

# A.A.P Industries Pty Ltd

PRODUCT APPRAISAL REPORT 12/03 Issue 2

MAXIFLO™ Spring Hydrant Valve

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

Publication Date: June 2013



WATER SERVICES  
ASSOCIATION OF AUSTRALIA

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## Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. Its members and associate members provide water and wastewater services to approximately 16 million Australians and to many of our largest industrial and commercial enterprises.

Urban water service providers have a critical role in ensuring that Australians have access to adequate and high quality water services. As Australia's population continues to grow, with most of this growth occurring in cities, that role becomes increasingly important.

WSAA's vision is for Australian urban water utilities to be valued as leaders in the innovative, sustainable and cost effective delivery of water services. WSAA strives to achieve this vision by promoting knowledge sharing, networking and cooperation amongst members. WSAA identifies emerging issues and develops industry-wide responses. WSAA is the national voice of the urban water industry, speaking to government, the broader water sector and the Australian community.

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## 1 EXECUTIVE SUMMARY

PA 12/03 Issue 2 includes amendment to incorporate MAXIFLO™ swab version spring hydrant valves in this Product Appraisal.

MAXIFLO™ DN 80 spring hydrant valves (with optional DN100 flange) are manufactured by Sufa Technology Industry Co. in the Peoples Republic of China (PRC) to comply with the requirements of AS 3952:2002 *Water supply - Spring hydrant valve for waterworks purposes*.

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

The MAXIFLO™ DN 80 swab version spring hydrant valve design allows the spring supports, which house the helical compression spring and dome, to be removed, allowing for direct full bore access to the pipeline for insertion/removal of swabs.

The MAXIFLO™ swab and spring hydrant valves are flanged to AS 4087 Fig B5, DN 80 or DN 100.

Sufa Technology Industry Co. holds ISO 9001 quality management system licence and a product certification licence (ISO Type 5) for their full range of spring hydrant valves (refer to Appendix B).

Sufa Technology Industry Co. has fulfilled all the quality assurance and type testing to the requirements of the WSAA members and associates.

MAXIFLO™ sources its supply of ductile iron castings for the MAXIFLO® swab and spring hydrant valve body and yoke from an ISO 9001 certified ductile iron casting supplier. The supply of castings is to Sufa Technology Industry Co. drawings and specifications.

Castings and other components e.g. ductile iron components, coating powder, EPDM seat, stainless steel components are inspected and tested for compliance with AS 3592:2002 and Sufa Technology Industry Co. quality production procedures. The raw castings are subsequently finished, assembled and tested at its Sufa Technology Industry Co. manufacturing facility.

### 1.1 Recommendations

It is recommended that WSAA members and associates accept/authorise MAXIFLO™ swab and spring hydrant valves, listed in the Schedule to the StandardsMark Licence Certificate No SMKP 21360 referenced in Appendix 'B' for use in water supply pressure pipelines designed and installed in accordance with applicable WSAA Codes, WSAA member integrated Codes and the manufacturer's requirements, where specified.

## 2 THE APPLICANT

### 2.1 The Supplier

A.A.P Industries Pty Ltd is a privately owned company established in 1957 primarily manufacturing steel pipe fittings and now employs over 120 people and claims to be the largest producer of black steel fittings in the southern hemisphere. A.A.P Industries has a manufacturing plant in Sydney producing precision steel products and brass and bronze products for the Australian market. A.A.P Industries is a major importer of brass, bronze, cast iron, cast steel, forged steel and stainless steel valves and fittings, importing from France, Italy, China, India, Korea, Taiwan and Thailand. Until recently AAP Industries was regarded as a wholesaler and manufacturer and had a small advertising profile.

A.A.P Industries has warehouses in every major state and provide a national distribution network to a number of agents and distributors (retail outlets). The A.A.P Industries

administration head office is in Sydney and the bulk warehouse is in Brisbane. A.A.P contact details and a list of agents and distributors are shown in Appendix D.

For more information see [www.aapindustries.com.au](http://www.aapindustries.com.au).

## **2.2 The Applicant/Manufacturer**

### **2.2.1 Sufa Technology Industry Co**

Sufa Technology Industry Co. Ltd is a joint venture established by CNNC Suzhou Valve Co Ltd (SUFA) and DA Company of Germany in August 2000 forming the first public share company in the domestic valve industry in the Peoples Republic of China (PRC). The company is located at 55 Xuyang Road, Xuguan Industry Zone Suzhou 215151, PRC.

Sufa Technology Industry Co. Ltd has introduced advanced technology and equipment from Germany and is specializing in manufacturing ductile iron resilient seated valves and hydrants with electrostatic epoxy resin powder coating. As well as general supply to major cities in PRC the SUFADA and MAXIFLO™ products are exported to more than 10 countries in Europe, North America, South Africa and the Middle East.

For more information see [www.aapindustries.com.au](http://www.aapindustries.com.au).

## **2.3 The Sub-Suppliers**

Sufa Technology Industry Co. sources its supply of raw castings for the MAXIFLO™ swab and spring hydrant valve body and yoke from Wujiang Meiyuan Union Casting Co.

The supply of castings is to Sufa Technology Industry Co. drawings and specifications.

Raw castings sourced from the Wujiang Meiyuan Union Casting Co. are inspected and tested for compliance in accordance with AS 3592 and Sufa Technology Industry Co. quality production procedures. The raw casting are subsequently finished, assembled and tested at its manufacturing facility.

Raw material certificates/details are filed for referencing and matched to batch release documentation presented to AAP on delivery. The process is audited annually by SAI Global at its manufacturing facilities located at 55 Xuyang Road, Xuguan Industry Zone Suzhou 215151, PRC.

This will involve some duplication of testing as Wujiang Meiyuan Union Casting Co will still be required to undertake testing during their quality control processes.

All measurements, testing, assessment, finishing and inspection is carried out by Sufa Technology Industry Co. and is covered under their existing StandardsMark Licence.

## **3 THE PRODUCT**

MAXIFLO™ DN 80 spring hydrant valves are manufactured with 2 variations. The standard version has fixed internal components whilst the swab version has removable internal components. The valves comply with the requirements of AS 3952:2002 *Water supply - Spring hydrant valve for waterworks purposes*.

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

Sufa Technology Industry Co. holds ISO 9001 quality management system licence and a product certification licence (ISO Type 5) for their full range of spring hydrant valves (refer to Appendix B).

All internal and external surfaces of the MAXIFLO™ spring hydrant valve body and yoke are coated with the thermosetting epoxy powders supplied by Juton and applied by Sufa Technology Industry Co. using a fluidised-bed method, in accordance with AS/NZS 4158:2003 *Thermal-bonded polymeric coatings on valves and fittings for water industry purposes*.

Both the swab and spring hydrant valve versions are rated to PN16 with an Allowable Operating Pressure (AOP) of 1600 kPa.

The MAXIFLO™ DN 80 swab spring hydrant valve design allows the spring supports, which house the helical compression spring and dome to be removed, allowing for direct full bore access to the pipeline for insertion/removal of swabs.

For recycled water identification options, Sufa Technology Industry Co can also provide MAXIFLO™ spring hydrant valves with lilac coated yokes.

Ancillary products such as flange gaskets, fasteners and jointing lubricant are also available.

A Technical Data Sheet for the MAXIFLO™ DN 80 spring hydrant valves (with optional DN 100 flanges) and polymeric coatings are detailed in Appendix A.

#### 4 SCOPE OF THE APPRAISAL

The scope of this appraisal is as described in Section 3 and detailed below in Table 1:

**TABLE 1 DN80 MAXIFLO™ SPRING HYDRANT RANGE**

DN80 MAXIFLO™ Spring Hydrant Version	Internal Components	AS 4087 PN16 Flange	Model No.
Standard	Fixed	DN80	VSH80
		DN100	VSH100
Swab	Removable	DN80	VSH80S
		DN100	VSH100S

#### 5 APPRAISAL CRITERIA

##### 5.1 General

Appraisal criteria is determined by the WSAA Infrastructure Products and Materials (IPAM) Network and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

##### 5.2 Quality Assurance Requirements

The WSAA product appraisal network accepts spring hydrant valves manufactured under cover of a third party certified management system complying with AS/NZS ISO 9001 and having ISO Type 5 product certification in accordance with AS 3952:2002 by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by a CAB accredited by international accreditation system recognised by JAS-ANZ.

##### 5.3 Performance Requirements

MAXIFLO™ spring hydrant valves have been appraised for compliance with AS 3952:2002 *Water supply-spring hydrant valve for waterworks purposes*. 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 Specification can be found in Appendix C or downloaded from the WSAA website.



## **6 COMPLIANCE WITH APPRAISAL CRITERIA**

### **6.1 Compliance with Quality Assurance Requirements**

The following certificates and statements have been submitted by AAP Industries Pty Ltd:

- (a) The manufacturer, Sufa Technology Industry Co. has a Quality Management System in compliance with ISO 9001:2008 certified by Det Norske Veritas and issued with Certificate No. 5130-1993-AQ-RGC-RvA that is valid until 26 May 2014.
- (b) Det Norske Veritas is a Conformity Assessment Body (CAB) accredited by a member of the International Accreditation Forum (IAF) Multilateral Recognition Agreement (MLA) recognised by JAS-NZS, which is also a signatory IAF MLA.
- (c) Wujiang Meiyuan Union Casting Co. the foundry that produces the raw casting for the Suzhou Sufada Valve Co Ltd MAXIFLO™ swab and spring hydrants has a Quality Management System in compliance with ISO 9001:2008 certified by Orion Registrar Inc USA.
- (d) A.A.P Industries Pty Ltd is the licensee of product certification (ISO Type 5) for the swab and spring hydrant valves, manufactured to AS 3952 by Sufa Technology Industry Co. (China). The StandardsMark Certificates and Schedules (Licence No SMKP21360) describing the full product range of MAXIFLO™ spring hydrants are shown in Appendix 'B'.

A.A.P Industries Pty Ltd markets their spring hydrant valves under the trademark 'MAXIFLO™' for use in water supply, recycled water and pressure sewerage applications.

The supplier, AAP Industries Pty Ltd does not have a certified Quality Management System in compliance with AS/NZS ISO 9001:2008. AAP has advised that it does have its own non-certified quality management system that functions effectively and is constantly monitored by management. AAP is planning to upgrade their quality system to accommodate overseas restructuring. AAP is an importer and wholesaler and does not deliver products to site as this is a function normally carried out by AAP's agents and distributors.

A.A.P Industries Pty Ltd has also submitted copies of other relevant Quality Assurance licenses appropriate to the manufacture and supply of the foundries producing their raw DI casting for the MAXIFLO™ hydrant valve body and yoke.

Refer Appendix 'B' for copies of quality management certification certificate demonstrating compliance with their quality management systems.

### **6.2 Compliance with Performance Requirements**

A.A.P Industries Pty Ltd is nominated as the licensee holder of the StandardsMark Licence Certificate No SMKP 21360, issued by SAI Global for swab and spring hydrant valves, described in Section 3 and 4 of this report.

A copy of the above Certificate and Schedule is shown in Appendix B.

#### **6.2.1 Type Testing**

A.A.P Industries Pty Ltd has provided Type Test results from ETRS Pty Ltd and QTL Pty Ltd for the standard and swab version valves respectively, as described in Tables 2 and 3. Copies of test reports are available upon request from the WSAA Product Appraisal Manager.

Batch release testing is done in-house on appropriate specialist testing equipment.

**TABLE 2 TYPE TEST RESULTS – MAXIFLO™ SPRING HYDRANT**

Clause	Type Test	Test Requirement		Results		
		Test Pressure, kPa	Minimum Duration / Flow Rate	Test Pressure, kPa	Duration / Flow Rate Time (min)	Comment
5.1.1	Body design pressure test	4000	1 min	4000	1 min	Pass- Nil plastic deformation and distortion were evident.
5.1.2	Flow Test	200	20 L/s	200	DN80; 22 L/s	Pass- Flow rate was 22L/s
5.1.3	Resilient seat hydrostatic test	1600	1 hr	1600	1 hr	Pass- Nil leakage was evident
5.1.4	Resilient seat infiltration test	-50	1 hr	50	1 hr	Pass- Nil leakage was evident

**TABLE 3 TYPE TEST RESULTS – MAXIFLO™ SWAB SPRING HYDRANT**

Clause	Type Test	Test Requirement		Results		
		Test Pressure, kPa	Minimum Duration / Flow Rate	Test Pressure, kPa	Duration / Flow Rate Time (min)	Comment
5.1.1	Body design pressure test	4000	1 min	4000	1 min	Pass- Nil plastic deformation and distortion were evident.
5.1.2	Flow Test	200	20 L/s	200	DN80; 22 L/s	Pass- Flow rate was 20.3L/s
5.1.3	Resilient seat hydrostatic test	1600	1 hr	1600	1 hr	Pass- Nil leakage was evident
5.1.4	Resilient seat infiltration test	-53	1 hr	50	1 hr	Pass- Nil leakage was evident

The SAI Global StandardsMark licence offers assurance that the product is manufactured with adequate process and quality controls to ensure compliance with the nominated product Standard.

### 6.2.2 Suitability for contact with drinking water

The MAXIFLO™ spring hydrant valves comply with the requirements of AS/NZS 4020:2005 – *Product for use in contact with drinking water*.

A.A.P Industries Pty Ltd has submitted Test Report 1204947 from the NATA Accredited AMS Laboratories, dated 25 July 2012, for a DN 80 MAXIFLO® 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 3952 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 MAXIFLO™ spring hydrant valves are manufactured using the higher grade 500-7 material designation in compliance with AS 1831:2007 *Ductile cast iron*.

The material requirements of the components used for the MAXIFLO™ swab and spring hydrant valves comply with AS 3952:2002. Refer to Table 4

**TABLE 4 MAXIFLO™ HYDRANT VALVES COMPONENTS MATERIAL LIST**

Component	Material	Standard	Grade	Minimum Grade/ Alternative Grade	Comment
Body and Yoke	Ductile iron	AS 1831	500-7	400-12 / 500-7	Complies
Dome	Copper Alloy	AS 1565	C48600	C48600/C35200	Complies
Helical Compression Spring	Stainless Steel	ASTM A276	304	304	Complies
Resilient Seat	Synthetic Rubber	AS 1646	EPDM	EPDM 67-73 IRHD/Nitrile	Complies
Fasteners	Stainless Steel	ASTM A276	316	316	Complies
Dome Support ( Swab)	Ductile iron	AS 1831	500-7	400-12 / 500-7	Complies

### 6.2.4 Flanges and flange gaskets

Flange dimensions conform to AS/NZS 4087-2011 Figure B5 (PN16) DN80 or DN100.

The flange gasket materials are not supplied by A.A.P Industries Pty Ltd.

The flange gasket materials shall comply with industry standard WSA-109:2011.

### 6.2.5 Coatings and lining for hydrants

Clause 4 of AS 3952:2002 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*.

In the past the epoxy coating has been applied using a manual electrostatic spray application and has been subject to inconsistencies in the coating process. In March 2011 Sufa Technology Industry Co upgraded to an automated air induced fluidised bed coating process, using Jotun EP-F 5001 Corro-coat thermosetting fusion bonded epoxy powder, manufactured and product certified to AS/NZS 4158.

The thermal-bonded polymeric coatings comply with AS/NZS 4020:2005. The material supply requirements comply with AS/NZS 4158.

Sufa Technology Industry Co applies thermal-bonded polymeric coatings as part of its manufacturing process. Sufa Technology Industry Co has submitted documentary evidence that BRT (Batch Release Testing) is being carried out to comply with 3952:2002 (inclusive of AS/NZS 4158 BRT's).

Sufa Technology Industry Co has submitted the following operating procedures for the application of thermal-bonded polymeric coatings.

The FBE Coating Processing Quality Inspection Provision OGD-S(G)Q13A.

Batch Release Test Requirements Provision OGD-S(G)Q15A.

Coating Rejection Process Provision OGD-S(G)Q16A.

The above operating procedures include the process stages, TT, BRT and inspection, repair limitations, handling, storage and loading requirements.

Sufa Technology Industry Co has submitted a letter from JOTUN Coatings Co. Ltd Shanghai China, certifying Sufa Technology Industry Co as having the capability to coat Corro-Coat EP-F5001 from Jotun Powder Coatings, including pre-treatment, necessary equipment, process controls and technical knowledge.

Refer to Appendix A for a copy of Sufa Technology Industry Co statistical analysis of coating thickness measurements recorded prior to and after the transition to an automated air induced fluidised bed coating process, using the Jotun EP-F 5001 Corro-coat thermosetting fusion bonded epoxy powder.

#### **6.2.5.1 Coatings Repair Kit for valves**

Jotun Coatings recommends “Jotacote 605” as a coating repair material. Jotacote 605 is a high build two pack epoxy coating, suitable for repair of minor damage to coated surfaces of RSV's. Refer to Appendix A.

## **7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION**

Spring hydrant valves are standard water industry products and general specifications are shown in the respective data sheets in Appendix A.

## **8 PRODUCT MARKING**

The MAXIFLO® swab and spring hydrant valves have the following markings conforming to AS 3952-2002:

Manufacturer's name or mark – MAXIFLO

Nominal flange size – DN XX

Year of manufacture – XXXX

Class of spring hydrant valve – PN 16

SWAB (where appropriate)

Australian Standard – AS 3952

CAB Licence No – LIC21360

StandardsMark – √√√√√√

Refer Figure 1 and 2



Insert Photo of Swab Hydrant



Insert Photo of Swab Hydrant

**FIGURE 1 & 2 MAXIFLO™ SPRING HYDRANT MARKING****9 PACKAGING AND TRANSPORTATION**

In general the hydrants are separated and packaged in plywood boxes. Refer to figures 3 and 4.

**FIGURE 3 & 4 PACKING FOR TRANSPORTATION**

## **10 PRODUCT WARRANTY**

The products are covered by the normal commercial and legal requirements of Competition and Consumer Act 2010, which covers manufacture to the relevant standard, and details of A.A.P Industries Pty Ltd. warranty, is included in their terms and conditions of sale.

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

MAXIFLO™ swab and spring hydrant valves are considered standard products and installation trials were not required as part of this report.

The approval process of MAXIFLO™ swab and spring hydrant valve range by the individual Water Authorities will enable any issues associated with quality and performance to be reported and addressed.

## **12 DISCUSSION**

AAP Industries has provided copies of all quality certificates, product schedules, copies of in-house test reports that include photos of the test rig set up and a complete set of product data sheets. Much of this material is 'commercial in confidence' and to which reference only may be made.

## **13 SUMMARY**

Examination of the submitted documentation provides an expectation that the range of spring hydrant valves, in both standard and swab versions, manufactured by Sufa as outlined in this report are 'fit for purpose' in water supply and recycled water supply pipeline networks.

## **14 LIFE EXPECTANCY**

Subject to the pipeline design and installation being in accordance with the manufacturer's requirements and the relevant WSAA Codes the following life expectancy ratings are nominated:

For water supply, with fusion bonded coatings to AS/NZS 4158, life expectancy in excess of 50 years before major replacement.

These ratings are only a general guide to life expectancy and may increase or decrease as a result of the system operating conditions, preventative maintenance programs, operating environment and other geographical and site specific factors.

## **15 FUTURE WORKS**

There are no outstanding future works items.

## **16 REPORT RECOMMENDATION**

It is recommended that WSAA members and associates accept/authorise MAXIFLO™ spring hydrant valves, listed in the Schedule to the StandardsMark Licence Certificate No SMKP 21360 as referenced in Appendix 'B', for use in water supply pressure pipelines designed and installed in accordance with applicable WSAA Codes, WSAA member integrated Codes and the manufacturer's requirements, where specified.

## **17 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](mailto:carl.radford@wsaa.asn.au).

### **17.1 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.

### **17.2 Limits on Reliance on Information and Recommendations**

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#### **17.2.2 Need for independent assessment**

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith. However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

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

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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 indemnity 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.

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**APPENDIX A – TECHNICAL MANUAL/BROCHURES**

MAXIFLO™ DN 80/100 Spring Hydrant Valve Assembly Drawing (1 Page)

MAXIFLO™ DN 80/100 Swab Spring Hydrant Valve Assembly Drawing (1 Page)

MAXIFLO™ DN 80/100 Swab Spring Hydrant Valve Marking Drawing (1 Page)

MAXIFLO™ DN 80 Spring Hydrant Valve Marking Drawing (1 Page)

MAXIFLO™ DN 100 Swab Spring Hydrant Valve Marking Drawing (1 Page)

Jotun – Jotacote 605 (Fast cure) Coating Repair User Kit. (1 Page)

AAP Industries Pty Ltd MAXIFLO™ Spring Hydrant Valve Technical Brochures (1 Page)

AAP Industries Pty Ltd MAXIFLO™ DN 80 Spring Hydrant Valve Components (WSAA IPAM Portal – WSAA Members Only)

AAP Industries Pty Ltd Mean (Thickness) graph (1 Page)

AAP Industries Pty Ltd Standard Deviation graph (1 Page)

Technical Comment from Jotun Coating Co.Ltd letter certifying Sufa Technology Industry Co., Ltd capability to coat Corro-Coat EP-EF5001 from Jotun Powder Coatings.

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RevNo

Revision note

Date

Signature

Checked

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Technical Requirements

1. Designed to AS 3952-2002

2. Flanges to AS4087 DN80, optional DN100

No.	Name	Material	Grade
①	Yoke	Ductile Iron	BS500/7
②	Cover	Rubber	PVC
③	Seat	Rubber	EPDM
④	Dome	Brass	C35200
⑤	Spring	Stainless Steel	BS304S15
⑥	Body	Ductile Iron	BS500/7
(7)	Fastener	Stainless Steel	BS316S16

Itemref

Quantity

Title/Name, designation, material, dimension etc

Article No./Reference

Designed by

DESIGNED\_BY

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APPROVED\_BY DATE

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Date

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中核苏阀科技实业股份有限公司

SUFA TECHNOLOGY INDUSTRY CO., LTD. CNC

SPRING HYDRANT

Assembling Dwg.

REV.A

8

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Date

Signature

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Revision note

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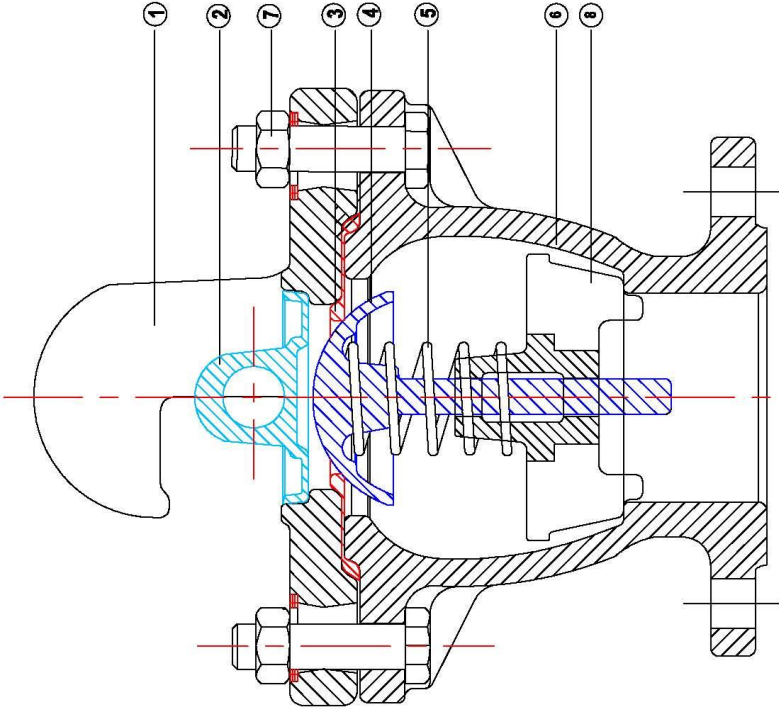
3

4

5

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8



Technical Requirements

1. Designed to AS 3952-2002

2. Flanges to AS4087 DN80, optional DN100

No.	Name	Material	Grade
①	Yoke	Ductile Iron	BS500/7
②	Cover	Rubber	PVC
③	Seat	Rubber	EPDM
④	Dome	Brass	C35200
⑤	Spring	Stainless Steel	BS304S15
⑥	Body	Ductile Iron	BS500/7
⑦	Fastener	Stainless Steel	BS316S16
⑧	Dome Support	Ductile Iron	BS500/7

Itemref

Quantity

Title/Name, designation, material, dimension etc

Article No./Reference

Designed by

Checked by

APPROVED BY

DATE

FILENAME

DATE

SCALE

中核苏核科技实业股份有限公司

SUFA TECHNOLOGY INDUSTRY CO., LTD. CHNG

SWAB SPRING HYDRANT

Assembling Dwg.

REV A

6

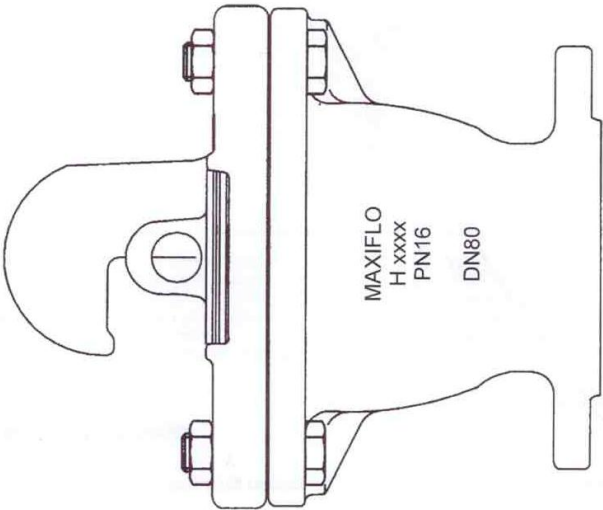
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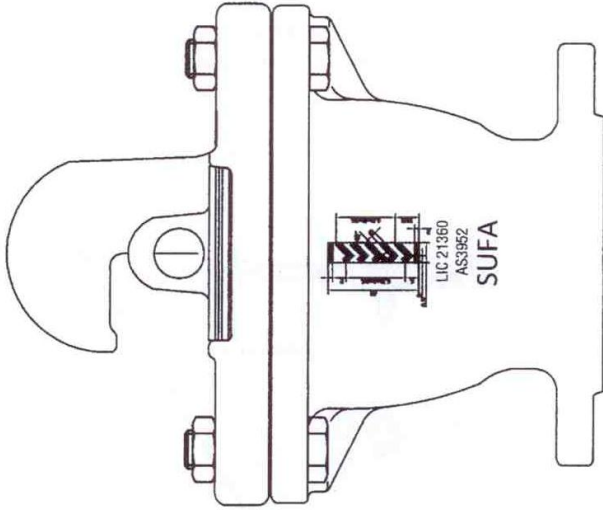


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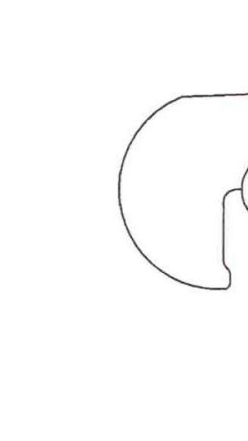
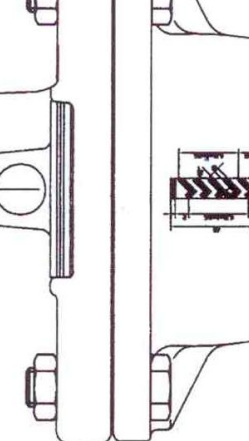
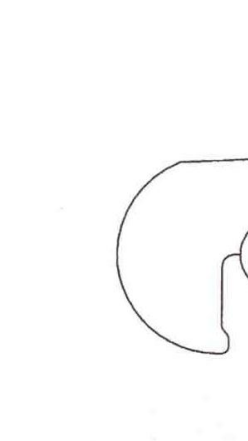
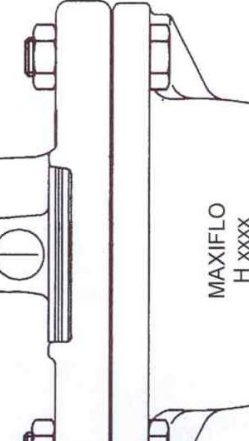
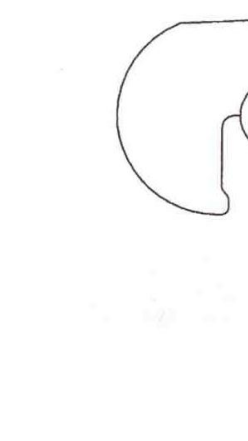
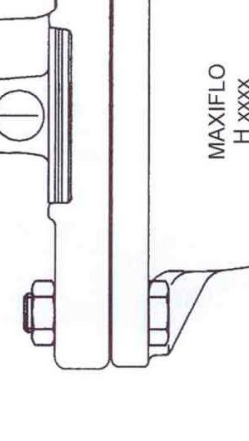

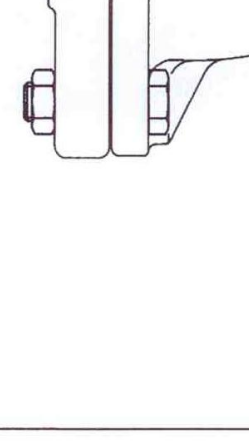
MAXIFLO  
H xxxx  
PN16  
DN80



LIC 21360  
ASS952  
SUFA

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
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中核苏阀科技实业股份有限公司 SUFA TECHNOLOGY INDUSTRY CO., LTD. CNNG		DN80 - SPRING HYDRANT Marking Dwg.	
		7	8

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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="width: 60%;">         中核苏阀科技实业股份有限公司          SUFA TECHNOLOGY INDUSTRY CO., LTD. CNNG       </td> <td colspan="2" style="width: 40%;">         DN100 - SPRING HYDRANT          Marking Dwg.       </td> </tr> <tr> <td colspan="2"></td> <td colspan="2" style="text-align: right;">         REV A       </td> </tr> </table>				中核苏阀科技实业股份有限公司 SUFA TECHNOLOGY INDUSTRY CO., LTD. CNNG		DN100 - SPRING HYDRANT Marking Dwg.				REV A													
中核苏阀科技实业股份有限公司 SUFA TECHNOLOGY INDUSTRY CO., LTD. CNNG		DN100 - SPRING HYDRANT Marking Dwg.																					
		REV A																					



# Maxiflo

## Resilient Seated Gate Valves

### Coating Repair User Kit



**Product:** Jotun – Jotacote 605 (Fast cure)

**Color:** Tinted (Valve blue/Tyco blue 1999)

**Product description:** Jotacote 605 is a high build two pack epoxy coating, suitable for repair of minor damage to the coated surface of resilient seated gate valves.

**Safety:** Always refer to MSDS before using any chemical products.

#### Instructions for use:

**1. Surface preparation.**

Using 80grit sand paper, remove any surface contaminants around the area of repair.



**2. Mixing of the Jotacote 605 epoxy.**

Dispense equal parts of Jotacote 605 A and Jotacote 605 B, into small container for mixing, completely mix both A and B compounds together to even consistency. Pot life can vary up or down depending on mix ratio and temperature, as a guide will be maximum 1.5 hours at 23 deg.



**3. Application.**

Apply the epoxy to the repair area and spread out evenly using brush or spatula. The repair area should be filled to about 10% thicker than the original coating. Try to avoid making any large lumps or blobs



**4. Drying and cure.**

Leave the repaired item to dry. 3 hours the surface will be dry and after 8 hours will be thoroughly dry, for handling assembly etc.

Full cure of the epoxy is 4 days.

All times are general at 23deg.C and may vary.

# Maxiflo

## Spring Hydrant Valves

### DN80 ~ DN100



Designed and certified to AS 3952.2002

Flange drilling to AS 4087 Figure B5

Coating to AS 4158



Certificate No.  
5130-1993-AQ-RGC-RvA



License No.  
SMKP 21360



License No.  
SMKP 20551

### Spring Hydrant valve



### General Application:

Ductile iron spring hydrant valves for waterworks purposes is intended for use with potable water and is operated by means of the attachment of a standpipe.

### Features:

- Ductile iron body and yoke for high strength and impact resistance.
- All bolts & fasteners stainless steel grade 316 for corrosion protection.
- Full flow for minimal pressure drop.

### Technical Data:

- Size Range: DN80~DN100.
- Allowable Operating Pressure: 1600KPa.
- Maximum Temperature: 40°C.
- End Connections:
  - Flanged to AS 4087 Fig. B5 and Stand Pipe
- Fluidized bed Coating to AS 4158 - Jotun blue corro coat EPF-5001. LIC: SMKP 20551
- Approvals:
  - WSAA appraisal No.: 12/03
  - AS 3952.2002 Product Mark
  - Registration No. SMKP 21360

### Hydraulic Tests:

- Body hydrostatic test to AS 3952.2002: 2400KPa
- Resilient seat hydrostatic test to AS 3952.2002: 1600KPa

### Warranty:

The products are covered by normal commercial and legal requirements of the trade practices Act 1974, which covers manufacture to the relevant standard.



Maxiflo  
Spring Hydrant Valves  
DN80 ~ DN100



Designed and certified to AS 3952.2002  
Flange drilling to AS 4087 Figure B5  
Coating to AS 4158



Certificate No.  
5130-1993-AQ-RGC-RvA



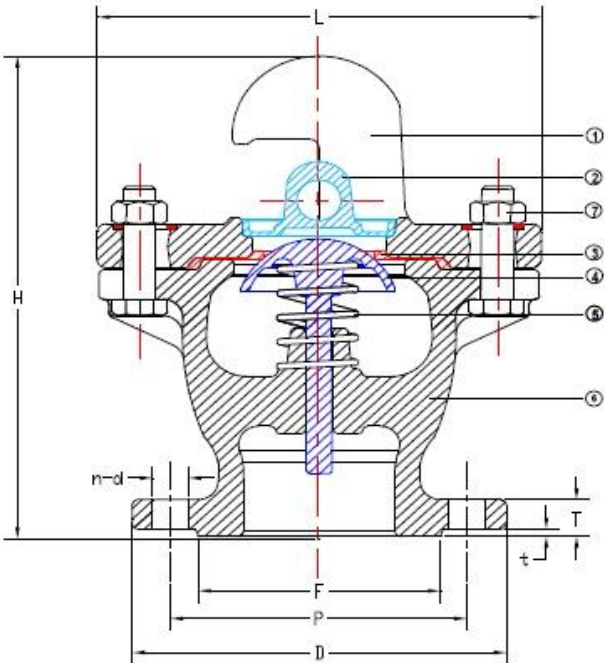
License No. SMK  
21360



License No. SMK  
20551

Component List:

No.	Description	Material	Standard
1	Yoke	Ductile Iron	B5500/7
2	Cover	Rubber	PVC
3	Seat	EPDM	AS 1646
4	Dome	Brass	C35200
5	Spring	Stainless Steel	B5304S15
6	Body	Ductile Iron	B5500/7
7	Fastener	Stainless Steel	B5316S16

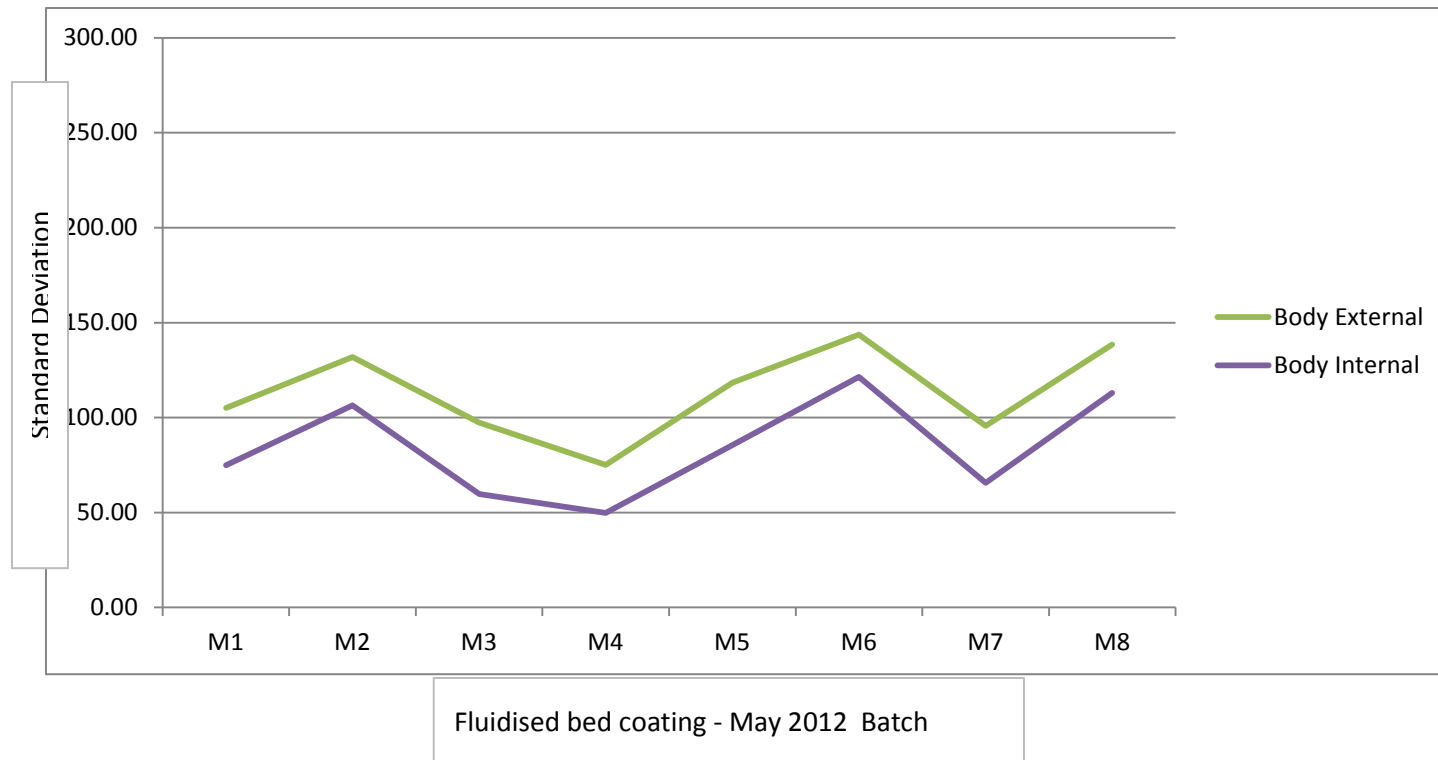


Dimensions (mm):

Ref. Code	DN	L	H	D	F	P	T	t	n-d
VSH80	80	220	265	185	122	146	18	3	4-18
VSH100	100	220	267	215	154	178	20	3	4-18

**Mean (Thickness) graph- Valve Body****Standard:** AS 4158**Inspection Equipment used:** MikroTest 7 F (Coating thickness gauge)

Fluidised bed coating - May 2012 Batch

**Standard Deviation graph - Valve Body****Standard:** AS 4158**Inspection Equipment used:** MikroTest 7 F (Coating thickness gauge)

**Technical Comment**

<b>Customer</b>	:	<b>SUFA TECHNOLOGY INDUSTRY CO.,LTD. CNNC</b>
<b>Subject</b>	:	<b>Qualification - Corro-Coat EP-F5001</b>

We certify SUFA TECHNOLOGY INDUSTRY CO.,LTD. CNNC as an applicator to have capability to coat Corro-Coat EP-F5001 from Jotun Powder Coatings, including pre-treatment, necessary equipment, process controls, and technical knowledge.

**Corro-Coat EP-F5001 Recommended****APPLICATION METHOD:**

Substrate: Cast iron  
Pretreatment: Blastcleaning to Swedish SA 2½ finish surface with profile depth: 40-80 µm.  
Application: Using Dipping application method  
Application Temperature: From 190°C to 210°C  
(Note: All application temperatures are the substrate surface temperature.)  
Post cure temperature: Approximately 180°C for 5 minutes to 240°C for 2 minutes.  
Film thickness: Recommended typical film thickness is 300 -500micron

Dipping time and excess Powder blow off times are subject to the size, complexity and temperature of the item to be coated.

Best Regards,

Hank Yih  
Reginal Functional TSS Manager – SEA & China  
Jotun Coatings Co., Ltd  
Address: Floor 20, JiuShi Mansion, No. 28, ZhongShan Rd(south), Shanghai 200010  
P.R.China  
Tel: +862163330800-238  
Mobile: +8618616212787

## APPENDIX B - QUALITY CERTIFICATIONS

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

**TABLE B1 SUFA TECHNOLOGY INDUSTRY CO LTD CNNC – MANAGEMENT SYSTEMS**

Head Office Address No 501 Zhujiang Road, SND, Suzhou 215129, P.R China (Attach all QA system certificates)	
Quality Systems Standard	ISO 9001:2008
Certification licence no.	5130-1993-AQ-RGC-RvA
Certifying agency	DET NORKE VERITAS
Initial Certification Date	26 May 1993
Expiry date of certification	26 May 2014

**TABLE B2 A.A.P INDUSTRIES PTY LTD – PRODUCT CERTIFICATION**

Manufacturing Plant: Sufa Technologies Co 55 Xuyang Rd Xugan Industry Zone SUZHOU China (Attach all QA system certificates in full including schedules)	
Product Standard/Spec.	AS/NZS 3952:2002
Certificate No.	SMKP21360
Certifying agency	SAI Global Certification Services Pty Ltd
Issued	22 September 2011
Originally Certified	21 April 2011
Expires	20 April 2016
Current Certification	22 September 2012

**TABLE B3 WUJIANG MEIYAN UNION CASTING CO – MANAGEMENT SYSTEMS**

Applicants Business (Attach all QA system certificates)	
Quality Systems Standard	ISO9001:2008
Client ID / Certificate.ID	06026-0001 / 0006373-3
Certifying agency	Orion Registrar Inc USA
Registration Period	16 February 2012 to 15 February 2015

- 1 The registration covers the Quality Management System applicable to Casting and Services of Mexican Ball and Grey Iron.

**TABLE B4 JOTUN POWDER COATINGS (THAILAND) LTD – PRODUCT CERTIFICATION**

Product Certification Licence	AS/NZS 4158:2003
Licence No	SMKP20551
Certifying agency	SAI Global Certification Services Pty Ltd
Issued	4 January 2012
Expired	12 September 2016
Originally Certified:	13 September 2006
Current Certification:	4 January 2012



## STANDARDSMARK LICENCE

**SAI Global hereby grants:**

### **A.A.P Industries Pty Ltd**

ABN 36000402826

31 Monro Avenue, Sutherland, NSW 2232, Australia

Sufa Technology Industries Co., 55 Xuyang Rd, Xuguan Industry Zone, Suzhou, China

#### **StandardsMark Licence**

Manufactured to:

**AS 3952-2002 - Water supply - DN 80 spring hydrant valve for general purposes**

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee\* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

**Certificate No:SMKP21360**

**Issued: 24 January 2013**

**Expires: 20 April 2016**

**Originally Certified: 21 April 2011**

**Current Certification: 24 January 2013**

Paul Butcher  
Global Head – Assurance Services

Samer Chaouk  
Head of Policy, Risk and Certification



**\* For details of manufacture, refer to the licensee**

The STANDARDSMARK is a registered certification trademark of SAI Global Limited (A.C.N. 050 644 642) and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 716 669) ("SAI Global") 286 Sussex Street, Sydney NSW 2000, GPO Box 5420 Sydney NSW 2001. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to [www.saiglobal.com](http://www.saiglobal.com), for the list of product models.



## SCHEDULE TO STANDARDSMARK LICENCE

SAI Global hereby grants:

### A.A.P Industries Pty Ltd

31 Monro Avenue, Sutherland, NSW 2232, Australia

Sufa Technology Industries Co., 55 Xuyang Rd, Xuguan Industry Zone, Suzhou, China

#### StandardsMark Licence

Manufactured to:

**AS 3952-2002 - Water supply - DN 80 spring hydrant valve for general purposes**

Model identification of the goods on which the STANDARDSMARK may be used:

Model Identification	Model Name	Brand Name	Product Description	Date Endorsed
VSH100	Spring Hydrant Valve	Maxiflo	Spring Hydrant Valve	22 Sep 2011
VSH100S	Swab Spring Hydrant	Maxiflo	Swab Spring Hydrant Valve	24 Jan 2013
VSH80	Spring Hydrant Valve	Maxiflo	Spring Hydrant Valve	12 May 2011
VSH80S	Swab Spring Hydrant	Maxiflo	Swab Spring Hydrant Valve	24 Jan 2013

End of Record

Certificate No: SMKP21360

Issued Date: 24 January 2013

This schedule supersedes all previously issued schedules

**\* For details of manufacture, refer to the licensee**

The STANDARDSMARK is a registered certification trademark of SAI Global Limited (A.C.N. 050 644 642) and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 716 669) ("SAI Global") 286 Sussex Street, Sydney NSW 2000, GPO Box 5420 Sydney NSW 2001. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to [www.saiglobal.com](http://www.saiglobal.com), for the list of product models.







**Orion Registrar, Inc., USA  
Certificate of Registration**

*This is to certify the Quality Management System of:*

**Wujiang Meiyuan Union Casting Co., Ltd.  
(Near 318 National Road only  
103.4km) Meiyuan Town,  
Wujiang City, Jiangsu Province  
China**

*Has been assessed by Orion Registrar and found to be in compliance with  
the following Quality Standard:*

**ISO 9001:2008**

*The Quality Management System is Applicable to:*

**Casting and Services of Mexican Iron Ball  
and Gray Iron.**

*The Registration period is from February 16, 2012 to February 15, 2015.*

*This registration is subject to the company maintaining its system to the  
required standard, and applicable exceptions, which will be monitored by Orion.*

*Client ID 06026-00001. Certificate ID N0006373-3.*

*EAC Code(s): 17*



*Carl M. [Signature]*  
President

02/16/2012  
Date



Orion Registrar, Inc. ★ Arvada, Colorado ★ PO Box 745970 ★ 303-456-6010 ★ FAX 303-456-6681

To authenticate this certificate please visit [www.orionvalue.com](http://www.orionvalue.com)



# DET NORSKE VERITAS MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 5130-1993-AQ-RGC-RvA

*This is to certify that*

**SUFA Technology Industry Co., Ltd. CNNC**

No. 501 Zhujiang Road, SND, Suzhou 215129, P.R. China

*has been found to conform to the Management System Standard:*

**ISO 9001:2008**

*This Certificate is valid for the following product or service ranges:*

**Design and Manufacture of Non-Nuclear Industrial Valves**

*Initial Certification date:*

**May 26<sup>th</sup>, 1993**

*Place and date:*

**Shanghai, June 9<sup>th</sup>, 2011**

*This Certificate is valid until:*


**May 26<sup>th</sup>, 2014**



*for the Accredited Unit:*  
**DNV CERTIFICATION B.V.,  
THE NETHERLANDS**

*The audit has been performed under the supervision of*

**Yu Da  
Lead Auditor**

  
**Chen Yi  
Management Representative**

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.

DET NORSKE VERITAS CERTIFICATION B.V., Zwilberweg 1, 2994 LB Barendrecht, The Netherlands, TEL: +31 10 2922 688 - [www.dnv.com](http://www.dnv.com) / [www.dnv.nl](http://www.dnv.nl)

## **APPENDIX C – WSA 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<sup>1</sup> 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<sup>2</sup>.
- (c) 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<sup>3</sup> 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 2700:1996 (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**

### **NSW - AAP Industries Head office**

Sydney , Head office, Factory and Warehouse

31 Monro Ave, Sutherland, NSW 2232

### **Brisbane, Warehouse**

125 Crockford Street,

Northgate, QLD 4013

Melbourne, Warehouse

8 Lakewood Boulevard,

Braeside, VIC 3195

### **Adelaide, Warehouse**

1/49 Naweena Road,

Regency Park, SA 5010

### **Perth, Warehouse**

16 Aitken Way,

Kewdale, WA 6105

### **Townsville, Warehouse**

16 Leyland Street,

Garbutt, QLD 4814

Also see AAP Industries web site: [www.aapindustries.com.au](http://www.aapindustries.com.au)

### **AAP Industries agents and distributors:**

Reece Pty Ltd

Promains

Tradelink

Blackwoods

Plumbers Supply Co-op

Vinindex

Icon Septeck

## APPENDIX E – TEST REPORTS

The test reports are Commercial in Confidence, however will be made available to the IPAM Network with the approval of the applicant.

Test Report No DZ2815 Product Tested Spring Hydrant Valve Dome (Report date 15.09.09)  
ETRS Pty Ltd (NATA Accredited Laboratory No 492)

Information included

- Photo of Test Sample
- AMS Laboratories Test Report<sup>1</sup>
- Chemical analysis of dome
- Technical Information

AMS Laboratories Report ID 1204947 (Reference 1203062)

Test Reports No 44091692-01 & 44071658-02 Product Tested Spring Hydrant Valve (Report date 10.09.2009)  
ETRS Pty Ltd (NATA Accredited Laboratory No 218), and

Test Report No 132583 3302 DN80 Swob Spring Hydrant (Report date 19-4-2013)  
QTL Pty Ltd NATA Accredited Laboratory No 14783

Information included

Results of Type Test Results

- 5.1.1 Body design pressure test
- 5.1.2 Flow Test
- 5.1.3 Resilient seat hydrostatic test
- 5.1.4 Resilient seat infiltration test

and

- Photo of Test Sample
- Technical Information

**Melbourne Office**

Suite 8.02, Level 8  
401 Docklands Drive  
DOCKLANDS VIC 3008  
Phone: (03) 8605 7601  
Fax: (03) 8605 7612

**Sydney Office**

Suite 1, Level 30, 9 Castlereagh Street  
Sydney NSW 2000  
GPO Box 915  
Sydney NSW 2001  
Phone: (02) 9221 5966  
Fax: (02) 9221 5977

[www.wsaa.asn.au](http://www.wsaa.asn.au)



**WATER SERVICES**  
ASSOCIATION OF AUSTRALIA