# Betta Fluid Control Co Ltd

## PRODUCT APPRAISAL REPORT PA 1128 Issue 4

BETTA® Spring Hydrant Valves

### AS 3952:2002 Water supply – Spring hydrant valve for waterworks purposes

Issue 1 Published: 27 June 2012
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## Document History

The following information indicates the changes made to this document.

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### Peer Reviewers

| Name/Title | Organisation | Date |
|---|---|---|
| Product Appraisal Technical Advisory Group | WSAA | 26 June 2012 |
| WSAA Expert Panel | WSAA | 26 June 2012 |
| Carl Radford, Product Appraisal Manager | WSAA | 27 June 2012 |
| Peter Pittard, WSAA Consultant | WSAA | 24 March 2017 |
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| Carl Radford, Product Appraisal Manager | WSAA | 26 March 2018 |
| Peter Pittard, WSAA Consultant | WSAA | 12 November 2019 |
| Carl Radford, Product Appraisal Manager | WSAA | 21 November 2019 |

## Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

# CONTENTS

# 1 EXECUTIVE SUMMARY

Betta Fluid Control Co Ltd is a privately-owned joint venture, originally incorporated in 2007 as Betta Fluid Machinery Manufacturing Co Ltd, with four Chinese and two Australian partners. Appointed stocking agents distribute the Betta range of products within Australia.

Betta in Wuxi, Jiangsu Province, Peoples Republic of China, manufactures the BETTA DN 80 spring hydrant valves to AS 3952:2002 *Water supply - Spring hydrant valve for waterworks purposes*.

This Issue 4 is to change the Report Holder name from Betta Fluid Machinery Manufacturing Co Ltd to Betta Fluid Control Co Ltd and update the quality certification documentation. There has been no change to the manufacturing processes.

Issue 3 was to renew the original Appraisal Report that expired in June 2017 and to incorporate swab type hydrants.

Spring hydrant valves are intended for use with drinking and recycled water supply and are operated by means of attachment of a standpipe.

Betta supplies standard spring hydrants and swab version spring hydrants, where the supports that house the helical compression spring and dome can be removed to allow for direct full-bore access to the pipeline for insertion/removal of swabs.

The DN 80 Betta spring hydrant valves are flanged to AS 4087 Fig B5, DN 80 or DN 100.

Betta has a certified Quality Management System in compliance with ISO 9001:2015.

The BETTA spring hydrant valves have ISO type 5 product certification to AS 3952:2002 *Water supply - Spring hydrant valve for waterworks purposes*.

The Betta spring hydrant valves included in this appraisal are deemed to meet the requirements of WSA PS- 267 *Hydrants (Spring) for Pressure Applications - Water Supply* and are therefore considered as 'fit-for-purpose'.

## 1.1 Recommendations

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise Betta DN 80 spring hydrant valves and swab hydrants, as described in Section 3, for use in water supply pressure pipelines, provided they are installed in accordance with applicable WSAA Codes and the manufacturer's requirements.

# 2 THE APPLICANT

## 2.1 The Supplier

Betta Fluid Control Co Ltd does not hold stocks of BETTA spring hydrants in Australia. Appointed stocking agents purchase the products directly from the Betta factory in Wuxi and distribute the range of products within Australia. Contact numbers for the stocking agents are listed in Appendix D.

## 2.2 The Manufacturer

Betta Fluid Control Co Ltd is located at Beigongwu Road, Yuqi Industry Park, Huishan District, Wuxi, Jiangsu Province, China.

Betta Fluid Control Co Ltd is a privately-owned joint venture, originally incorporated in 2007 as Betta Fluid Machinery Manufacturing Co Ltd with four Chinese and two Australian partners. Betta currently employs 45 people that include qualified technical engineers, design engineers and mechanical engineers. Betta occupies 3000 square metres of factory with the possibility of adding another 2000 square metres for future expansion.

Betta's current annual capacity is 150,000 units with the possibility to expand, as their product range increases. Betta currently manufactures spring hydrants, fire hydrants, swing check valves, resilient seated gate valves and air release valves.

Betta sources its supply of ductile iron castings for the spring hydrant valve body and yoke from an ISO 9001 certified ductile iron casting supplier. The supply of castings is to Betta drawings and specifications.

Castings and other components e.g. copper alloy dome, coating powder, EPDM seat, stainless steel components are inspected and tested for compliance with AS 3592:2002 and Betta's quality production procedures. The castings are subsequently finished, coated, assembled and tested at Betta's manufacturing facility.

## 3 THE PRODUCT

Betta spring hydrant valves are manufactured in compliance with AS 3952:2002 *Water supply - Spring hydrant valve for waterworks purposes*.

Betta supplies standard spring hydrants and swab version spring hydrants, where the supports that house the helical compression spring and dome can be removed to allow for direct full-bore access to the pipeline for insertion/removal of swabs.

The DN 80 Betta spring hydrant valves are flanged to AS 4087 Fig B5, DN 80 or DN 100.

All internal and external surfaces of the Betta spring hydrant valve body and yoke are coated with thermosetting epoxy powder (FBE) applied by Betta using a fluidised-bed method, in accordance with AS/NZS 4158:2003 *Thermal-bonded polymeric coatings on valves and fittings for water industry purposes.*

Spring hydrant valves are rated as PN16 with an Allowable Operating Pressure (AOP) of 1600 kPa.

For non-drinking water applications Betta can provide spring hydrant valves with a lilac coloured coating.

A drawing is attached in Appendix A.

## 4 SCOPE OF THE APPRAISAL

The scope of this appraisal covers DN 80 Betta spring hydrant and swab hydrants, as described in Section 3 and as listed in the ISO Type 5 Product Certification Product Schedule in Appendix B.

## 5 APPRAISAL CRITERIA

### 5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts spring hydrant valves manufactured in compliance with AS 3952:2002 *Water supply-spring hydrant valve for waterworks purposes* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Certification Assessment Body (CAB) or by a CAB accredited by international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08

### 5.2 Performance Requirements

Betta spring hydrant valves have been appraised for compliance with AS 3952:2002 *Water supply-spring hydrant valve for waterworks purposes.*

Appraisal criteria are also determined by the WSAA Product Appraisal Technical Advisory Group and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

The following Product Specifications are also relevant to this application:

WSA PS- 267 *Hydrants (Spring) for Pressure Applications - Water Supply*

WSA PS 312 *Flange Gasket and O-rings*

Copies of the above Product Specifications can be found in Appendix C or downloaded from the WSAA website.

## 6 COMPLIANCE WITH APPRAISAL CRITERIA

### 6.1 Compliance with Quality Assurance Requirements

Betta has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. 12 100 38509 TMS issued to Wuxi Betta Fluid Control Co Ltd by TÜV SÜD Management Service GmbH.
- AS/NZS 3952:2002 ISO Type 5 product certification licence No.22026 issued to Betta Fluid Control Co Ltd by Australian Certification Services Pty Ltd.

Betta has also submitted copies of relevant ISO 9001 Quality Management System licenses appropriate to their component suppliers. These certifications have not been included in this report due to "commercial in confidence" reasons.

Copies of the primary Quality Assurance and Product Certification licences have been included in Appendix B and are also available for downloading from the WSAA members website.

### 6.2 Compliance with Performance Requirements

#### 6.2.1 Type Tests

Betta has provided type test results conducted at the Queensland Testing Laboratory Pty Ltd to demonstrate compliance with the requirements of AS3952. The tests are body design pressure test, flow test, resilient seat hydrostatic test and resilient seat infiltration test.

#### 6.2.2 Contact with drinking water

Betta has submitted Test Report 1513541 from NATA accredited AMS Laboratories, dated 29 October 2015, for a DN 80 Betta spring hydrant valve to demonstrate compliance with AS/NZS 4020:2005 *Testing of products for use in contact with drinking water*.

#### 6.2.3 Components material list

AS 3592 Table 2.1 requires spring hydrant valves manufactured from ductile iron to conform to minimum Grade 400-12. Higher strength ductile irons in accordance with AS 1831 are acceptable. The spring hydrant valves are manufactured using the higher grade 500-7 material designation.

The material requirements of the components used for the Betta spring hydrant valves comply with AS 3592:2002.

**TABLE 2**

**BETTA HYDRANT VALVE COMPONENTS MATERIAL LIST**

| Component | Material | AS 3952 | | Betta | Comment |
|---|---|---|---|---|---|
| | | Standard | Min Grade | Grade | |
| Body and Yoke | Ductile iron | AS 1831 | 400-12 or 500-7 | 500-7 | Complies |
| Dome | Copper Alloy | AS 1565 | C48600 | C48600 | Complies |
| Helical Compression Spring | Stainless Steel | ASTM A276 | 302 | 304 | Complies |

| | | | | | |
|---|---|---|---|---|---|
| Removable Support (Swab) | Stainless Steel | - | - | 316 | Complies |
| Resilient Seat | Synthetic Rubber | AS 1646 | - | EPDM | Complies |
| Fasteners | Stainless Steel | ASTM A276 | 316 | 316 | Complies |

### 6.2.4 Coatings and linings

Clause 4 of AS 3953 requires all internal and external surfaces of the body and yoke to be coated with a polymeric coating in accordance with AS/NZS 4158 *Thermal-bonded polymeric coatings on valves and fittings for water industry purposes.*

The Betta spring hydrant valve body and yoke are coated with the following thermosetting epoxy powders:

(a) Jotun Corro-Coat EP-F 5001 Blue (RAL 5017) or

(b) Akzo Nobel Resicoat R4-ES lilac (HHF03A)

The thermosetting fusion bonded epoxy coatings are applied using an automated air induced fluidised bed coating process and tested to the requirements of AS/NZS 4158. Coatings are tested on all products for thickness, continuity and adhesion during manufacture to ensure coating integrity.

Betta has submitted documentary evidence that that production testing is being carried out to comply with AS/NZS 4158.

For recycled water applications Betta offers hydrants with all surfaces of the Betta spring hydrant valve body and yoke coated with the Akzo Nobel Resicoat lilac coloured fusion bonded epoxy.

### 6.2.5 Flanges and flange gaskets

The flange dimensions conform to AS/NZS 4087:2011 *Metallic flanges for waterworks purposes* – Figure B5 (PN16), DN 80 or DN 100.

Betta recommends full face flange gaskets made from solid 3 mm thick EPDM, complying with WSA 109:2011 *Industry Standards for Flange Gaskets and O Rings* and WSA PS 312 *Flanged Gaskets and O-Rings for flanges*.

Flange gaskets are supplied by Betta resellers.

## 7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Spring hydrant valves are considered to be standard water industry products and installation instructions are not considered unnecessary.

## 8 PRODUCT MARKING

The Betta spring hydrant valves have the following markings conforming to AS 3952-2002. See Figure 1.

- Manufacturer’s name or mark – BETTA
- Nominal flange size – DN XX
- Year of manufacture – XXXX
- Class of spring hydrant valve – PN 16
- Australian Standard – AS 3952
- Certification Licence No – OMK22026


**FIGURE 1 BETTA SPRING HYDRANT MARKING**

## 9 PACKAGING AND TRANSPORTATION

All products are wrapped in bubble wrap, independently packed in cardboard boxes and packed in palletised wooden ply boxes. See Figure 2.


**FIGURE 2 PACKAGING FOR TRANSPORTATION**

## 10 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the *Competition and Consumer Act 2010 (Cth)*, which covers manufacture to the relevant standard, and details of Betta's warranty is included in their terms and conditions of sale.

## 11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

Installation trials were not required as part of this Appraisal.

## 12 FUTURE WORKS

There are no outstanding future works items.

## 13 DISCLAIMER

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

This Report applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this Report.

To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

The following information explains a number of very important limits on your ability to rely on the information in this Report. Please read it carefully and take it into account when considering the contents of this Report.

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

### 13.1 Issue of Report

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

### 13.2 Limits on Reliance on Information and Recommendations

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This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it. The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnify insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

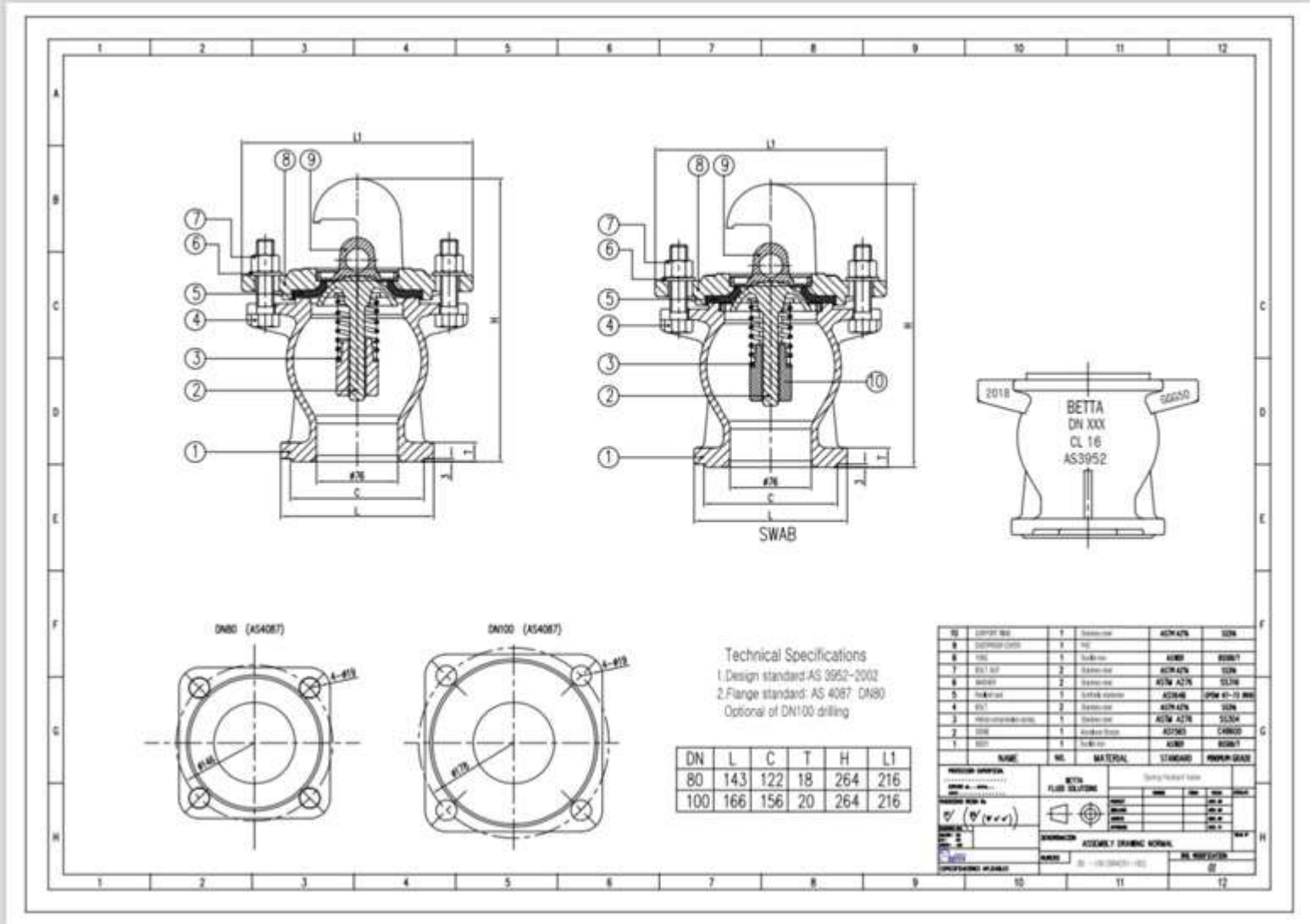
### 13.3 No Updating

Neither the Publisher(s) nor any person involved in the preparation of this Report [has] [have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher(s) or the Product or any other matter.

### 13.4 No Warranty

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

# APPENDIX A – PRODUCT LITERATURE




| DN | L | C | T | H | L1 |
|---|---|---|---|---|---|
| 80 | 143 | 122 | 18 | 264 | 216 |
| 100 | 166 | 156 | 20 | 264 | 216 |

## APPENDIX B – QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available for downloading from the WSAA Members Website.

### TABLE B1
### BETTA FLUID CONTROL CO LTD – MANAGEMENT SYSTEMS

| Beigongwu Road, Yuqi Industry Park, Huishan District, Wuxi, Jiangsu Province, China | |
|---|---|
| Quality Systems Standard | ISO 9001:2015 |
| Certification licence no. | 12 100 38509 TMS |
| Certifying agency | TÜV SÜD Management Services GmbH |
| Current date of certification | 15 July 2019 |
| Expiry date of certification | 17 June 2022 |

### TABLE B2
### BETTA FLUID CONTROL CO LTD – PRODUCT CERTIFICATION

| Beigongwu Road, Yuqi Industry Park, Huishan District, Wuxi, Jiangsu Province, China | |
|---|---|
| Product Standard/Spec. | AS/NZS 3952:2002 |
| Certificate No. | 22026 |
| Certifying agency | Australian Certification Services Pty Ltd |
| First date of certification | 3 July 2019 |
| Current date of certification | 3 July 2019 |
| Expiry date of certification | 18 June 2024 |

TÜV SÜD Management Service

# CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that

**WUXI BETTA FLUID CONTROL CO., LTD.**
**Beigong Wu Road, Yuqi Area, Economic Development Huishan District, Wuxi City, Jiangsu Province, P. R. China**
**Post Code: 214183**

Unified social credit code: 9132020669452924X7

has established and applies
a Quality Management System for

**Design, Manufacture and Sales of Water Supply Gate Valves, Hydrant Valve, Check Valve, Butterfly Valve and Fittings Used for Water Pipes.**

An audit was performed, Order No. **7482219061**.

Proof has been furnished that the requirements
according to

**ISO 9001:2015**

are fulfilled.

The certificate is valid from **2019-07-15** until **2022-06-17**.

Previous certificate valid until 2019-06-17.

The certified organization shall undergo and pass
the regular surveillance audit to maintain the validity of this certificate.

Certificate Registration No.: **12 100 38509 TMS**.

Information about this certificate can be inquired at the official website
of Certification and Accreditation Administration of the People's Republic of China (www.cnca.gov.cn).

Product Compliance Management
Munich, 2019-07-17

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstrasse 57 • 80339 München • Germany
www.tuev-sued.de/certificate-validity-check

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

*PRODUCT CONFORMITY SCHEME – FULL CERTIFICATION*

# Certification Licence

Australian Certification Services Pty Ltd grants to:

## Betta Fluid Control Co., Ltd.

Trading as Betta Fluid Control Co., Ltd.

the right to use the Certification Mark as shown above in conjunction with the Certificate No. on product/s as identified in the Schedule and as listed on the Australian Certification Services Website www.certificationservices.com.au and have been shown to comply with the relevant Standard/s referred to below. The Licensee is granted a licence to use the Certification Mark subject to the rules governing the use.

| | |
|---|---|
| Product Type: | Spring Hydrant Valves |
| Brand: | BETTA |
| Evaluated to: | AS 3952:2002 Water supply—Spring hydrant valve for waterworks purposes |

| | |
|---|---|
| Issue Date: | 3rd July 2019 |
| Initial Issue Date: | 3rd July 2019 |
| Expiry Date: | 18th June 2024 |

Paul Greig
General Manager

Certificate No.: 22026

This certificate remains the property of Australian Certification Services Pty Ltd

The Product Conformity Scheme (PCS) – Full Certification is a conformity assessment scheme based on ISO/IEC 17067 (Scheme Type 5) and SA HB 18.28



Australian Certification Services Pty Ltd ABN 37 121 022 366
PO Box 627 Jannali, NSW 2226 AUSTRALIA
Phone:+61 2 8521 0726 Email:admin@certificationservices.com.au
www.certificationservices.com.au

JAS-ANZ

Certificate Number: 22026
Issue Date: 3rd July 2019
Issue: 01 Revision: 00

# Product Conformity Scheme (PCS)-FULL Certification Licence Schedule

| | |
|---|---|
| Certificate Holder | Betta Fluid Control Co., Ltd.<br>BeiGongWu Road YuQi Industry Park HuiShan District WuXi 214183 JiangSu Province China<br>Website: www.bettaindustries.com |
| Certificate Number | 22026 |
| Certification Standard/s: | AS 3952:2002 Water supply—Spring hydrant valve for waterworks purposes |

**Product Listing**

| Model Identification | Brand Name | Product Description |
|---|---|---|
| 100SP42X1-16Q | BETTA | DN80 PN16 Spring Hydrant Valve Standard Type DN100 Inlet Flange (AS 4087) Coated with Blue Thermosetting Polymeric Material |
| 100SW42X1-16Q | BETTA | DN80 PN16 Spring Hydrant Valve Swab Type DN100 Inlet Flange (AS 4087) Coated with Blue Thermosetting Polymeric Material |
| 80SP42X1-16Q | BETTA | DN80 PN16 Spring Hydrant Valve Standard Type DN80 Inlet Flange (AS 4087) Coated with Blue Thermosetting Polymeric Material |
| 80SW42X1-16Q | BETTA | DN80 PN16 Spring Hydrant Valve Swab Type DN80 Inlet Flange (AS 4087) Coated with Blue Thermosetting Polymeric Material |





Australian Certification Services Pty Ltd ABN 37 121 022 366
PO Box 627 Jannali, NSW 2226 AUSTRALIA
Phone:+61 2 8521 0726 Email:admin@certificationservices.com.au
www.certificationservices.com.au

JAS-ANZ

Certificate Number: 22026
Issue Date: 3rd July 2019
Issue: 01 Revision: 00

# APPENDIX C – WSAA PRODUCT SPECIFICATION

WATER SERVICES ASSOCIATION of Australia

## PRODUCT SPECIFICATION

## WSA PS – 267 HYDRANTS (SPRING) FOR PRESSURE APPLICATIONS - WATER SUPPLY

### 267.1 SCOPE

This specification covers PN 16 DN 80 below-ground spring hydrants for pressure applications in water supply when connecting to water mains[1] using a DN 80 or DN 100 flanged tee (hydrant tee).

### 267.2 REQUIREMENTS

(a) Spring hydrants shall comply with AS 3952:2002.

(b) The outlets to spring hydrants (e.g. claws) for use with recycled water shall be coloured purple[2].

(c) The body thickness of the hydrant seal shall be a minimum of 6 mm.

(d) Flange gaskets shall comply with WSA 109:2011.

### 267.3 QUALITY ASSURANCE

(a) Spring hydrants shall have product certification (ISO Type 5) to AS 3952:2002.

(b) Flange gaskets shall have certificates of compliance to WSA 109:2011.

(c) All products shall be marked in accordance with the conformity assessment body's requirements.

### 267.4 AGENCY OR PROJECT SPECIFIC REQUIREMENTS

| | |
|---|---|
| Flange size (DN 80 or DN 100) | |

NOTES:

1 Includes drinking water and recycled water supply. Colour differentiation is not required.

2 Purple is defined in accordance with RAL[3]DESIGN colour numbers as being no darker than 330 40 40 or 310 50 30 and no lighter than 310 70 15, respectively. It is equivalent to being no darker than P24 Jacaranda or P12 Purple and no lighter than P23 Lilac in accordance with AS 2700:2011 (NZS 7702:1989AA).

3 RAL Deutsches Institut für Gütesicherung und Kennzeichnung e.V. (RAL German Institute for Quality Assurance and Certification)
Siegburger Straße 39
D-53757 Sankt Augustin
http://www.ral.de/farben/en/farbvorlagen/index.html?content1.shtml

# APPENDIX D – SUPPLIER CONTACTS

## Australian Office

Betta Fluid Control Co. Ltd

45 Cyperus Crescent Carseldine, QLD 4034

Tony Iskra Mobile: 0417 500132

Paul Chesterfield Mobile: 0407 736526

Email: sales@bettavalves.com

Website: www.bettaindustries.com

## China Office and Factory

Betta Fluid Control Co. Ltd

BeiGongwu Road, YuQi Industry Park, HuiShan District, WuXi, China. P.C. 214183

Mr Jacky Zhang

Tel: +86-510-83881123

Fax: +86-510-83881217

## Stocking Agents

**Clover Pipelines**

VIC: 03 8373 8000

QLD: 07 3073 7000

NSW: 02 8279 8000

TAS: 03 6111 9500

WA: 08 6166 6800

NT: 08 7999 8400

SA: 08 8120 4600

**Civil Pipe Supplies**

QLD: 07 3204 8906

**Dobbie Dico**

WA: 08 9249 7000


**Melbourne Office**
Level 8, Suite 8.02
401 Docklands Drive
Docklands VIC 3008

**Sydney Office**
Level 9 420 George Street
Sydney NSW 2000
GPO Box 915
Sydney NSW 2001

P +61 (0) 3 8605 7666
email: info@wsaa.asn.au

www.wsaa.asn.au