-custody transfer meter</u> which mean that the meter cannot be “use for trade”</p>	1 January 2010
8	Small/Compact/ Package Water Treatment System	Assessment for performance/ treatment efficiency is made through a pilot project (please refer to procedures to carry out a pilot installation/project for water supply system)	1 January 2010

<b>PRODUCT CATEGORY B (WATER SUPPLY)</b>			
<b>No.</b>	<b>Product Type</b>	<b>Requirements</b>	<b>Effective Date</b>
9	Valves: <ul style="list-style-type: none"> <li>Beyond the range of diameter specified in the standard</li> </ul>	BS EN 12266 – 1: 2003 : Industrial valves - Testing of valves - Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements  And  BS EN 681 – 1: 1996 : Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Vulcanized rubber  And One of the following standards: <ol style="list-style-type: none"> <li>BS 6920 – 1: 2000: 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 : Specification</li> <li>BS 6920 – 1: 2000: 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 : Specification</li> <li>AS/NZS 4020: 2005: Testing of Products for Use in Contact with Drinking Water</li> <li>SS 375: Part 1: 2001: Specification for 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 : Part 1 : Specification</li> </ol>	1 November 2014

<b>PRODUCT CATEGORY B (WATER SUPPLY)</b>			
<b>No.</b>	<b>Product Type</b>	<b>Requirements</b>	<b>Effective Date</b>
10	Knife Gate Valve <ul style="list-style-type: none"> <li>• Ductile Iron (DI)</li> </ul>	MSS SP-81-2000: Stainless Steel Bonnetless, Flanged Knife Gate Valve	23 October 2014
11	Ferrous Saddle <ul style="list-style-type: none"> <li>• For Ductile Iron (DI) material</li> </ul>	JKR Spec. 20200-0184-04: JKR Standard Specification for Ferrous Saddle	1 November 2014
12	Stainless Steel (SS) Press Fittings	SAS 322: 2003: Pipe Coupling Performance Standards for Stainless Steel Pipes for General Piping	17 August 2015
13	New Innovative System/Product for Treatment of Water, Storage of Water or Conveyance of Water	Assessment for performance/treatment efficiency is made through a pilot project (please refer to procedures to carry out a pilot installation/project for water supply system)	1 January 2010



<b>PRODUCT CATEGORY B (SEWERAGE)</b>			
<b>No.</b>	<b>Product Type</b>	<b>Requirements</b>	<b>Effective Date</b>
1	Pump (Centrifugal-submersible, end suction, self priming)	BS EN ISO 5198: Centrifugal, mixed flow and axial pumps. Code for hydraulic performance tests. Precision class	1 January 2008
		BS EN ISO 9905: Technical specifications for centrifugal pumps. Class I	1 January 2008
		BS EN ISO 5199: Technical specifications for centrifugal pumps. Class II	1 January 2008
		BS EN ISO 9908: Technical specifications for centrifugal pumps. Class III	1 January 2008
		ISO 9906: Rotodynamic pumps. Hydraulic performance acceptance tests - Grades 1 and 2	1 January 2008
		JIS B 8325: Submersible Motor Pumps for Sump	1 January 2008
2	Metering Pump	GB/T 7782-2008: Metering Pumps	1 January 2008
3	Pump (Positive displacement - screw, lobe)	BS EN 14343: Rotary positive displacement pumps. Performance tests for acceptance	1 January 2008

PRODUCT CATEGORY B (SEWERAGE)			
No.	Product Type	Requirements	Effective Date
4	Surface aerator, brush aerator, paddle wheel aerator, hydrojet aerator, ejector, aspirating aerator, submersible aerator, diffuser	<p>BS EN 12255-15: Wastewater treatment plants. Measurement of the oxygen transfer in clean water in aeration tanks of activated sludge plants</p> <p>ASCE/EWRI 2-06: Measurement of oxygen transfer in clean water</p> <p><i>(Note: Standards for material is subject to manufacturer recommendations)</i></p>	1 January 2008
5	Mixer, Agitator	ISO 21630: Pumps Testing. Submersible mixers for wastewater and similar applications	1 January 2008
6	Air blower	<u>For blowing application</u>	
		JIS B 8341: Testing methods for displacement compressors.	1 January 2008
		JB/T 8941.2-1999 (Roots Type Blowers for General Purpose) Part 2: Performance test methods.	31 December 2013
		KS B 6350:2008 Testing Method for Turbo Blowers and Compressor.	1 November 2012
		BS ISO 1217:1996 Displacement compressors. Acceptance tests	15 June 2015

PRODUCT CATEGORY B (SEWERAGE)			
No.	Product Type	Requirements	Effective Date
7	Vacuum pump	BS ISO 21360 Vacuum technology. Standard methods for measuring vacuum-pump performance. General description	1 January 2008
8	Sewer liner	<p><u>CIPP</u></p> <p>BS EN ISO 11296 Part 1 – 4: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Lining with cured-in-place pipes</p> <p>ASTM F2019-03: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)</p> <p>ASTM D5813: Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems</p> <p><u>FRP slip lining &amp; HDPE lining</u></p> <p>BS EN ISO 11296 Part 1 – 4: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Lining with cured-in-place pipes</p> <p>BS EN ISO 178: Plastics Determination of flexural properties</p>	1 January 2008

<b>PRODUCT CATEGORY B (SEWERAGE)</b>			
<b>No.</b>	<b>Product Type</b>	<b>Requirements</b>	<b>Effective Date</b>
9	Actuator (Reference's document for Public STP)	SPAN TS 1701 : 2015 : Technical Specification for Instrumentation and Control – Part 1 : Actuator	1 September 2015

## APPENDIX C

### SPAN Additional Requirements for Water Supply Products

No.	Product Name	Recognized Standards	SPAN Additional Requirements
A. PIPES			
1	Polyethylene (PE) Pipe	<ol style="list-style-type: none"> <li>1. MS 1058: Part 2: 2005</li> <li>2. ISO 4427-2 : 2007</li> <li>3. DIN 8075 (1999 – 08)</li> </ol>	<ol style="list-style-type: none"> <li>1. Minimum rating for PE Pipe is PN 12.5</li> <li>2. Polyethylene Pipe (PE) product should have a blue marking stripe (blue stripes) on the pipe as an identification for water supply usage. The blue stripes must comply with the following condition:-               <ol style="list-style-type: none"> <li>a. mixture of compound used to produce the blue stripes have to use the same PE polymers with the original PE polymers (PE 80/PE 80 or PE 100/PE 100) as used in the manufacture of the PE pipe</li> <li>b. PE 80 blue (light blue) compound should be used for PE 80 pipe and PE100 (dark blue) stripe for PE100 pipe in order to identify the classification of PE material</li> <li>c. Minimum number of stripes shall be 4 spaced at 90° interval</li> <li>d. Thickness of stripes should be less than 10% of the wall thickness of the pipe</li> </ol> </li> </ol>
2	Unplasticized Polyvinylchloride (uPVC) Pipes	<ol style="list-style-type: none"> <li>1. MS 628: Part 1: 1999 AMD.1: 2001 &amp; AMD.2: 2002</li> <li>2. MS 762: 2007, AMD.1: 2010</li> <li>3. BS EN ISO 1452-2: 2009</li> </ol>	<ol style="list-style-type: none"> <li>1. UPVC pipes should be used together with the UPVC Fittings and solvent cement of the same brand</li> <li>2. Minimum rating for uPVC pipe is PN 12</li> </ol>

No.	Product Name	Recognized Standards	SPAN Additional Requirements
3	Acrylonitrile-Butadiene-Styrene (ABS) Pipes	<ol style="list-style-type: none"> <li>MS 1419: Part 1: 2007</li> <li>AS/NZS 3518 : 2004</li> </ol>	<ol style="list-style-type: none"> <li>ABS pipes should be used together with the ABS Fittings and solvent cement of the same brand</li> <li>Minimum rating for ABS pipe is Class 12</li> </ol>
<b>B. FITTING</b>			
1	Unplasticized Polyvinylchloride (uPVC) Fittings	<ol style="list-style-type: none"> <li>MS 628: Part 2: Section 2.1: 1999</li> <li>BS EN ISO: 1452-3: 2009</li> <li>BS 4346-1: 1969</li> <li>BS 4346-2: 1970</li> </ol>	<ol style="list-style-type: none"> <li>UPVC Fittings should be used together with the UPVC pipes and solvent cement of the same brand</li> </ol>
2	Acrylonitrile-Butadiene-Styrene (ABS) Fittings	<ol style="list-style-type: none"> <li>MS 1419: Part 1: 2007</li> <li>AS/NZS 3518: 2004</li> </ol>	<ol style="list-style-type: none"> <li>ABS Fittings should be used together with the ABS pipes and solvent cement of the same brand</li> </ol>
<b>C. SOLVENT CEMENT</b>			
1	ABS Solvent Cement	<ol style="list-style-type: none"> <li>MS 1419 : PT 3 : 1997</li> </ol>	<ol style="list-style-type: none"> <li>ABS Solvent Cement should be used together with the ABS pipes and ABS Fittings of the same brand</li> </ol>
2	UPVC Solvent Cement	<ol style="list-style-type: none"> <li>MS 628 : Part 2 : Section 2.2 : 1999</li> </ol>	<ol style="list-style-type: none"> <li>UPVC Solvent Cement should be used together with the UPVC pipes and UPVC Fittings of the same brand</li> </ol>
<b>D. WATER TANK</b>			
1	Cylindrical Steel Tank – Double Fold System	<ol style="list-style-type: none"> <li>BS 5950-1:2000</li> </ol>	<ol style="list-style-type: none"> <li>Maximum capacity allowed is 1.0 MG</li> <li>Maximum height allowed is 5 meter</li> <li>Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> <li>Minimum 10 years warranty period for tank is required</li> </ol>

No.	Product Name	Recognized Standards	SPAN Additional Requirements
2	Steel Tank With Lining or Coating (Glass Fused / Glass Coated / Epoxy Lining / HDPE Lining)	1. ANSI/AWWA D103-09	<ol style="list-style-type: none"> <li>1. Maximum capacity allowed for elevated tank is 500,000 G and for ground storage tank is 750,000 G</li> <li>2. Maximum height allowed is 5 meter or 4 panels or which one is lower</li> <li>3. Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> <li>4. Minimum 10 years warranty period for tank and sealant/ lining is required</li> </ol>
3	PE Storage Tanks	<ol style="list-style-type: none"> <li>1. MS 1225 : Pt 1 : 2007</li> <li>2. MS 1225 : Pt 2: 2006</li> </ol>	<ol style="list-style-type: none"> <li>1. Tank should have an interlocking mechanism</li> </ol>
4	FRP Sectional Water Tank	MS 1390 : 2010 Clause 12.1.3 – Accelerated Weathering Test	<ol style="list-style-type: none"> <li>1. Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> <li>2. Maximum capacity allowed is 500,000 liters (100,000 G)</li> <li>3. Maximum height allowed is 4 meter</li> <li>4. Tank only can be used for system that will not be surrendered to the water operator</li> <li>5. Minimum 10 years warranty period for tank and sealant is required.</li> <li>6. Users are encouraged to provide protection for the tank from direct sunlight (i.e. roof etc.)</li> <li>7. Suppliers must ensure levelling of plinth prior to tank installation</li> </ol>
5	Corrugated Steel Panels With Polyethylene-Lined Water Storage Tank	<ol style="list-style-type: none"> <li>1. BS 1449:Pt 1: 1991</li> <li>2. SS 245:1995 Clause 10.2.1 - Leakage Test</li> <li>3. SS 245:1995 Clause 10.2.2 - Deflection Test</li> </ol>	<ol style="list-style-type: none"> <li>1. Tank only can be used for system that will not be surrendered to the water operator</li> <li>2. Maximum capacity allowed is 500,000 litres (100,000 G)</li> <li>3. Maximum height allowed is 5 meter or 4 panels or which one is lower</li> <li>4. Minimum thickness of the PE Lining is 2.0mm</li> </ol>

No.	Product Name	Recognized Standards	SPAN Additional Requirements
			<ul style="list-style-type: none"> <li>5. Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> <li>6. Minimum 10 years warranty period for tanks and sealant/ lining is required</li> </ul>
6	GFRP / FRP Cylindrical (One Piece) Storage Tank	<ul style="list-style-type: none"> <li>1. BS EN 13280 : 2001</li> <li>2. MS 1241 : 2011</li> </ul>	<ul style="list-style-type: none"> <li>1. Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> <li>2. Maximum capacity allowed is 100,000 liters (22,000 G)</li> <li>3. Tank only can be used for system that will not be surrendered to the water operator</li> <li>4. Tank is not allowed to be cast <i>in-situ</i></li> </ul>
7	Pressed Steel Tank	<ul style="list-style-type: none"> <li>1. BS 1564 : 1975</li> </ul>	<ul style="list-style-type: none"> <li>1. Tank only can be used for system that will not be surrendered to the water operator</li> <li>2. Maximum capacity allowed is 500,000 liters (100,000 G)</li> <li>3. Maximum height allowed is 4 panels</li> <li>4. The tank must be lined with PE lining; minimum thickness of the PE lining is 2.0 mm</li> <li>5. Minimum 10 years warranty period for tanks and linings</li> <li>6. Tank must be supplied and installed by the same supplier or installer who is appointed by the supplier</li> </ul>
<b>E. VALVES</b>			
1	Butterfly Valve	<ul style="list-style-type: none"> <li>1. BS EN 593: 2009 + A1:2011</li> </ul>	<ul style="list-style-type: none"> <li>1. O-Ring/ Gasket shall be of EPDM</li> <li>2. Body material shall be of Ductile Iron</li> <li>3. For valve which is more than 600 mm in diameter, water operator is allowed to make any test which they feel necessary before purchasing is made</li> </ul>
2	Air Valve	<ul style="list-style-type: none"> <li>1. JKR 20200-0097-01</li> <li>2. ANSI / AWWA</li> </ul>	<ul style="list-style-type: none"> <li>1. O-Ring/ Gasket shall be of EPDM</li> <li>2. Body material shall be of Ductile Iron</li> <li>3. For valve which is more than 600 mm in</li> </ul>



No.	Product Name	Recognized Standards	SPAN Additional Requirements
		C512-2004 3. BS EN 1074-4 : 2000	diameter, water operator is allowed to make any test which they feel necessary before purchasing is made
3	Gate Valve	1. MS 1049 : 1986 2. BS EN 12288 : 2010 3. BS EN 1171 : 2002 4. JKR 20200-0077-00 5. BS 5163-1 : 2004 6. BS 5163-2 : 2004	1. O-Ring/ Gasket shall be of EPDM 2. Body material shall be of Ductile Iron 3. For valve which is more than 600 mm in diameter, water operator is allowed to make any test which they feel necessary before purchasing is made
4	Check Valve	1. BS EN 12334 : 2001 2. BS EN 14341 : 2006	1. O-Ring/ Gasket shall be of EPDM 2. Body material shall be of Ductile Iron 3. For valve which is more than 600 mm in diameter, water operator is allowed to make any test which they feel necessary before purchasing is made
<b>F. PUMP</b>			
1	All types of pump	Not Applicable	Registered pumps are subject to the following conditions :-  <b>1.1 <u>For internal plumbing system that will be maintained by the owner premises</u></b> 1.1.1 Booster pumps of capacity lower than 10m <sup>3</sup> /hr (<10m <sup>3</sup> /hr) shall have efficiencies of not less than 45%.  1.1.2 Booster pumps of capacity equal and exceeding 10m <sup>3</sup> /hr (≥10m <sup>3</sup> /hr) but lower than 30m <sup>3</sup> /hr (< 30m <sup>3</sup> /hr) shall have efficiencies of not less than 50%.  1.1.3 The efficiency of all types of booster pumps of higher capacity shall meet the minimum requirement tabulated under item 2.2.1 below.

No.	Product Name	Recognized Standards	SPAN Additional Requirements																																																			
	All types of pump (continued)		<p>1.1.4 Compliance with EFF1 rating for booster pump motors is voluntary. However, building conforming to Green Building Rating should have pump motors complying with EFF1 rating.</p> <p><b>1.2 <u>For external reticulation system that will be handed over and maintained by the water operators</u></b></p> <p>1.2.1 Design Criteria for Pump sets:-</p> <table border="1" data-bbox="904 745 1549 1469"> <thead> <tr> <th rowspan="2">Pumping Rate Per Pump (m<sup>3</sup>/hr)</th> <th rowspan="2">Number of Pump sets</th> <th rowspan="2">Total</th> <th rowspan="2">Pumping Hours</th> <th rowspan="2">Minimum Pump Efficiency (%)</th> <th rowspan="2">Maximum Pumping Head</th> <th colspan="2">Maximum Speed (rpm)</th> </tr> <tr> <th>Horizontal Split Casing Pumps</th> <th>End Suction Pumps</th> </tr> </thead> <tbody> <tr> <td>≥ 30 &lt; 100</td> <td>On Duty = 1 Stand by = 1</td> <td>2</td> <td>12</td> <td>60</td> <td>75</td> <td>-</td> <td>2900</td> </tr> <tr> <td>≥ 100 &lt; 300</td> <td>On Duty = 1 Stand by = 1</td> <td>2</td> <td>12</td> <td>70</td> <td>75</td> <td>1500</td> <td>2900</td> </tr> <tr> <td>≥ 300 &lt; 1000</td> <td>On Duty = 2 Stand by = 2</td> <td>4</td> <td>12</td> <td>75</td> <td>75</td> <td>1,500</td> <td>-</td> </tr> <tr> <td>≥ 1000</td> <td>On Duty = 4 Stand by = 2</td> <td>6</td> <td>12</td> <td>80</td> <td>75</td> <td>1,500</td> <td>-</td> </tr> </tbody> </table> <p>1.2.2 Material Condition:-</p> <p>1.2.2.1 General conditions :-</p> <table border="1" data-bbox="914 1688 1549 1933"> <thead> <tr> <th>No.</th> <th>Part</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Pump shaft</td> <td>The material shall be of Stainless Steel Grade 420 or better.</td> </tr> <tr> <td>2.</td> <td>Bolt and Nuts</td> <td>All exposed bolts and nuts in the construction for the pump shall be cadmium treated or hot dipped galvanized.</td> </tr> </tbody> </table>	Pumping Rate Per Pump (m <sup>3</sup> /hr)	Number of Pump sets	Total	Pumping Hours	Minimum Pump Efficiency (%)	Maximum Pumping Head	Maximum Speed (rpm)		Horizontal Split Casing Pumps	End Suction Pumps	≥ 30 < 100	On Duty = 1 Stand by = 1	2	12	60	75	-	2900	≥ 100 < 300	On Duty = 1 Stand by = 1	2	12	70	75	1500	2900	≥ 300 < 1000	On Duty = 2 Stand by = 2	4	12	75	75	1,500	-	≥ 1000	On Duty = 4 Stand by = 2	6	12	80	75	1,500	-	No.	Part	Material	1.	Pump shaft	The material shall be of Stainless Steel Grade 420 or better.	2.	Bolt and Nuts	All exposed bolts and nuts in the construction for the pump shall be cadmium treated or hot dipped galvanized.
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No.	Product Name	Recognized Standards	SPAN Additional Requirements			
	All types of pump (continued)		<b>Motor Capacity (kW)</b>	<b>Motor Efficiency (%) for Class EFF1</b>		
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2-Pole Motors	4-Pole Motors					
			4	≥ 87.6      ≥ 88.3		
			5.5	≥ 88.6      ≥ 89.2		
			7.5	≥ 89.5      ≥ 90.1		
			11	≥ 90.5      ≥ 91.0		
			15	≥ 91.3      ≥ 91.8		
			18.5	≥ 91.8      ≥ 92.2		
			22	≥ 92.2      ≥ 92.6		
			30	≥ 92.9      ≥ 93.2		
			37	≥ 93.3      ≥ 93.6		
			45	≥ 93.7      ≥ 93.9		
			55	≥ 94.0      ≥ 94.2		
			75	≥ 94.6      ≥ 94.7		
			90	≥ 95.0      ≥ 95.0		
			37	≥ 93.3      ≥ 93.6		
			45	≥ 93.7      ≥ 93.9		
			55	≥ 94.0      ≥ 94.2		
			75	≥ 94.6      ≥ 94.7		
			90	≥ 95.0      ≥ 95.0		
			<p><b>1.3 <u>Water Treatment Plant</u></b></p> <p>Pump design is subject to the specifications set by the Consulting Engineers.</p>			
<b>G. Water Treatment Chemicals</b>						
1	All type of chemicals	Not Applicable	Certificate of Analysis (CoA) submission to water operators is required for every batch of chemicals delivered			

## SPAN Additional Requirements for Sewerage Products

### Definition:

1. **Design and Built** - *design, built, install, testing and commissioning of products shall be done by same supplier*
2. **Supply and Install** – *supplied, installed, testing and commissioning of products shall be done by same supplier*

No.	Product Name	Recognised Standards	SPAN Additional Requirements
1	Package plant	<p>SPAN TS 1401: 2010 (A1: 2013) Part 1 : Prefabricated Tanks – Packaged Plants</p> <p>SPAN TS 1401: 2010 (A1: 2013) Part 2 : Construction and Installation – Packaged Plants</p>	<ol style="list-style-type: none"> <li>1. System shall be supplied in design and build mode.</li> <li>2. All mechanical equipment, instrumentation, pipes and valves to be used in the system must be SPAN registered.</li> <li>3. Details of model and design criteria shall be submitted to the Sewerage Certifying Agencies during application for approval of plan for sewerage system</li> </ol>
2	PVC pipe (PVC-U, PVC-M, PVC-C)	<ol style="list-style-type: none"> <li>a) AS/NZS 1477 PVC pipes and fittings for pressure applications</li> <li>b) BS 4660 Specification for unplasticized polyvinyl chloride (PVC-U) pipes and plastics fittings of nominal sizes 110 and 160 for below ground gravity drainage and sewerage</li> <li>c) BS 5481 Specification for unplasticized PVC pipe and fittings for gravity sewers</li> <li>d) JIS K 6741 uPVC Pipes for General Fluids (Excluding Potable Water)</li> </ol>	<p>Pipe can only be used for:</p> <ol style="list-style-type: none"> <li>a) Internal piping in sewerage facilities;</li> <li>b) Internal sanitary piping.</li> </ol>

No.	Product Name	Recognised Standards	SPAN Additional Requirements
	PVC pipe (PVC-U, PVC-M, PVC-C) (continued)	e) MS 979 Specification for unplasticized sewerage pipe and fitting Part 1: pipes of diameter 100mm and 155mm; f) MS 979 Part 2 Pipes of diameter 200mm and above g) AS/NZS 1477- PVC pipes and fittings for pressure application	
3	Small Sewage Treatment System	MS 2441-2 : 2014 On Site Sewage Treatment Units – Part 2: Packaged Prefabricated Small Sewage Treatment System Specifications	<ol style="list-style-type: none"> <li>1. System shall be supplied in design and build mode.</li> <li>2. All mechanical equipment, instrumentation, pipes and valves to be used in the system must be SPAN registered.</li> <li>3. Details of model and design criteria shall be submitted to the Sewerage Certifying Agencies during application for approval of plan for sewerage system.</li> </ol>
4	Pump (Centrifugal-submersible, end suction, self priming)	a) BS EN ISO 5198 Centrifugal, mixed flow and axial pumps. Code for hydraulic performance tests. Precision class. b) BS EN ISO 5199 Technical specifications for centrifugal pumps. Class II. c) BS EN ISO 9905 Technical specifications for centrifugal pumps. Class I. d) BS EN ISO 9908 Technical specifications for centrifugal pumps.	<u>Raw sewage application</u> <ol style="list-style-type: none"> <li>1. Minimum pass through opening : 75 mm</li> <li>2. Minimum suction and discharge opening : 100 mm</li> <li>3. Minimum pump efficiency : 60%</li> <li>4. Maximum rpm : 1500</li> </ol> <u>Grit &amp; grease, sludge application</u> <ol style="list-style-type: none"> <li>1. Minimum pass through opening : 50 mm</li> <li>2. Minimum suction and discharge opening : 80 mm</li> </ol>

No.	Product Name	Recognised Standards	SPAN Additional Requirements
		Class III. e) ISO 9906 Rotodynamic pumps. Hydraulic performance acceptance tests - Grades 1 and 2. f) JIS B 8325 Submersible Motor Pumps for Sump	3. Minimum pump efficiency : <b>40% (for &lt; 5.5 kW)</b> <b>60% (for &gt; 5.5 kW)</b> 4. Maximum rpm : 1500 <b>(Pump with these specifications shall not be used as raw sewage pump)</b>
5	Surface aerator, brush aerator, paddle wheel aerator, hydrojet aerator, ejector, aspirating aerator, submersible aerator, diffuser	a) BS EN 12255-15 Wastewater treatment plants. Measurement of the oxygen transfer in clean water in aeration tanks of activated sludge plants b) ASCE/EWRI 2-06 Measurement of oxygen transfer in clean water <i>(Note: Standards for material is subject to manufacturer recommendations)</i>	<u>Tube diffuser</u> 1. Installation of tube diffuser which effective length is 1000mm or more shall be anchored according to the specification to avoid floating. 2. Product cannot be used for package Plant.
6	Air blower	<u>For blowing application</u> JIS B 8341 Testing methods for displacement compressors.  JB/T 8941.2-1999 (Roots Type Blowers for General Purpose) Part 2: Performance test methods.  KS B 6350:2008 Testing Method for Turbo Blowers and Compressor.	<u>Diaphragm blower</u> <i>Product can only be used in small sewage treatment system (SSTS) only.</i>

No.	Product Name	Recognised Standards	SPAN Additional Requirements
7	Sewer liner	<p><u>CIPP</u></p> <p>a) BS EN ISO 11296 Part 1 – 4: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Lining with cured-in-place pipes</p> <p>b) ASTM F2019-03, Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)</p> <p>c) ASTM D5813 Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems</p> <p><u>FRP slip lining &amp; HDPE lining</u></p> <p>a) BS EN ISO 11296 Part 1 – 4: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Lining with cured-in-place pipes</p> <p>b) BS EN ISO 178 Plastics. Determination of flexural properties</p>	1. Product shall be supplied in design and build mode.



No.	Product Name	Recognised Standards	SPAN Additional Requirements
8	Grit & Grease Removal – Grit & grease collector/ Grit collector/ Grease collector	Manufacturer specification	Product shall be supplied in supply and install mode.
9	Clarifier/ Sedimentation - Sludge scrapper & scum skimmer/Sludge scrapper/ Scum skimmer	Manufacturer specification	Product shall be supplied in supply and install mode.
10	Gravity thickener	Manufacturer specification	Product shall be supplied in supply and install mode.
11	Odour Control & Treatment	Manufacturer specification	<ol style="list-style-type: none"> <li>1. System shall be supplied in design and build mode.</li> <li>2. All mechanical equipment, instrumentation, pipes and valves to be used in the system must be registered</li> </ol>