



Assets Planning and Delivery Group  
Engineering

# **Strategic Product Specification**

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## **SPS 260 Wafer and Lugged Butterfly Valves**

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VERSION 2  
REVISION 3

FEBRUARY 2022

## FOREWORD

Each Strategic Product Specification has been prepared to inform Water Corporation staff, consultants, contractors and land developers of the requirements for selecting and acquiring a manufactured product to be used in strategic Corporation infrastructure. The definition of 'Product' includes items that comprise assembled components, equipment or plant for mechanical, electrical and civil infrastructure applications.

The objective of a Strategic Product Specification is to specify fit-for-purpose Product which will contribute to the provision of effective water services at least whole-of-life cost and with least risk to service standards and safety. A Strategic Product Specification also provides uniform standards for compatibility of new water infrastructure with existing water assets.

Many Strategic Product Specifications have drawn on the design, asset management and operational experience of Product performance in live service gained by the Corporation over time. Some Strategic Product Specifications have drawn on the experience of the water industry nationally by referencing Australian or WSAA standards.

Strategic Product Specifications are intended for reference and use in the following typical procurement scenarios:

- Capital funded infrastructure design and construction work;
- Private developer funded subdivision infrastructure for takeover by the Corporation;
- Operationally funded infrastructure design and construction work;
- Corporation period contracts for Product purchases;
- Product purchases for stock or for miscellaneous minor work.

A published Strategic Product Specification will, in some cases, comprise technical content that is typical of a range of products of the same type (type specification) but may exclude specific requirements that should apply to a particular project or application. In such cases, the project designer is required to document the supplementary project specific requirements in the 'Project Specific Requirements' Appendix of the Specification.

The text of a published Specification should not be directly modified. In the event that a text variation is considered necessary to accommodate the needs of a particular project or application, the text modification should be documented in the appropriate Clause of a 'Project Specific Requirements' Appendix.

Enquiries relating to the technical content of this Specification should be directed to the Senior Principal Engineer, Mechanical Section, Engineering to whom all enquiries relating to the technical content of the Specification should be directed. Future Specification changes, if any, will be issued to registered Specification users as and when published.

### Head of Engineering

*This document is prepared without the assumption of a duty of care by the Water Corporation. The document is not intended to be nor should it be relied on as a substitute for professional engineering design expertise or any other professional advice.*

*Users should use and reference the current version of this document.*

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**REVISION STATUS**

The revision status of this specification is shown section by section below:

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# Strategic Product Specification

## SPS 260

### Wafer and Lugged Butterfly valves

#### CONTENTS

<i>Section</i>	<i>Page</i>
<b>1</b>	<b>Scope and General .....8</b>
<b>1.1</b>	<b>Scope.....8</b>
<b>1.2</b>	<b>Referenced Documents .....8</b>
<b>1.3</b>	<b>Definitions and Notation.....9</b>
1.3.1	Australian Standards® .....9
1.3.2	Certificate.....9
1.3.3	Certification Body.....9
1.3.4	Certification Mark.....9
1.3.5	Certification Scheme.....9
1.3.6	Compliant Product .....9
1.3.7	Corporation .....10
1.3.8	Manufacturer .....10
1.3.9	Notation.....10
1.3.10	Officer .....10
1.3.11	Product .....10
1.3.12	Product Appraisal.....10
1.3.13	Product Assessor.....10
1.3.14	Product Certification.....10
1.3.15	Product Verification Report.....10
1.3.16	Product Warranty .....11
1.3.17	Purchasing Schedule .....11
1.3.18	Quality System.....11
1.3.19	Standards Australia .....11
1.3.20	Strategic Product.....11
1.3.21	Strategic Product Appraisal Process .....11
1.3.22	Supplier.....11
1.3.23	Testing.....11
1.3.24	Valve .....11
<b>2</b>	<b>Materials and Components .....12</b>
<b>2.1</b>	<b>General.....12</b>
<b>3</b>	<b>Design .....13</b>
<b>3.1</b>	<b>General.....13</b>
<b>3.2</b>	<b>End Connections .....13</b>
3.2.1	Wafer.....13
3.2.2	Tapped Lugged .....13
<b>3.3</b>	<b>Component Design .....13</b>
<b>3.4</b>	<b>Operation .....13</b>
3.4.1	General.....13
3.4.2	Torque Limiting Device.....13
3.4.3	Remote Position Indicator.....13

3.4.4	Direction of Rotation .....	13
<b>3.5</b>	<b>Electric Actuator .....</b>	<b>13</b>
<b>3.6</b>	<b>Lockout Devices.....</b>	<b>13</b>
3.6.1	Spindle Caps .....	14
3.6.2	Handles and Handwheels .....	14
3.6.3	Electric Actuators.....	14
<b>4</b>	<b>Protective Coatings .....</b>	<b>15</b>
<b>4.1</b>	<b>General.....</b>	<b>15</b>
<b>5</b>	<b>Testing.....</b>	<b>16</b>
<b>5.1</b>	<b>General.....</b>	<b>16</b>
<b>5.2</b>	<b>Notification of Testing .....</b>	<b>16</b>
<b>5.3</b>	<b>Access to the Place of Manufacture.....</b>	<b>16</b>
<b>5.4</b>	<b>Place of Manufacture other than WA .....</b>	<b>16</b>
<b>5.5</b>	<b>Performance Test Requirements .....</b>	<b>16</b>
5.5.1	Production Tests.....	16
5.5.2	Test Certificates .....	16
<b>6</b>	<b>Marking and Packaging .....</b>	<b>17</b>
<b>6.1</b>	<b>Marking.....</b>	<b>17</b>
6.1.1	Body Markings.....	17
<b>6.2</b>	<b>Direction of Closure .....</b>	<b>17</b>
<b>6.3</b>	<b>Packaging.....</b>	<b>17</b>
6.3.1	General.....	17
6.3.2	Identification Tag.....	17
6.3.3	Marking of Packaging.....	17
<b>7</b>	<b>Manuals.....</b>	<b>18</b>
<b>7.1</b>	<b>Format and Language .....</b>	<b>18</b>
<b>7.2</b>	<b>Content.....</b>	<b>18</b>
<b>8</b>	<b>Spare Parts and Special Tools.....</b>	<b>19</b>
<b>8.1</b>	<b>Spare Parts.....</b>	<b>19</b>
8.1.1	Interchangeability.....	19
8.1.2	Availability.....	19
<b>8.2</b>	<b>Special Tools .....</b>	<b>19</b>
<b>9</b>	<b>Transportation, Handling and Storage .....</b>	<b>20</b>
<b>9.1</b>	<b>General.....</b>	<b>20</b>
<b>9.2</b>	<b>Preservation of Product in Storage .....</b>	<b>20</b>
<b>10</b>	<b>Quality Assurance.....</b>	<b>21</b>
<b>10.1</b>	<b>Certification.....</b>	<b>21</b>
10.1.1	Certification of Product.....	21
10.1.2	Quality System.....	21
10.1.3	Product Re-verification .....	21
<b>10.2</b>	<b>Compliance and Acceptance .....</b>	<b>21</b>
10.2.1	Means of Demonstrating Compliance.....	21
10.2.2	Acceptance Criteria.....	21

<b>10.3</b>	<b>Non-compliant Product .....</b>	<b>22</b>
10.3.1	General .....	22
10.3.2	Manufacturing Repairs (In-process) .....	22
10.3.3	Product Warranty .....	22
10.3.4	Product Repair.....	22
<b>11</b>	<b>Appendix A: Project Specific Requirements (Normative) .....</b>	<b>23</b>
<b>11.1</b>	<b>General.....</b>	<b>23</b>
<b>11.2</b>	<b>Revisions to Specification Text .....</b>	<b>23</b>
<b>11.3</b>	<b>Technical Requirements .....</b>	<b>23</b>
<b>12</b>	<b>Appendix B: Technical Compliance Schedules (Normative) .....</b>	<b>24</b>
<b>12.1</b>	<b>Compliance Schedules .....</b>	<b>24</b>
<b>13</b>	<b>Appendix C: Material Master Records (Informative).....</b>	<b>29</b>

# 1 Scope and General

## 1.1 Scope

This Specification sets out requirements for the manufacture, supply, handling and delivery of wafer and lugged butterfly valves for waterworks purposes, and as further detailed in the following.

Wafer and lugged butterfly valves are intended for use in medium flow velocity ( $\leq 5$  m/s continuous and  $\leq 7.5$  m/s emergency), low head, non-buried waterworks applications (e.g. above-ground or pit service) such as small pump stations, small bore headworks and water treatment plants. Refer Notes below for details of other waterworks butterfly valves used by the Corporation.

This Specification details the requirements in lieu of specific clauses, or as clarification for options that exist within, or as additional requirements to AS 4795.1. Accordingly, unless otherwise specified in this Specification, the valves shall be manufactured, tested and supplied in accordance with the requirements of AS 4795.1.

The Specification also details the means by which compliance with the Specification shall be demonstrated and the criteria for acceptance of Product.

Valves shall be in a new unused condition.

**The Designer/Purchaser is required to complete Table 11.1 in order to provide complete design information to the Tenderer.**

### NOTES:

1. Butterfly valves for waterworks purpose non-buried and buried service, and for rated flow velocities  $\leq 5$  m/s and emergency flow velocities  $\leq 7.5$  m/s are specified in SPS 261, which references AS 4795.2 for double flanged seal on body type valves.
2. Butterfly valves for high performance non-buried and buried service, and for rated flow velocities  $\leq 7.5$  m/s and emergency flow velocities  $\leq 12$  m/s are specified in SPS 262, which references AS 4795.2 for double flanged seal on disc type valves.
3. Butterfly valves for dam guard valve non-buried service, and for rated flow velocities  $\leq 7.5$  m/s and emergency flow velocities  $\leq 20$  m/s are specified in SPS 263, which references AS 4795.2 for double flanged seal on disc type valves.

## 1.2 Referenced Documents

Water Corporation “Strategic Product Appraisal Process Manual” (Internally controlled)

The following documents are referenced in this Specification:

### AS

- 2550.1 Cranes, hoists and winches – Safe use – General
- 2550.3 Cranes, hoists and winches – Safe use – Bridge, gantry, portal (including container cranes), jib and monorail cranes
- 2550.5 Cranes, hoists and winches – Safe use – Mobile
- 2550.11 Cranes, hoists and winches – Safe use – Vehicle loading cranes
- 4795.1 Butterfly valves for waterworks purposes - Wafer and lugged
- 60529 Degrees of protection provided by enclosures (IP Code)

### DS

- 26.41 Type Specification for an Electric Actuator for a Waterworks Valve

## AS/NZS ISO

9001 Quality management systems – requirements

## ISO/IEC

17000 Conformity assessment – Vocabulary and general principles

17025 General requirements for the competence of testing and calibration laboratories

## Standards Australia Guides

HB 18.23 Guidelines for third-party certification and accreditation - Guide 23-Methods of indicating conformity with standards for third-party certification systems  
(ISO/IEC Guide 23)

HB 18.28 Conformity assessment –Guidance on a third-party certification system for products  
(ISO/IEC Guide 28)

## SPS

261 Butterfly Valves for Waterworks Purposes

262 High Performance Butterfly Valves

263 Butterfly Guard Valves

## 1.3 Definitions and Notation

The following definitions are intended to clarify the terminology used in this Specification.

### 1.3.1 Australian Standards®

Standards that are developed, published and maintained by Standards Australia

### 1.3.2 Certificate

A formal certificate issued by a Certification Body in accordance with the third party product certification system described in HB 18.28, including associated Product licence schedules.

### 1.3.3 Certification Body

An independent (or third party) organisation duly accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) to operate product Certification Schemes.

### 1.3.4 Certification Mark

A proprietary mark of product conformity issued in accordance with HB 18.23.

### 1.3.5 Certification Scheme

A third party product certification system operated in accordance with HB 18.28.

#### NOTE:

The effect of this is to require maintenance by the manufacturer of effective production control planning in addition to full type testing from independently sampled production and subsequent verification of conformity with specified standards.

### 1.3.6 Compliant Product

Product that has been assessed, by means of Product Appraisal, as conforming with standards and specifications that are specified by the Corporation.

### 1.3.7 Corporation

The Water Corporation of Western Australia.

### 1.3.8 Manufacturer

An entity or combination of entities that is responsible for selection, processing and control of Product constituent materials or compounds and for the processing equipment that collectively result in the manufactured product.

### 1.3.9 Notation

Statements governed by use of the word 'shall' are mandatory or 'normative' requirements of the Specification. Statements expressed by use of the words 'should' or 'may' are 'informative' but not mandatory and are provided for information and guidance. Notes in Specification text are informative. Notes that form part of Specification Tables are normative. An Appendix to the Specification that is designated 'normative' contains mandatory requirements. An Appendix that is designated 'informative' is provided for information and guidance only. The term 'specified' includes requirements of the Specification and requirements stated or referenced in other project documentation.

### 1.3.10 Officer

A duly authorised representative or appointed agent of the Corporation.

### 1.3.11 Product

A single unit or multiple units of manufactured end product or an assembly of manufactured component products, materials or equipment. This Specification and accompanying Purchasing Schedule define the nature and details of Product to be supplied. In this Specification the Product shall refer to a wafer and lugged butterfly valve (or valves).

#### NOTES:

1. An end product is most commonly an output of manufacturing processes that result in finished end products having the same features and characteristics and can be the result of a single or multiple production batches.
2. Manufactured equipment and assemblies of Product components or materials are commonly procured for mechanical, electrical and civil infrastructure applications.

### 1.3.12 Product Appraisal

A formal process whereby Product, including product design, is subjected to systematic engineering assessment to determine Product fitness for prescribed end uses and to evaluate conformity of its production systems with specified standards and requirements. Product Appraisal includes verification of the extent of compliance in accordance with the requirements of a relevant 'Technical Compliance Schedule'.

### 1.3.13 Product Assessor

An organization, Officer or other person who, having demonstrated specialist product knowledge and competence acceptable to the Corporation, is appointed to evaluate Product, appraises the Product and issues one or more Product Verification Report(s).

### 1.3.14 Product Certification

A formal process whereby the production and management systems for the manufacture of Product, are assessed by a Certification Body to evaluate compliance of these systems with specified product standards and tests, in accordance with Certification Scheme rules.

### 1.3.15 Product Verification Report

A formal report wherein a Product Assessor evaluates the extent of Product compliance with the specified product standards and specifications.

**NOTE:**

Verification may be on a project-by-project basis or at agreed intervals, as appropriate to the scope of a Purchasing Schedule and Product end use, subject to determination by the Corporation.

### **1.3.16 Product Warranty**

A formal express undertaking by a Supplier that indemnifies the Corporation against the consequences of supplied Product failure to comply with specified fitness for application and in-service life expectancy performance requirements.

### **1.3.17 Purchasing Schedule**

A Corporation purchase order, tender, schedule of prices, bill of quantities, or specification that details the nature, quantity and other characteristics of Product to be supplied, purchased or installed.

**NOTE:** Table 11.1 of this Specification represents a component of the Purchasing Schedule.

### **1.3.18 Quality System**

A management system that establishes, documents, implements and maintains organizational structures, resources, responsibilities, processes and procedures for the manufacture of Product and provision of Product related services in accordance with the requirements of AS/NZS ISO 9001.

### **1.3.19 Standards Australia**

The peak non-government standards development body in Australia which develops Australian Standards®.

### **1.3.20 Strategic Product**

An essential infrastructure component whose performance is critical to the elimination of risk to the safe and effective provision of water services, which are functions of the Corporation under the Water Corporation Act as licensed under the Water Services Coordination Act.

**NOTE:**

Strategic product is a component of permanent Corporation infrastructure. Ancillary operational and safety equipment that does not form part of permanent infrastructure but offers exceptional enhancements in operational performance or personnel safety may be deemed strategic.

### **1.3.21 Strategic Product Appraisal Process**

The process described in the Strategic Product Appraisal Process Manual whereby manufactured products and equipment are evaluated and, where they comply with specified requirements, authorised for use in Corporation infrastructure.

### **1.3.22 Supplier**

An entity or combination of entities that is responsible for the supply of Product.

**NOTE:**

A Supplier may be a Manufacturer, owner, producer, distributor, vendor, agent, tenderer or contractor for supply of Product or Product related service.

### **1.3.23 Testing**

The determination of Product characteristics by inspection and by the application of specified test procedures.

### **1.3.24 Valve**

The valve (or valves) referred to in this Specification shall mean wafer or lugged butterfly valve (or valves) for waterworks purposes including gearboxes, extended spindles and actuators.

## 2 Materials and Components

### 2.1 General

Valves shall comply with the relevant requirements of Section 2 of AS 4795.1 except as follows:

- a. Valve handles may be manufactured from Carbon Steel or Ductile Iron subject to the use of a Fusion Bonded Epoxy coating to AS 4158.

## **3 Design**

### **3.1 General**

Valves shall comply with the relevant requirements of Section 3 of AS 4795.1 and the following.

### **3.2 End Connections**

#### **3.2.1 Wafer**

Wafer style valve bodies shall comply with AS 4087 in accordance with the 1<sup>st</sup> paragraph of Clause 3.2.2 of AS 4795.1.

#### **3.2.2 Tapped Lugged**

Tapped lugged style valve bodies shall comply with AS 4087 in accordance with the 1<sup>st</sup> paragraph of Clause 3.2.3 of AS 4795.1.

### **3.3 Component Design**

Valve face-to-face dimensions shall comply with ISO 5752 or EN 558 in accordance with the 1<sup>st</sup> paragraph of Clause 3.3.3 of AS 4795.1.

### **3.4 Operation**

#### **3.4.1 General**

The actuator type shall be as specified in Table 11.1 of this Specification.

#### **3.4.2 Torque Limiting Device**

Where a torque limiting device is specified in Table 11.1 of this Specification, the device shall be sealed against the ingress of external contaminants and moisture. The torque limiting device shall be manufactured from corrosion resistant materials.

#### **3.4.3 Remote Position Indicator**

Where the local valve indicator is not visible a remote position indicator shall be fitted as specified in Table 11.1 of this Specification. The position indicator shall be sealed against the ingress of external contaminants and moisture. It shall be suitable for a continuous immersion rating to IP 68 to a depth of 3m submergence for 72 hours, in accordance with AS 60529.

#### **3.4.4 Direction of Rotation**

Valves and actuators shall be designed to close when the input shaft of the gearbox actuator is rotated anti-clockwise e.g. the valve shall close when the operator handwheel or key is rotated anti-clockwise.

### **3.5 Electric Actuator**

- a) Electrically actuated valves  $\leq$ DN 400 (as specified in Table 11.1 of this Specification) shall have an actuator that has been authorised by the Corporation, or has a proven satisfactory history of service on its assets.
- b) Electrically actuated valves  $>$ DN 400 (as specified in Table 11.1 of this Specification) shall be fitted with an electric actuator complying with the relevant requirements of DS 26.41.

### **3.6 Lockout Devices**

Valves shall be either fitted with lockout devices to enable their secure isolation, or shall be capable of accommodating them as specified in Clause 3.3.13 of AS 4795.2 and the following:

### **3.6.1 Spindle Caps**

Spindle cap operators shall accommodate the Corporation's valve locking device in accordance with Drawing No EG20-11-2. The bottom plate of the locking device shall be capable of either being fitted under the spindle cap or alternatively locate into a groove in the body of the spindle cap. Other methods of accommodating the Corporation's valve locking device may be acceptable subject to approval by the Corporation.

### **3.6.2 Handles and Handwheels**

Handles and handwheels shall be fitted with provision for locking with a padlock.

### **3.6.3 Electric Actuators**

Where the valve is electrically actuated it shall incorporate padlockable lockout devices in accordance with DS 26.41.

## **4 Protective Coatings**

### **4.1 General**

Valves, actuators and gearboxes shall be epoxy coated in accordance with AS/NZS 4158 or Appendix C, as specified in Clause 4.1 of AS 4795.1.

## **5 Testing**

### **5.1 General**

Product shall be tested in accordance with the test requirements of this Specification. Testing shall be deemed acceptable when test outcomes have been formally verified by a Certification Body or witnessed by a testing Officer. Product for which a test requirement has not been met shall be classified as non-compliant Product.

**NOTES:**

1. Testing should be carried out by an organisation accredited by NATA or in accordance with ISO/IEC 17025.
2. A testing Officer should normally be an Officer who has specialist knowledge of or training in product or materials testing appropriate to the Product characteristics to be tested.

### **5.2 Notification of Testing**

The Corporation shall be notified in writing of each formal test proposal at least seven (7) days prior to the preparation of Product for testing except where a specified test has been the subject of a current valid Certificate issued by a Certification Body. This notification is required to enable the Corporation to make all necessary arrangements including appointment of a testing Officer in a timely manner.

### **5.3 Access to the Place of Manufacture**

The testing Officer shall be afforded access, at all reasonable times, to all places of manufacture of Product or product components and shall be authorised to arrange or undertake such testing there as the Corporation deems appropriate to the testing regime specified.

### **5.4 Place of Manufacture other than WA**

Where any Product or product component is being manufactured other than in Western Australia the Corporation may appoint a local inspecting Officer to undertake inspections and witnessed testing as required. The testing Officer shall be provided with all due authority and permits required to carry out testing at the place of manufacture.

**NOTE:**

The cost of witnessed testing arranged by the Corporation will normally be borne by the Corporation unless otherwise negotiated.

### **5.5 Performance Test Requirements**

#### **5.5.1 Production Tests**

Each Product item shall be tested in accordance with the test requirements of Clause 5.3 of AS 4795.1.

#### **5.5.2 Test Certificates**

Test certificates shall be provided where specified in Table 11.1 of this Specification. For the purposes of acceptance, each test certificate shall, as a minimum, bear the relevant Product item serial number and shall certify that the Product item has complied with the specified test requirements.

## **6 Marking and Packaging**

### **6.1 Marking**

#### **6.1.1 Body Markings**

Valve marking shall comply with Clause 6.1 of AS 4795.1.

### **6.2 Direction of Closure**

Valve marking shall comply with Clause 6.2 of AS 4795.1 and Clause 3.4.4 of this Specification.

### **6.3 Packaging**

#### **6.3.1 General**

Valve packaging shall comply with Clause 6.3 of AS 4795.1 and the following. Product shall be packaged with appropriate protection, which shall prevent damage or defects as a result of handling, storage or transportation. Flexible packaging material shall have a minimum expected life in outside storage conditions of 12 months from the date of delivery.

#### **6.3.2 Identification Tag**

Where specified in the Purchasing Schedule each Product item shall be identified using a weatherproof marking pen on a corrosion resistant metal identification tag securely wired to the Product in a conspicuous position using a galvanized tie wire with the following information:

- a) Material Master Record number (MMR);
- b) Contract number;
- c) Purchase order number;
- d) Valve identification number.

#### **6.3.3 Marking of Packaging**

Where requested in the purchasing schedule the Product shall be identified by marking on the outside of any protective packaging the same information as shown on the identification tag.

## **7 Manuals**

### **7.1 Format and Language**

Where required, Product shall be supplied complete with appropriate installation, operation and maintenance instructions or manuals, in clear diagrammatic and text format, in English. Additional hard or electronic copies shall be as detailed in the Table 11.1.

### **7.2 Content**

The manuals shall contain all the relevant information required to commission and maintain the Product in operational service, including the following:

- a) Details of Product features
- b) Operational adjustments
- c) Installation and commissioning instructions
- d) Preventative maintenance requirements and intervals
- e) Testing procedures
- f) Trouble shooting guidelines
- g) Complete list of parts and associated exploded views or sectional diagrams and reference part numbers

## **8 Spare Parts and Special Tools**

### **8.1 Spare Parts**

#### **8.1.1 Interchangeability**

All spare parts shall be interchangeable in accordance with Clause 3.1 of AS 4795.1.

#### **8.1.2 Availability**

Spare parts and servicing facilities for the valves shall be readily available in Western Australia.

### **8.2 Special Tools**

Any special tools required for services and maintenance of the Product shall be supplied.

## 9 Transportation, Handling and Storage

### 9.1 General

Transportation, handling and storage facilities shall be designed to prevent Product damage or defects and to maintain Product free of deleterious matter. Product shall not be dropped off elevated vehicle platforms or sites. Mechanical handling equipment shall be in accordance with AS 2550.1, AS 2550.3, AS 2550.5 and AS 2550.11 and shall be appropriate to the loads to be lifted. Manual handling shall be in accordance with the National Standard for Manual Handling and the National Code of Practice for Manual Handling, published by National Occupational Health and Safety Commission, Australia. Product restraint during transportation shall be in accordance with Load Restraint Guide—Guidelines for Safe Carriage of Loads on Road Vehicles, published jointly by the Federal Office of Road Safety and the National Road Transport Commission, Australia.

**NOTE:**

Where wire ropes or chains are used for loading and unloading, they should not come into direct contact with Product. Lifting elements in direct contact with Product should be of a non-abrasive design e.g. elastomeric or fabric webbing straps. During transportation, Product restraints should be checked for tension at regular intervals of travel and should not be released until the transporting vehicle is resting in a secure stable disposition on level ground.

### 9.2 Preservation of Product in Storage

Product shall be stored in original Product packaging in accordance with the published requirements of the manufacturer, prior to installation. Sensitive component materials shall be protected from extended exposure to direct sunlight and high temperatures e.g. elastomeric components shall be stored in accordance with the general principles of AS 1646. Designated Product storage areas shall be of sufficient size to accommodate Product deliveries and shall be flat, reasonably level and free of combustible vegetation, sharp stones or projections that could cause Product damage or defects.

## 10 Quality Assurance

### 10.1 Certification

#### 10.1.1 Certification of Product

Wherever this Specification requires compliance with nominated Product and test Standards, conformance shall be certified by means of a Certification Scheme, conducted by a Certification Body. Each Certificate shall expressly attest compliance of all Product items with the nominated Standards. Wherever specified, Certificates shall be submitted to the Officer nominated for this purpose. Product shall be marked in accordance with the requirements of the Certification Body.

**NOTE:**

Compliance of Product including related accessories and services with nominated Standards and specified requirements may be verified by means of a Product Verification Report provided by a Product Assessor. The Product Verification Report should identify all relevant Certificates of Product compliance, duly issued in accordance with Certification Scheme rules.

#### 10.1.2 Quality System

The processes for manufacture, testing, supply, transportation, handling, delivery and storage of Product to be supplied in accordance with this Specification shall form part of a documented Quality System. The System shall be certified by a Certification Body as complying with the requirements of AS/NZS ISO 9001 and shall provide for identification and traceability, control of production and delivery to the specified destination, customer verification and control of documents and records.

#### 10.1.3 Product Re-verification

Product compliance with the Specification shall be subject to re-verification by a Product Assessor when, during the agreed Product supply period, there occurs any:

- substantive change in Product design, material formulation or performance
- Product failure to perform in operational service to the nominated performance specification.

Re-verification shall require the issue of a new or supplementary Product Verification Report. Product components and test outcomes that are not significantly affected by the Product change or failure may be excluded from the scope of re-verification, provided that these outcomes have already been reported in a current valid Product Verification Report that is acceptable to the Corporation.

Wherever the requirements of the Specification apply to a Product supply period in excess of three years, continuing acceptance of Product shall be subject to re-verification. The purpose of re-verification shall be to confirm the continuing compliance of Product quality and production control processes with the requirements of the Specification

## 10.2 Compliance and Acceptance

### 10.2.1 Means of Demonstrating Compliance

Compliance with this Specification shall be demonstrated by means of Product Appraisal and issue by a Product Assessor of a Product Verification Report that confirms compliance. Otherwise, Product shall be deemed non-compliant and ineligible for registration as Product authorised for use in Corporation infrastructure.

**NOTES:**

1. Where a project includes design work including Product design, Product Appraisal may form part of the project design review process and the Product Assessor may be a member of the project design review team.
2. A Product Verification Report should verify the extent of compliance with the Specification including all relevant 'Technical Compliance Schedule' Appendices and the currency of a Certificate where relevant to the Product.

### 10.2.2 Acceptance Criteria

For acceptance, Product shall be supplied as specified in the Purchasing Schedule.

Prior to the implementation of any arrangement to supply Product, the Supplier shall, in accordance with specified requirements:

- nominate applicable Product Warranty terms; and
- provide documentary verification in the form of a current valid Certificate or Product Verification Report as appropriate to the Product; and
- detail each element of Product that does not comply with the specified requirements together with the extent of non-compliance.

**NOTE:**

Where the Specification includes Technical Compliance Schedules, the nature and extent of all non-compliances should be provided in accordance with the appropriate Schedules.

## **10.3 Non-compliant Product**

### **10.3.1 General**

Product whose design, workmanship or performance fails to conform to the specified requirements shall be clearly tagged and quarantined by the Supplier as non-compliant and shall be subject to rejection for return to and replacement by the Supplier.

Where the Specification includes a 'Technical Compliance Schedule', Product shall be deemed non-compliant except where a Supplier has demonstrated compliance in accordance with the requirements of the 'Technical Compliance Schedule' Appendices of the Specification.

### **10.3.2 Manufacturing Repairs (In-process)**

Welding, the use of fillers and other repairs shall generally not be permissible on Product which is in the course of production. Repairs to custom-built Products such as axially-split pumps and large valves may be considered only if determined by the Corporation to be minor casting repair work in non-strategic locations. Accordingly, details of any defect which the Manufacturer considers can be repaired; together with details of proposed repair procedures shall be submitted in writing for determination by the Corporation.

The Manufacturer shall make provision in its production Quality System and in the appropriate ITP's for sufficient hold points whenever casting defects are encountered. Production work on non-compliant components shall cease and repair work shall not commence until the following details have been confirmed by the Corporation in writing:

- a) That repair of the non-compliant components in lieu of their replacement is acceptable; and
- b) That proposed repair procedures are acceptable; and
- c) That any proposal to vary the terms of the original Product Warranty as a consequence of the in-process repair is acceptable.

### **10.3.3 Product Warranty**

The Supplier shall replace non-compliant Product with Product that conforms to the acceptance criteria or shall repair or rectify all faults, damage or losses caused by defective Product. Except as may otherwise be specified, the Product Warranty shall indemnify and keep indemnified the Corporation against all losses suffered by the Corporation as a result of non-compliant Product for a period no less than 24 months after Product delivery or 12 months after Product installation, whichever period elapses first.

### **10.3.4 Product Repair**

All reasonable proposals for repair or remedy of defects will be considered, provided that each such proposal is accompanied by a methodology statement that accords with the performance objectives of this Specification, as determined by the Corporation. For acceptance, a proposal for repair or remedy of Product defects shall not void or otherwise diminish the provisions of the Product Warranty.

# 11 Appendix A: Project Specific Requirements (Normative)

## 11.1 General

Project specific information and requirements, not included elsewhere in this Strategic Product Specification shall apply as specified in the following clauses.

## 11.2 Revisions to Specification Text

Notwithstanding the content of sections 1 to 10 of this Specification, the following amendments to the Specification shall apply and shall prevail in the event of conflict with section 1 to 10 content.

## 11.3 Technical Requirements

Table 11.1 details project specific requirements for Butterfly valves to be procured.

**TABLE 11.1: OF PROJECT TECHNICAL REQUIREMENTS**

Item		Requirement/Value	
Number of valves required			
Nominal size DN			
Pressure class PN			
Application	Shut-off	Yes/No	
	Throttling	Yes/No	
	Regulating	Yes/No	
	Unidirectional	Yes/No	
	Bidirectional		
Maximum static pressure		kPa	
Maximum dynamic (surge) pressure		kPa	
Maximum pressure differential		kPa	
Maximum continuous velocity		m/s	
Maximum emergency velocity		m/s	
Maximum emergency velocity period		min	
Operation	Frequency of operation		
	Opening time	secs	
	Closing time	secs	
Valve actuator type	Manual	Handwheel	Yes/No
		Spindle cap	Yes/No
	Electric	Yes/No	
	Pneumatic	Yes/No	
	Hydraulic	Yes/No	
Extended spindle (valve pit service)		Yes/No	
Extended spindle distance from valve centerline to top of spindle cap, handwheel or actuator			
Type of service	Above ground or non-flooding valve pit	Yes/No	
	Valve pit subject to flooding	Yes/No	
Torque limiting device		Yes/No	
Spindle cap lockout device compatibility (refer to NOTE)		Yes/No	
Remote position indicator (extended spindle configuration)		Yes/No	
Direction of rotation to close valve		Anti-clockwise	
Manuals (Section 7)	Electronic copy required		
	Number of extra hard copies required		
Energy supply	Electrical (provide details)		
	Pneumatic (provide details)		
	Hydraulic		

**NOTE:**

If the spindle cap lockout device option is required a copy of Drawing EG 20-11-2 should be attached at Appendix D.

# 12 Appendix B: Technical Compliance Schedules (Normative)

## 12.1 Compliance Schedules

Suppliers shall demonstrate Product compliance with the Specification by completing Technical Compliance Schedules 1A (Table 12.1A) and 1B (Table 12.1B), and Technical Compliance Schedule 2 (Table 12.2), on an item by item basis.

Table 12.1A refers to clauses contained in AS 4795.1 and Table 12.1B refers to additional clauses contained in SPS 260. For acceptance, the extent of scheduled technical item compliance shall be supported by verifiable documentary evidence. Each scheduled item nominates a Specification clause number with which the extent of Product compliance shall be demonstrated.

The Supplier shall denote compliance of an item by ticking the unshaded ‘Yes’ column appropriate to that item. Where Product does not comply with specified requirements, the Supplier shall tick the ‘No’ column and shall detail the reasons for non-conformance and any proposed alternatives in the ‘Comments’ column. The Supplier shall denote acceptance and understanding of a Specification clause by ticking the corresponding ‘Noted’ column wherever unshaded.

**Failure to notify the Corporation of all non-compliant Product components, including the extent of non-compliance, may void an accepted offer to supply or may result in rectification of all non compliant Product elements, at the Supplier’s cost.**

Compliance Schedule 2 refers to information to be supplied by the supplier/manufacturer.

**TABLE 12.1A: TECHNICAL COMPLIANCE SCHEDULE 1A**

Wafer and Lugged Butterfly Valves					
Section/Clause		Noted	Compliance		Comments
			Yes	No	
<b>1. SCOPE AND GENERAL</b>					
1.1	Scope				
1.2	Application				
1.3	Normative References				
1.4	Definitions				
1.5	Designation of Size				
1.6	Allowable Operating Pressures				
<b>2. MATERIALS AND COMPONENTS</b>					
2.1	General				
2.2	Corrosion-Resistant Materials				
2.3	Contamination of Water				
2.4	Elastomeric Components				
<b>3. DESIGN</b>					
3.1	General				
3.2	End Connections				
3.2.1	General				
3.2.2	Wafer				
3.2.3	Tapped Lugged				
3.3.1	Castings				
3.3.2	External Drainage Holes				
3.3.3	Face-to-Face Dimensions				
3.3.4	Seal				
3.3.5	Shaft				
3.3.6	Shaft Sealing and Ingress				
3.3.7	Shaft Bearings				
3.4	Operation				
3.4.1	General				
3.4.2	Handle and Notch Plate				
3.4.3	Spindle Cap and Key				
3.4.4	Extension Spindles				
3.4.5	Gearboxes				
3.4.6	Torque-Limiting Device				
3.4.7	Lockout Devices				

3.5	Lifting Device				
3.6	Fasteners				
<b>4. COATINGS</b>					
4.1	General				
4.2	Components				
<b>5. PERFORMANCE TESTS</b>					
5.1.1	General				
5.1.2.2	Production testing				
5.3.1	Coating Test				
5.3.2	Body Strength Test				
5.3.3	Free-End Test				
5.3.4	Seating Test				
5.3.5	Reverse Seating Test				
<b>6. MARKINGS AND PACKAGING</b>					
6.1	Marking				
6.1.1	On Body of Valve				
6.1.2	Nameplate or Label				
6.2.	Direction of Closure for Handwheels and Caps				
6.3	Packaging				

**TABLE 12.1B: TECHNICAL COMPLIANCE SCHEDULE 1B**

<b>Wafer and Lugged Butterfly Valves</b>					
Section/Clause		Noted	Compliance		Comments
			Yes	No	
<b>1. SCOPE AND GENERAL</b>					
1.1	Scope				
1.2	Referenced Documents				
1.3	Definition and Notation				
<b>2. MATERIALS AND COMPONENTS</b>					
2.1	General				
<b>3. DESIGN</b>					
3.1	General				
3.2	End Connections				
3.2.1	Wafer				
3.2.2	Tapped Lugged				
3.3	Component Design				
3.4	Operation				
3.4.1	General				
3.4.2	Torque Limiting Device				
3.4.3	Remote Position Indicator				
3.4.4	Direction of Rotation				
3.5	Electric Actuator				
3.6	Lockout Devices				
3.6.1	Spindle Caps				
3.6.2	Handles and Handwheels				
3.6.3	Electric Actuators				
<b>4. PROTECTIVE COATINGS</b>					
4.1	General				
<b>5. TESTING</b>					
5.1	General				
5.2	Notification of Testing				
5.3	Access to the Place of Manufacture				
5.4	Place of Manufacture other than WA				
5.5.1	Production Tests				
5.5.2	Test Certificates				
<b>6. MARKINGS AND PACKAGING</b>					
6.1	Marking				
6.1.1	Body Markings				
6.2	Direction of Closure				
6.3	Packaging				
6.3.1	General				
6.3.2	Identification Tag				
6.3.3	Marking of Packaging				

<b>7. MANUALS</b>					
7.1	Format and Language				
7.2	Content				
<b>8. SPARE PARTS &amp; SPECIAL TOOLS</b>					
8.1	Spare Parts				
8.1.1	Interchangeability				
8.1.2	Availability				
8.2	Special Tools				
<b>9. TRANSPORTATION, HANDLING AND STORAGE</b>					
9.1	General				
9.2	Preservation of Product in Storage				
<b>10. QUALITY ASSURANCE</b>					
10.1	Certification				
10.1.1	Certification of Product				
10.1.2	Quality System				
10.1.3	Product Re-verification				
10.2	Compliance and Acceptance				
10.2.1	Means of Demonstrating Compliance				
10.2.2	Acceptance Criteria				
10.3	Non-compliant Product				
10.3.1	General				
10.3.2	Manufacturing Repairs				
10.3.3	Product Warranty				
10.3.4	Product Repair				

Name of Supplier:

Signature:

Date:

When requested by the Corporation, the Supplier shall provide the information required by Technical Compliance Schedule 2 as shown in **TABLE 12.2**.

**TABLE 12.2: TECHNICAL COMPLIANCE SCHEDULE 2**

<b>Wafer and Lugged Butterfly Valves</b>			
<b>1. SUPPLIER'S REPRESENTATIVE</b>			
1.1	Full name		
1.2	Postal address		
1.3	Facsimile number		
1.4	Email address		
1.5	Phone number		
1.6	Mobile number		
<b>2. QUALITY ASSURANCE</b>			
3.1	Extent of third party accreditation of supplier		
3.2	Extent of third party accreditation of manufacturer		
3.3	Details of certificates and verification reports attached		(Yes/No)
<b>3. TECHNICAL INFORMATION</b>			
3.1	Performance information		(Yes/No)
3.2	Details of the manufacturer's inspection and testing plans supplied.		(Yes/No)
3.3	Valve and actuator drawings supplied.		(Yes/No)
3.4	Details of servicing facilities in Perth supplied		(Yes/No)
3.5	Additional pamphlets and drawings in conjunction with the technical literature supplied.		(Yes/No)
<b>4. VALVE DESIGN AND MANUFACTURE</b>			
4.1	Manufacturer's name		
4.2	Place of manufacture		
4.3	Valve model		
4.4	Valve seal and type e.g. seal-on-body		
4.5	Type		
4.6	Size (DN)		
4.7	Pressure class (PN)		
4.8	Valve(s) rated for full end-of-line service without restraint at the free end		
4.9	Mass of valve	kg	
4.10	End connection standard e.g. 4087		
4.11	Actuator IP rating		
4.12	Actuator type		
4.13	Maximum continuous flow velocity	m/s	
4.14	Maximum emergency flow velocity	m/s	
4.15	Maximum differential pressure	kPa	
4.16	Body test pressure	kPa	
4.17	Disc strength test pressure	kPa	
4.18	Seat test pressure	kPa	
4.19	Flow coefficient (maximum opening) kV		
4.20	Valve shaft unseating torque	Nm	
4.21	Valve shaft torque for maximum continuous flow	Nm	
4.22	Valve shaft torque for emergency flow	Nm	
<b>5.0 MATERIALS</b>		<b>MATERIAL</b>	<b>STANDARD</b>
5.1	Body		
5.2	Disc		
5.3	Shaft		
5.4	Shaft bearings		
5.5	Liner, seals and O-rings		
5.6	Fasteners		
5.7	Disc pins and internal fasteners		
5.8	Handle and notch plate		

5.9	External fasteners		
5.10	Coating		
<b>6.0 MANUAL ACTUATOR</b>			
6.1	Manufacturer		
6.2	Model/Type		
6.3	Rated maximum output torque	Nm	
6.4	Input torque for rated maximum output torque	Nm	
6.5	Input torque for rated emergency flow rate	Nm	
6.6	Body material		
6.7	Shaft material		
6.8	Gear material		
6.9	Bearing(s) type and material		
6.10	Lubricant		
6.11	Coating		
<b>7.0 HANDWHEEL/CAP</b>			
7.1	Number of handwheel turns from valve fully open to fully closed		
7.2	Direction of handwheel rotation to close valve		
7.3	Spindle cap method of accommodating locking device		
<b>8.0 POSITION INDICATOR</b>			
8.1	Manufacturer		
8.2	Model		
8.3	IP rating in accordance with AS 60529		
8.4	Method of sealing against external environment and local flooding		
8.5	Scale marking e.g. fully open, intermediate and fully closed		
<b>9.0 ELECTRIC ACTUATOR</b>			
9.1	Manufacturer		
9.2	Model		
9.3	Power supply and tolerance		
9.4	Enclosure protection rating IP		
9.5	Motor size	kW	
9.6	Motor full load current	A	
9.7	Motor rated voltage	V	
9.8	Motor starting current	A	
9.9	Motor efficiency – Full load		
9.10	Power factor – Full load		
9.11	Motor duty (Number of starts per hour)		
9.12	Motor protection		
9.13	Motor winding insulation PN and temperature rise		
9.14	Thermal sensor type		
9.15	Thermal sensor trip temperature		
9.16	Temperature rating of complete actuator including ancillaries		
9.17	Travel limit switches number and rating		
9.18	Status indication contacts – number and rating		
9.19	Fault indication contacts – number and rating		
9.20	Integral push buttons and local remote selector fitted		
9.21	Position transmitter details		
9.22	Transmission bearing type		
9.23	Transmission bearing lubricant		
9.24	Output shaft speed	rpm	
9.25	Operating time valve open to valve closed	secs	

Name of Supplier:

Signature:

Date:

## 13 Appendix C: Material Master Records (Informative)

The following Material Master Records (MMR) comprise Corporation catalogue numbers that are unique to the particular products described for the purposes of Corporation activities or work.

MMR	PURCHASE ORDER LONG TEXT
18691	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN50; PN16; Resilient Seal on Body; To suit AS 2129 Table E Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Multi Position Lever Lock Handle; Stainless Steel Disc & Shaft; General Purpose Use.
18692	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN80; PN16; Resilient Seal on Body; To suit AS 2129 Table E Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Multi Position Lever Lock Handle; Stainless Steel Disc & Shaft; General Purpose Use.
19137	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN80; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Manual Gearbox Actuated; Gear Ratio Minimum 20:1; Anti-Clockwise Closing; General Purpose Use.
9953	Valve, Butterfly; Ductile Cast Iron; Lugged Wafer Body; DN100; PN16; Resilient Seal on Body; To suit AS 2129 Table E Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Multi Position Lever Lock Handle; Stainless Steel Disc & Shaft; General Purpose Use .
19136	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN100; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Manual Gearbox Actuated; Gear Ratio Minimum 20:1; Anti-Clockwise Closing; General Purpose Use.
9954	Valve, Butterfly; Ductile Cast Iron; Lugged Wafer Body; DN150; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Multi Position Lever Lock Handle; Stainless Steel Disc & Shaft; General Purpose Use.
19135	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN150; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Manual Gearbox Actuated; Gear Ratio Minimum 20:1; Anti-Clockwise Closing; General Purpose Use.
17122	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN200; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Multi Position Lever Lock Handle; 2 Position Padlock Tabs; Stainless Steel Disc & Shaft; General Purpose Use.
17123	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN250; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Manual Gearbox Actuated; Anti-Clockwise Closing; General Purpose Use.

MMR	PURCHASE ORDER LONG TEXT
17125	Valve, Butterfly; Ductile Cast Iron Lugged Wafer Body; DN300; PN16; Resilient Seal on Body; To suit AS/NZS 4087 Figure B5 Flanges; Protective Coatings in Accordance with Section 4 of SPS260; Above Ground Service; Manual Gearbox Actuated; Anti-Clockwise Closing; General Purpose Use.

**END OF DOCUMENT**