



E. Hawle Armaturenwerke GmbH

PRODUCT APPRAISAL REPORT 1904 Issue 3

Hawle Resilient Seated Gate Valves DN 100 to DN 300

**AS/NZS 2638.2:2011 - Gate valves for waterworks purposes –
Resilient seated**

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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.

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1 EXECUTIVE SUMMARY

E. Hawle Armaturenwerke GmbH, based in Austria, is a leading manufacturer of valves and pipeline fittings for the water and gas industries, with manufacturing operations and sales offices throughout Europe. Hawle was the manufacturer of the first resilient seated gate valve in the world.

Hygrade Water Australia, a member of the Hynds Group, is a supplier of pipeline systems and related products to civil contractors and is the Australian agent for Hawle products.

This appraisal is for a range of Hawle PN16 resilient seated gate valves manufactured in accordance with AS/NZS 2638.2:2011 *Gate valves for waterworks purposes, Part 2: Resilient seated* with the following sizes and end configurations:

- Flange – Flange, E3 design: DN 80, DN 100, DN 150, DN 200, DN 250 and DN 300
- System 2000 – System 2000, E3 design: DN 80/90, DN 100/125, DN 150/180, DN 200/200, DN 200/225, DN 200/250, DN 300/315 and DN 300/355.
- System 2000 – Flange, E3 design: DN 100/125, DN 150/180
- Soc – Soc, E2 design: DN 100, DN 150 and DN 200

The valves are available as either clockwise or anti-clockwise closing and may be operated by key or handwheel.

Issue 2 included an enhanced design for the flanged gate valve range, designated as E3, and extended the size range to DN 300. The socketed valves remain as E2.

This Issue 3 includes DN 80 E3 gate valves and E3 gate valves with System 2000 restrained joint ends for PE pipes.

Hawle holds an ISO 9001:2015 quality management system licence.

The Hawle RSV's have ISO Type 5 StandardsMark Product Certification to AS 2638.2:2011 *Gate valves for waterworks purposes - Part 2: Resilient seated*.

This Appraisal has determined that Hawle resilient seated gate valves, as detailed in Section 4, comply with the requirements of WSA PS 260 - *Gate Valves, Resilient Seated for Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage* and WSA PS 281 - *Gate Valves, Resilient Seated with Restrained Flexible Joints for Polyethylene Pipe in Pressure Applications - Drinking Water, Non-Drinking Water Supply and Sewerage* and are 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 Hawle resilient seated gate valves, as detailed in this report, for use in water supply and sewerage pressure pipelines provided they are installed in accordance with applicable WSAA Codes and the manufacturers requirements, where specified.

2 THE APPLICANT

The applicant is E. Hawle Armaturenwerke GmbH.

2.1 The Supplier

Hygrade Water Australia was established in 2007 to supply a range of specialist products for the Australian plumbing and civil market segments. Hygrade Water is a registered Australian business, wholly owned by the Hynds Group.

Hynds Group, a privately owned and operated New Zealand company established in 1973, has become a leading supplier of pipeline systems and related products to civil contractors within Australasia.

Hygrade Water Australia is the Australian agent for Hawle products in Australasia.

2.2 The Manufacturer

E. Hawle Armaturenwerke GmbH is based in Voecklabruck, Austria and was founded by Engelbert Hawle in 1948. Hawle has a history of innovation and was the manufacturer of the first resilient seated gate valve in the world. Today Hawle is a leading manufacturer of valves and pipeline fittings for the water and gas industries, with manufacturing operations and sales offices throughout Europe. Hawle products from Austria are exported to more than 60 countries world-wide. In addition, Hawle products are currently manufactured on all continents by nine licensees. More information is available about Hawle on their web site at <https://www.hawle.com/en/>

3 THE PRODUCT

This appraisal is for a range of Hawle PN16 resilient seated gate manufactured in accordance with AS/NZS 2638.2:2011 *Gate valves for waterworks purposes, Part 2: Resilient seated* with the following sizes and end configurations:

- Flange – Flange, E3 design: DN 80, DN 100, DN 150, DN 200, DN 250 and DN 300
- System 2000 – System 2000, E3 design: DN 80/90, DN 100/125, DN 150/180, DN 200/200, DN 200/225, DN 200/250, DN 300/315 and DN 300/355.
- System 2000 – Flange, E3 design: DN 100/125, DN 150/180
- Soc – Soc, E2 design: DN 100, DN 150 and DN 200

The valves are available as either clockwise or anti-clockwise closing and may be operated by key or handwheel.

The T-type valve sockets incorporate an extended depth of engagement suitable for use with Series 2 PVC (U, O and M) pipes, DI pipe to AS/NZS 2280 and other ductile iron outside diameter (DIOD) plastic and metallic pipe materials. The sockets utilise EPDM elastomeric seals.

DN 100, DN 150 and DN 200 flanges have physical dimensions complying with EN 1092-2 and are drilled to suit AS/NZS 4087 Figure B5 PN16. DN 250 and DN 300 flanges fully comply with AS/NZS 4087 Figure B5 PN16.

Hawle E2 resilient seated gate valves were originally appraised in July 2004 and renewed in 2013 and 2019. Hawle has recently undertaken design enhancements for their flanged valves to reduce operating torques and improve other features of the valve design. The redesigned valve, nominated as E3, includes the following amended features:

- The spindle seal retainer mechanism has been amended to facilitate a more uniform polymeric coating.
- The gate is connected to the gate nut with a flexible link and is completely rubber encapsulated to dampen vibration during operation.
- All sizes allow the O-ring seals to be replaced under operating pressure in compliance with AS/NZS 2638.2.
- The collar and spindle bearing designs have been amended to improve operating torques.
- High tensile carbon steel connection fasteners have been replaced with Grade 304 Stainless Steel. The fasteners are encapsulated with a wax sealant to isolate against the environment.
- The gate nut has an extended thread length to provide additional strength where higher closing torques are applied.
- PE edge protection has been redesigned and extended to avoid damage during transport, storage and installation.

E3 bonnet assemblies remain compatible with E2 bodies and accessories. The materials utilised in the redesign remain the same.

4 SCOPE OF THE APPRAISAL

The scope of the appraisal covers PN 16 resilient seated gate valves in sizes DN 100 to DN 300 with end configurations as detailed below:

TABLE 1 HAWLE RESILIENT SEATED GATE VALVES

DN	Flanged (E3)	System 2000 (E3)	System 2000 -FI	Socketted (E2)
80	✓	✓ (DN 90 PE)		
100	✓	✓ (DN 125 PE)	✓ (DN 125 PE)	✓
150	✓	✓ (DN 180 PE)	✓ (DN 180 PE)	✓
200	✓	✓ (DN 200, DN 225 or DN 250 PE)	-	✓
250	✓	-	-	-
300	✓	✓ (DN 315 or DN 355 PE)	-	-

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts resilient seated gate valves manufactured in compliance with AS/NZS 2638.2: *Gate valves for waterworks purposes Part 2: Resilient seated* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by an 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

Hawle resilient seated gate valves have been appraised for compliance with AS 2638.2:2011 *Gate valves for waterworks purposes Part 2: Resilient seated*.

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 260 - *Gate Valves, Resilient Seated for Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage*.

WSA PS 281 - *Gate Valves, Resilient Seated with Restrained Flexible Joints for Polyethylene Pipe in Pressure Applications - Drinking Water, Non-Drinking Water Supply and Sewerage*

Copies of the Product Specifications are available at the following link:

<https://www.wsaa.asn.au/shop/product/60961>

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

Hawle has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. Q1531395 issued to E Hawle Armaturenwerke GmbH by TUV SUD.
- AS/NZS 2638.2:2011 ISO Type 5 StandardsMark Product Certification Licence No. SMKP20123 issued to E Hawle Armaturenwerke GmbH by SAI-Global.

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

Copies of Quality Assurance certificates have also been supplied for the various valve component suppliers.

6.2 Compliance with Performance Requirements

6.2.1 Material properties of ductile iron

AS/NZS 2638.2 Table 2.1 requires ductile iron body and bonnet components to conform to minimum grade 400-15. Hawle has provided material test certificates to demonstrate compliance to this specification.

6.2.2 Component material list

The Hawle RSV material specifications are detailed below and are deemed to meet the minimum requirements specified in Table 2.1 of AS2638.2. Material test certificates have been submitted for each component to demonstrate conformance.

TABLE 3 HAWLE COMPONENT MATERIAL LIST

Component	Material	Standard	Grade
Body	Ductile iron	AS 1831	JS/400-15
Bonnet	Ductile iron	AS 1831	JS/400-15
Spindle seal retainer	Copper alloy	AS 1565	CW602N
Gate core	Ductile iron	AS 1831	JS/400-15
Gate encapsulation	Synthetic rubber	AS 1646	EPDM
Gate nut	Copper alloy	EN 12165	CW602N
Spindle	Stainless steel	ASTM A276	S32101 ¹
Spindle cap	Ductile iron	AS 1831	JS/400-15
Fasteners	Carbon steel (E2)	Allen screws ²	4.6
	Stainless steel (E3)		Grade 304
Gaskets	Synthetic rubber	AS 1646	EPDM
O-rings	Synthetic rubber	AS 1646	NBR

NOTE 1. S32101 duplex stainless steel is not listed in AS/NZS 2638.2. Grade 431 and Grade 316 are listed in as allowable stainless-steel grades for the spindle. The approximate minimum tensile strength of S32101 is 650 MPa compared to Grade 431 of 850 MPa and Grade 316 of 515 MPa. The approximate PREN of S32101 is 25 compared to Grade 431 of 16 and Grade 316 of 25. S32101 is therefore deemed to be an acceptable alternative to Grade 431 and Grade 316.

NOTE 2. Fasteners are completely isolated from the environment by passing through the bonnet gasket and are encapsulated with a sealant applied to the fastener cavity in the bonnet.

6.2.3 Elastomeric joints

Hawle sockets are T-type. The minimum deflection angles comply with AS/NZS 2280 Table 3.2.

Socket depth of engagement exceeds the minimum requirements specified in AS/NZS 2280.

TABLE 2 SOCKET ENGAGEMENT DEPTHS

DN	Hawle socket depth mm	AS/NZS 2280 minimum socket depth mm
100	77	42
150	99	50
200	102	58

6.2.4 Elastomeric seals

The EPDM elastomeric seals are dual hardness, supplied by Gulf Rubber and suitable for Series 2 PVC and CIOD pipes. For Series 1 PVC pipes a transition ring seal, also supplied by Gulf Rubber, is utilised.

Gulf products are covered by ISO Type 5 product certification and a copy of the certification is held on file by WSAA.

6.2.5 System 2000 restrained flexible joints for PE pipes

The System 200 restrained flexible joints for PE pipes are addressed in WSAA Product Appraisal No. 2304.

6.2.6 Flanges

DN 100, DN 150 and DN 200 flanges comply with the physical dimensions of EN1092-2 and are drilled to AS/NZS 4087 Figure B5 PN16.

EN1092-2 flanges have minor differences in outside diameter, raised face diameter and flange thicknesses compared to AS/NZS flanges, however these differences do not prevent compatibility.

DN 250 and DN 300 flanges fully comply with AS/NZS 4087 Fig B5 PN16.

6.2.7 Polymeric thermal bonded coatings

Hawle RSV's are coated with Akzo Nobel, Resicoat R4, a thermosetting epoxy powder coating, applied by the fluidised bed process.

In accordance with AS/NZS 4158, the minimum coating thicknesses for thermoset coatings is 350µm for internal surfaces and 300µm for external surfaces. The European requirement is for minimum 250µm for all surfaces.

Hawle has confirmed that Australian Standard valves will be coated to comply with AS/NZS 4158 thicknesses.

The coating process is audited by SAI-Global in conjunction with the regular product certification surveillance audits.

6.2.8 Type tests

Queensland Testing Laboratory (NATA accredited laboratory No. 14783) has satisfactorily completed type test reports to AS/NZS 2638.2 for the E2 range of valves included in this appraisal.

Additional type test reports for the E3 range of resilient seated gate valves have been completed by Queensland Testing Laboratory and submitted for this Issue 2 to demonstrate compliance to the performance requirements of AS/NZS 2638.2.

6.2.9 Contact with drinking water

AS/NZS 2638.2 requires compliance with AS/NZS 4020 *Testing of products for use in contact with drinking water*. A test report No.1819564 from Eurofins (NATA Accreditation No. 15773) dated September 2018 has been submitted to demonstrate compliance to AS/NZS 4020:2005.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Gate valves are commonly installed throughout the water supply networks and have become the standard isolation valve of the urban water industry worldwide.

Installation, operation and maintenance are well understood by experienced installers and operators.

Operation & Maintenance Manuals are available at the following link:

<https://www.hawle.com/en/products/gate-valves>

8 PRODUCT MARKING

Hawle RSV’s have the following markings in accordance with AS/NZS 2638.2:

- (a) Manufacturer’s name or mark: Hawle
- (b) Nominal size: DN100
- (c) Year of manufacture: e.g. 2019.
- (d) Pressure classification: PN16.
- (e) The number of the standard: AS/NZS 2638.2.
- (f) StandardsMark logo: ✓✓✓✓✓

9 PACKAGING AND TRANSPORTATION

Cardboard is placed on the timber pallets and between layers of valves for protection during transport. The pallet and valves are then enclosed in 150µm polyethylene shrink wrap.

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 Hawle’s warranty is included in their terms and conditions of sale.

11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

Gate valves are well-established products and installation, operation and maintenance are well understood by experienced installers and operators. Hawle E2 valves have been in operation in Australia for many years and are currently approved by a large number of water agencies. It is deemed unnecessary to conduct field trials for this Appraisal.

12 DISCUSSION

Table 4 highlights the recommendations of use for the Hawle gate valve range.

TABLE 4 GATE VALVES LIMITATION OF USE

Product Detail	Recommendation
Suitable Applications	Pipelines used in water reticulation, sewage, waste water and irrigation
Limitations	Maximum service temperature 40°C.
	Gate valves should not be used for throttling or adjusting flow.

13 FUTURE WORKS

No future works have been identified for this Appraisal.

14 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.

14.1 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).

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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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14.4 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



Hawle E3 Gate Valve

Hawle E3 Gate Valves DN 80–200 and DN 250–300



TECHNICAL GUIDE: **AVHO.0**

Applications

Municipal water supply systems
Isolation
Pump stations
Main line isolation

Product Attributes

Wear resistant wedge guides
Does not require a bypass at 100% differential
Lowest closing torques at full differential
100% suitable for actuation
No gearbox required

Approvals/Standards

AS/NZS4020
AS/NZS2638.2
Flanges to AS/NZS4087

Quality

ISO 9001 Quality Management

E3 Valve Flanged Ends DN50 – DN300

The Hawle E3 resilient seated gate valves are a quality designed valve with customer features. The wear resistant guides ensure easy operation and long life while the 'O' ring system allows field maintenance under pressure.

Standard Version

Without handwheel and extension spindle

Design Versions

- For electric actuator
- With position indicator

Special Versions

On request for DN 350 - DN 600

- Angular gear drive type
- With bypass valve
- With air release valve
 - For small air volume in the bonnet*

Note: *Not for the main pipeline

Design Specifications

- Standard version without hand wheel and extension spindle
- Design version for electric actuator
- Design version with position indicator
- Flanges sized in accordance with AS/NZS4087
 - PN16 AS/NZS4087
 - PN21 AS/NZS4087
- Additional flanges available on request

Optional Accessories

- Hand wheel
- Extension spindles: rigid/telescopic

Model Attributes

Easiest retrofitting of position indicator and automatic actuator on the standard bonnet possible

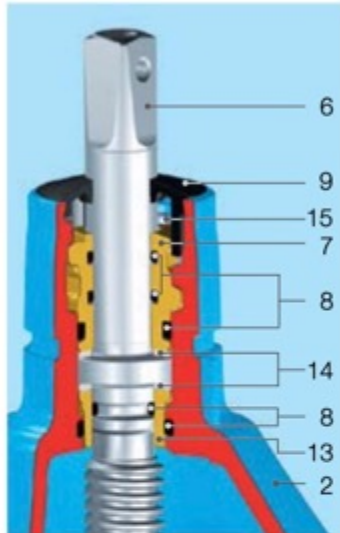
- One extension spindle for several dimensions
- Replaceable O-rings under pressure (according to AS/NZS 2638.2)

HAWLE E3 GATE VALVE | VALVES & HYDRANTS | PG 2

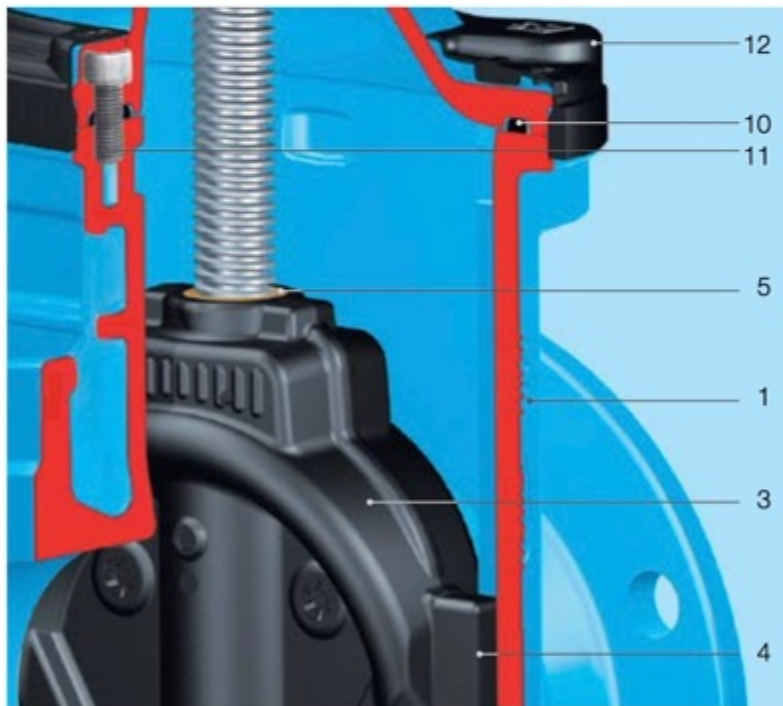
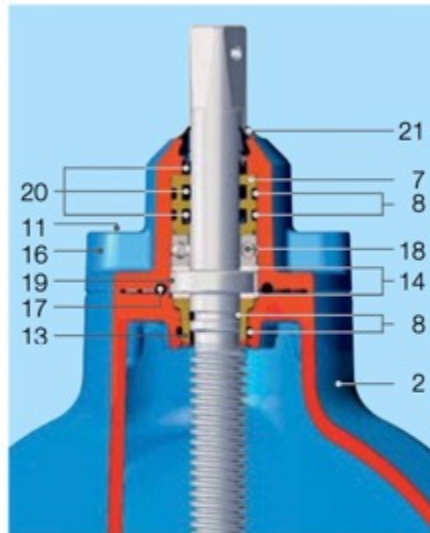
TABLE 1

No.	Component	Materials/Description
1/2	Body and bonnet	Body (1), bonnet (2) centering flange (16) made of ductile iron, epoxy powder coated inside and outside
3	Wedge	made of ductile iron (DN 50 made of dezincification - resistant brass) with vulcanized elastomer all-over
4	Wedge guide	made of wear-resistant plastic
5	Wedge nut	made of dezincification-resistant brass
6	Duplex stainless steel spindle	Duplex stainless steel spindle with rolled thread and fl at-rolled anti-friction surface
7	O-ring carrier	made of brass, DN 50 - DN 200 with double bayonet
8	O-rings	made of elastome
9	Wiper ring	made of PE
10	Bonnet gasket	made of elastomer
11	Allen screws	made of stainless steel, encased into the body with interlacing gasket and sealing compounds, ensuring full corrosion protection
12	Extended edge protection	made of PE
13	Spindle bearing	made of dezincification resistant brass
14	Sliding disks	made of POM
15	Safety screw	made of stainless steel
17	Centering flange gasket	made of elastomer
18	Axial ball bearing	Axial ball bearing permanently lubricated
19	Centering ring	Centering ring made of POM
20	Lip seals	Lip seals made of elastomer
21	Wiper ring	Wiper ring made of elastomer

DN 80-200 Spindle bearing with sliding disks



DN 250-300 Spindle bearing with ball bearing and additional sliding disks



E3 Gate Valves Flanged Ends DN80 – DN200

Design Specifications

- Resilient seated gate valve with smooth straight-through bore
- Flanges sized in accordance with AS/NZS4087
 - PN16 AS/NZS4087
 - PN21 AS/NZS4087
- Suitable for cleaning with a cleaning pig
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuators on the standard bonnet
- Duplex stainless steel spindle

Standard Version

Without handwheel and extension spindle.

Design Versions

- For electric actuator
- With position indicator
- For seawater

Suitable accessories

- Handwheel
- Extension spindles
- Surface boxes
- Valve actuator



HAWLE E3 GATE VALVE | VALVES & HYDRANTS | PG 4



FIG. 1 Application example

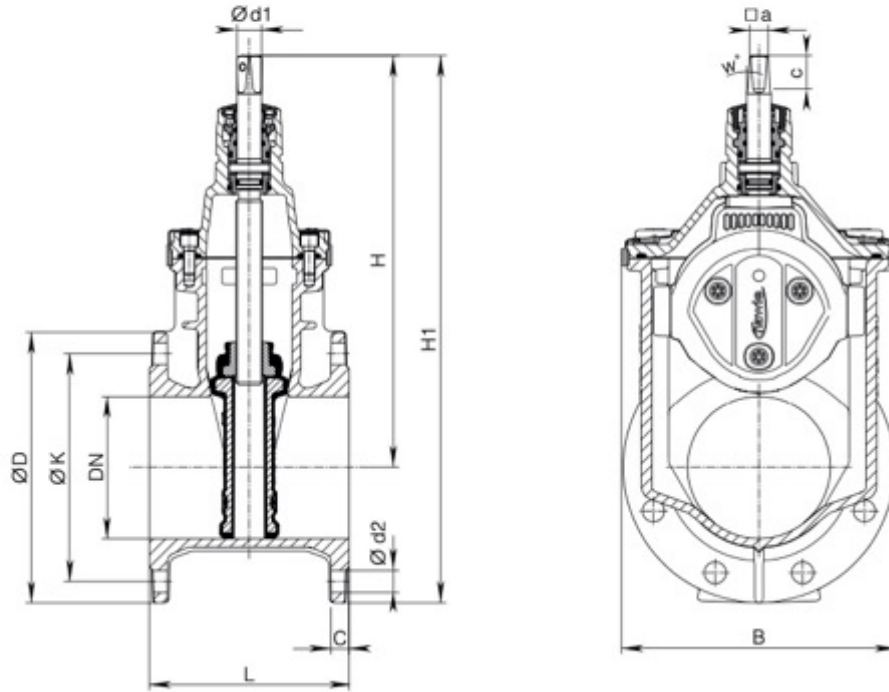


FIG. 2

TABLE 2

DN	PN	Flange			Bolts			Spindle			Valve				Weight (kg)	
		$\varnothing D$	C	$\varnothing K$	Qty.	Thread	$\varnothing d2$	a	c	*w	$\varnothing d1$	H	H1	L		B
50	16	165	19	114	4	M16	19	14.8	33		20.5	234	316.5	178	137	10.5
80	16	200	19	146	4	M16	19	17.3	38		24	312.5	412.5	203	175	18
100	16	220	19	178	4	M16	19	19.3	39	3°	24	343	453	229	206	23.5
150	16	285	19	235	8	M16	19	19.3	39		26	433	576	267	278	40.6
200	16	340	20	292	8	M16	19	24.3	49		30	541	711	292	347	65

HAWLE E3 GATE VALVE | VALVES & HYDRANTS | PG. 5

E3 Gate Valve Flange Ends DN250 – DN300

Design Specifications

- Resilient seated gate valve with smooth straight-through bore
- Suitable for cleaning with a cleaning pig
- Suitable for operation by automatic actuators
- O-rings lip-seals replaceable under operating pressure
- Ball bearings in the spindle seating minimizes closing forces
- Easy to actuate without bypass and without power boost -even for 16 bar differential pressure
- For mounting a position indicator it is necessary to remove the centering flange and attach the adapter for position indicator

Standard Version

Without handwheel and extension spindle

Suitable Accessories

- Handwheel
- Extension spindles
 - Rigid
 - Telescopic
- Surface boxes
- Valve actuator
- Adapter for actuator (E3 adapter)
- Base plate
- Operating cap
- Extension spindle
- Bolts
- HAWAK-pillar
- Flat gasket



Options

- For electric actuator
- With position indicator
- For seawater

Special Versions

on request - Bevel gearing

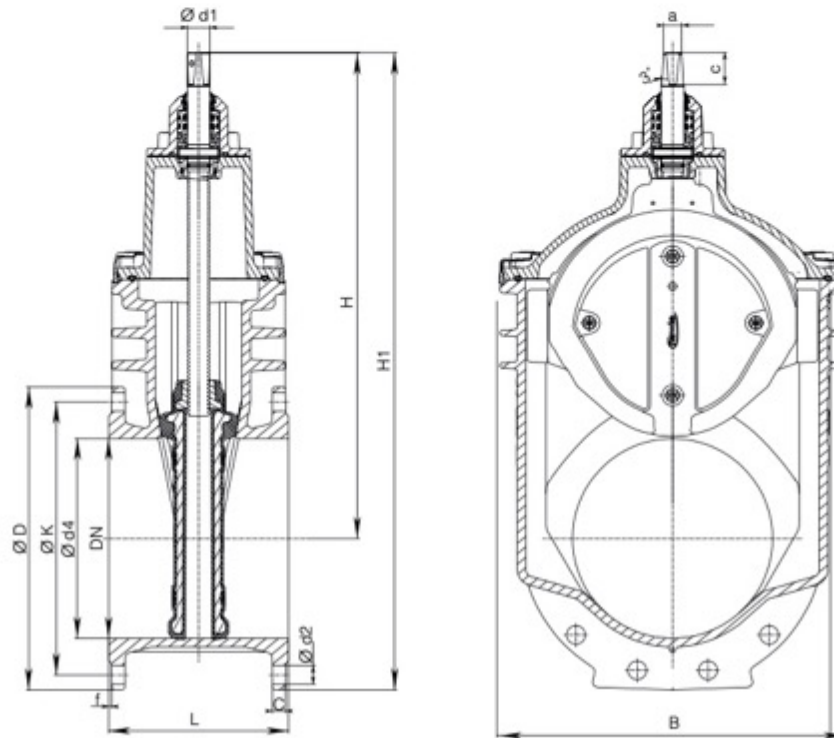


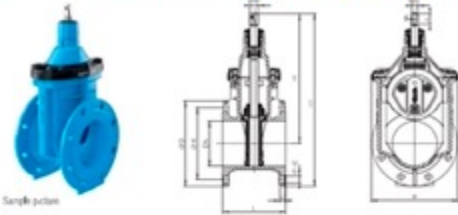
FIG. 3

HAWLE E3 GATE VALVE | VALVES & HYDRANTS | FIG 7

TABLE 3

DN	PN	Flange			Bolts			Spindle			Valve				Weight (kg)	
		ØD	C	ØK	Qty.	Thread	Ød2	a	c	°w	Ød1	H	H1	L		B
250	16	405	25	356	8	M20	23	27.3	48	3°	34	649	849	330	431.4	109
300	16	455	31	406	12	M20	23	27.3	48		34	731	958	356	517.6	167

Installation instructions HAWLE-E3 gate valve



Sample picture

1. Intended use

Medium: potable water
Max. operating pressure: 16 bar
Material: Body, bonnet and centering flange: ductile iron, epoxy powder-coated
 Wedge: ductile iron (DN 50 brass), elastomer
 Wedge nut, O-ring bush: brass | Wedge guide: POM
 Spindle: duplex stainless steel | O-ring, sealings: elastomer
 Screws: stainless steel | Edge protection: PE | Sliding disk: POM
 Wax: Paraffin wax | Safety screw: stainless steel | Spindle bearing: brass

Hawle valves are used in potable water distribution networks at a maximum operating pressure of 16 bar. For the installation and maintenance the applicable norms and standards, accident prevention regulations and regulations of professional organizations shall be complied with and observed. The valves shall be installed and maintained by skilled and trained personnel only.

2. Product description

The two wedge settings for valves are either "open" or "closed". The valves are not intended to control flow rates. Actuation of the valve is by means of an extension spindle in underground buried situations or by a handwheel when suitable. Use only handwheels or operating equipment recommended by Hawle. Modifications and additional extensions to operating equipment is not permitted.

3. Installation

Open-ended wrench, ring wrench, torque wrench



When installing valves with connections other than flanges (i.e. System 2000 socket, Balo socket, etc.) the relevant installation instructions have to be observed.

1. Ensure that the fittings are transported and load-secured in an orderly manner. When lifting equipment is used during loading, unloading and moving, it has to be attached to the flange or lifting ring only. Valve spindles are equipped with an inner thread for the reception of the lifting ring during transport. Using the handwheel for lifting is not permitted.

made for generations.



2. Check the valve for damage before assembly. Any damage to the coating must be dealt with professionally, using Hawle repairs material no. 3442.
3. The pipelines must be thoroughly cleaned of all dirt and grime before assembling the pipeline fittings. The assembly of the pipeline fitting may only be carried out by specialists following local regulations and Hawle installation procedures.
4. When installing in the pipeline system take care that the pipeline connection flanges that come into contact with each other are flush and parallel in order to avoid any tensions and stress to the valve body. Ensure an even pressure in between the flange seals, by crosswise tightening of the connecting screws. When using galvanized steel screws SI 4.8 (not lubricated) the following bolting torques must be observed:

Screw dimensions	Max. tightening torque per screw (Nm)
M 12	35
M 16	90
M 20	140
M 24	200
M 27	250
M 30	300

For all other screw materials, use the moments of torque in line with the best accepted engineering standards.

5. In the event that the valve is installed above ground, a covering or a coating with UV resistant paint is required to assure protection from UV light (e.g. Hawle order no. 3441).
6. The valve may only be operated using extension spindles or handwheels from our product range. The operating and closure torques are in compliance with the Standard EN 1074-2 section 5.2.3

4. Servicing and maintenance:

Hawle valves are designed for low maintenance operation. The pipeline fittings should be activated at reasonable intervals, at least once every years.

5. Commissioning and pressure testing:

Upon completion of assembly, a pressure test according to EN 805 at the given operating pressure rating must be carried out in the open trench. Open the valve, fill the pipeline with water (ventilate the pipeline) and carry out the pressure test prior to filling the trench (see „Hawle Water Catalogue“ page 6)

Sooner or later, even the best product will reach the end of its useful life and should be recycled as sustainably as possible. Please observe our disposal recommendations.

If you have any other questions or if you need more information, please contact your local Hawle branch.

E. Hawle Armaturenwerke GmbH
 Wegener Straße 131-143 | Voikabruck | Austria | hawle.com
 Ausgabe | Edition 04.2021 | 10119044



E3 Valve System 2000

E3 valve socket-socket for PE and PVC pipes, DN 50 – 350, PN 10 | PN 16

Design features

- Resilient seated gate valve with smooth straight-through bore
- With sockets for PE and PVC pipes
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuator on the standard bonnet

No. 4040E3

Standard version: without handwheel and extension spindle

Special versions: on request



Suitable accessories

Suitable accessories: see page A 2/2

- Handwheel: No. 7800
- Extension spindle: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surfaces boxes: rigid No. 1750
telescopic No. 2050,
No. 2051K
No. 9920
- Actuator:
Adapter for actuator (E2/E3 adapter): No. 8630E2/E3
- Base plate: No. 3481, No. 3482
- Sealing cap: No. 2156, No. 2157, No. 2158
- Spindle extension: No. 7820, No. 7825
- Position indicator: No. 2170E2/E3
- HAWAK pillar: No. 9894, No. 9895

Order No.	MOP (PN)	Dimensions/DN Ø pipe A																
		50	65	80	100	100	125	125	150	150	200	200	200	250	250	300	300	350
4040E3	16																	

*In preparation



E3 Valve System 2000

E3 valve flange-socket for PE and PVC pipes, DN 50 – 300, PN 10 | PN 16

Design features

- Resilient seated gate valve with smooth straight-through bore
- With socket for high-tensile connection with PE and PVC pipes
- Flange sized according to EN 1092-2, drilled according to EN 1092-2 | PN 10 standard; EN 1092-2 | PN 16 DN 200 – DN 250 please specify on order - other standards on request
- One extension spindle for several dimensions
- Suitable for operation by automatic actuators
- Easy retrofitting of position indicator and automatic actuator on the standard bonnet

No. 4041E3

Standard version: without handwheel and extension spindle

Special versions: on request



Suitable accessories

Suitable accessories: see page F 1/2

- Handwheel: No. 7800
- Extension spindle: rigid No. 9000E2/E3
telescopic No. 9500E2/E3
- Surfaces boxes: rigid No. 1750
telescopic No. 2050,
No. 2051K
- Actuator: No. 9920
- Adapter for actuator (E2/E3 adapter): No. 8630E2/E3
- Base plate: No. 3481, No. 3482
- Sealing cap: No. 2156, No. 2157
- Spindle extension: No. 7820, No. 7825
- Position indicator: No. 2170E2/E3
- Bolts: No. 8810, No. 8830 No. 8840
- Flat gasket: No. 3390, No. 3470
- HAWAK pillar: No. 9894, No. 9895

Order No.	MOP (PN)	Dimension/DN Ø pipe A													
		50	65	80	100	100	125	150	150	200	200	250	250	300	
4041E3	16														

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the Quality Certification Certificates are available from WSAA.

TABLE B1 E. HAWLE ARMATURENWERKE GMBH - MANAGEMENT SYSTEMS

Wagrainer Strabe 13 A-4840 Voecklabruck Austria	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	Q1531395
Certifying Agency	TUV SUD
First Date of Certification	21 August 1995
Current Date of Certification	6 April 2021
Expiry Date of Certification	31 March 2024

TABLE B2 – E. HAWLE ARMATURENWERKE GMBH - PRODUCT CERTIFICATION

Wagrainer Strabe 13 A-4840 Voecklabruck Austria	
Product Standard/Spec.	AS/NZS 2638.2:2011
Certificate No.	SMKP 20123
Issuing Certification Body	SAI-Global
First Date of Certification	17 March 2011
Current Date of Certification	5 August 2021
Expiry Date of Certification	31 March 2024

ZERTIFIKAT ♦ CERTIFICATE ♦ 認証書 ♦ СЕРТИФИКАТ ♦ CERTIFICADO ♦ CERTIFICAT



Landesgesellschaft Österreich

CERTIFICATE

The Certification Body
of TÜV SÜD Landesgesellschaft Österreich GmbH
certifies that



E. Hawle Armaturenwerke GmbH

Wagrainer Straße 13
A-4840 Vöcklabruck

Hawle Straße 1
A-4890 Frankenmarkt

has established and applies
a Management System for

Development, production and sales of valves and fittings

An audit was performed and proof has been furnished that the requirements
according to

ISO 9001 : 2015

are fulfilled. The certificate is valid until **2024-03-31**

Certificate Registration No. **Q1531395**

A. Rauscher
Vienna, 2021-04-06



Certification Body
of TÜV SÜD Landesgesellschaft Österreich GmbH
Franz-Grill-Straße 1 · Arsenal, Objekt 207, 1030 Vienna, Austria

TUV®



STANDARDSMARK LICENCE

SAI Global hereby grants:

E. Hawle Armaturenwerke GmbH

Wagrainer Strabe 13, A-4840 Voecklabruck, Austria
Hawle Strasse 1, Frankenmarkt, Austria

StandardsMark Licence

Manufactured to:

AS/NZS 2638.2:2011 - Gate valves for waterworks purposes - Resilient seated

"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.

Licence No: SMKP20123

Issued : 5 August 2021
Expires : 31 March 2024

Originally Certified : 17 March 2011
Current Certification : 5 August 2021

Frank Camasta
Global Head of Technical Services
SAI Global Assurance



* For details of manufacture, refer to the licensee

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SCHEDULE TO STANDARDSMARK LICENCE

SAI Global hereby grants:

E. Hawle Armaturenwerke GmbH

Wagrainer Strabe 13, A-4840 Voecklabruck, Austria

And
Hawle Strasse 1, Frankenmarkt, Austria

StandardsMark Licence

Manufactured to:

AS/NZS 2638.2:2011 - Gate valves for waterworks purposes - Resilient seated

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

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size (DN)	Valve Class (Allowable Operating Pressure)	Maximum Operating Temperature (°C)	Material Designation	Valve Coating Material	Valve Operating Method	Valve Direction of Closure	End Connection Designation	Date Endorsed
5002176ACC	4040 E2	E.Hawle	System 2000	RSGV	125	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 125OD	13 Mar 2018
5002222	4040 E2	E.Hawle	System 2000	RSGV	80	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 80OD	17 Oct 2017
5002224	4040 E2	E.Hawle	System 2000	RSGV	100	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 100OD	17 Oct 2017
5002225	4040 E2	E.Hawle	System 2000	RSGV	100	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 100OD	17 Oct 2017
5002227	4040 E2	E.Hawle	System 2000	RSGV	150	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 150OD	17 Oct 2017
5002229	4040 E2	E.Hawle	System 2000	RSGV	150	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 150OD	17 Oct 2017
5002230	4040 E2	E.Hawle	System 2000	RSGV	200	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 200OD	13 Mar 2018
5002231	4040 E2	E.Hawle	System 2000	RSGV	200	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 200OD	12 Feb 2019
5002232	4040 E2	E.Hawle	System 2000	RSGV	200	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 200OD	17 Oct 2017
5002242	4500E2			Resilient Seated Gate Valve for waterworks purposes	100	16	40	Ductile Cast Iron	AKZO NOBEL Rescoat RA Blue	Key Operated	Clockwise Closing	Socket	17 Oct 2017
5002247	4500E2			Resilient Seated Gate Valve for waterworks purposes	150	16	40	Ductile Cast Iron	AKZO NOBEL Rescoat RA Blue	Key Operated	Clockwise Closing	Socket	17 Oct 2017

Licence No: SMKP20123

Issued Date: 5 August 2021

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size (DN)	Valve Class (Allowable Opening Pressure)	Maximum Operating Temperature (°C)	Material Designation	Valve Coating Material	Valve Operating Method	Valve Direction of Closure	End Connection Designation	Date Endorsed
500251	450E2			Resilient Seated Gate Valve for waterworks purposes	200	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Clockwise Closing	Socket	17 Oct 2017
500256	450E2			Resilient Seated Gate Valve for waterworks purposes	100	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Socket	17 Oct 2017
500259	450E2			Resilient Seated Gate Valve for waterworks purposes	150	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Socket	17 Oct 2017
500270	450E2			Resilient Seated Gate Valve for waterworks purposes	200	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Socket	17 Oct 2017
500212	404E2	E. Haake	System 2000	RSOV	80	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 9000 / Flange	17 Oct 2017
500213	404E2	E. Haake	System 2000	RSOV	100	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 12500 / Flange	17 Oct 2017
500214	404E2	E. Haake	System 2000	RSOV	150	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 18000 / Flange	17 Oct 2017
500253	400E2			Resilient Seated Gate Valve for waterworks purposes	100	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
500258	400E2			Resilient Seated Gate Valve for waterworks purposes	150	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
500250	400E2			Resilient Seated Gate Valve for waterworks purposes	200	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
500259	400E2	E. Haake		RSOV	80	PN16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key	Anti Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	28 Mar 2019
500250	400E2			Resilient Seated Gate Valve for waterworks purposes	100	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
500252	400E2			Resilient Seated Gate Valve for waterworks purposes	150	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
500254	400E2			Resilient Seated Gate Valve for waterworks purposes	200	16	40	Ductile Cast Iron	AKZO NOBEL Resicoat R4 Blue	Key Operated	Anti Clockwise Closing	Flanged Ends AS/NZS4087 Fig B5	17 Oct 2017
502980	400E3	E. Haake	E3 VALVES AS 2638.2	RSOV	80	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
502981	400E3	E. Haake	E3 VALVES AS 2638.2	RSOV	100	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size (DN)	Valve Class (Allowable Operating Pressure)	Maximum Operating Temperature (°C)	Material Designation	Valve Coating Material	Valve Operating Method	Valve Direction of Closure	End Connection Designation	Date Endorsed
5029722	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	150	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5029723	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	200	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5029724	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	250	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5029725	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	300	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5030699	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	200	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	CC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5030700	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	100	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	CC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5030701	400E3	E Handle	E3 VALVES AS 2638.2	RSGV	150	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	CC	Flanged Ends AS/NZS4087 Fig B5	24 May 2021
5030860	401E3	E Handle	System2000	RSGV	100	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Restraint Socket 1500D / Flange	24 May 2021
5030891	404E3	E Handle	System2000	RSGV	300	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Flanged Ends AS/NZS4129 tested PE Restraint Socket 3150D	24 May 2021
5030896	401E3	E Handle	System2000	RSGV	150	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Restraint Socket 1500D / Flange	24 May 2021
5030902	404E3	E Handle	System2000	RSGV	80	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 900D	24 May 2021
5030903	404E3	E Handle	System2000	RSGV	100	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 1250D	24 May 2021
5030904	404E3	E Handle	System2000	RSGV	150	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 1500D	24 May 2021
5030905	404E3	E Handle	System2000	RSGV	200	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 2000D	24 May 2021
5030906	404E3	E Handle	System2000	RSGV	200	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 2000D	24 May 2021
5030907	401E3	E Handle	System2000	RSGV	80	PN 16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	Restraint Socket 900D / Flange	24 May 2021
A46100442/TD	401E2	E Handle	System 2000	RSGV	100	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 1100D / Flange	10 Dec 2014
A4610049/TD	401E2	E Handle	System 2000	RSGV	150	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 1500D / Flange	10 Dec 2014
A4610056/TD	401E2	E Handle	System 2000	RSGV	200	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 2250D / Flange	10 Dec 2014
A46100665/TD	401E2	E Handle	System 2000	RSGV	200	PN16	40	Ductile Cast Iron	AKZO NOBEL	Key	ACC	AS/NZS4129 tested PE Restraint Socket 2000D / Flange	10 Dec 2014

End of Record

Licence No: SMKP20123

Issued Date: 5 August 2021

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APPENDIX C – SUPPLIER CONTACTS

Hygrade Water Australia

Brisbane Head Office

42-44 Blue Eagle Drive, Meadowbrook, QLD 4132

Telephone: 07 3805 9186

Email: qldsales@hygradewater.com.au

Sydney Office

10 McPherson Road, Smeaton Grange, NSW 2567

Telephone: 02 4646 1747

Email: nswsales@hygradewater.com.au

Website: www.hygradewater.com.au



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ASSOCIATION OF AUSTRALIA

Melbourne Office

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401 Docklands Drive
Docklands VIC 3008

Sydney Office

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Sydney NSW 2000
GPO Box 915
Sydney NSW 2001

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email: info@wsaa.asn.au

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