



E.Hawle Armaturenwerke GmbH

PRODUCT APPRAISAL REPORT 1206 Issue 5

HAKU Tapped and Flanged Off-take Clamps for PE Pipe

AS/NZS 4129:2020 Fittings for polyethylene (PE) pipes for pressure applications

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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

Hawle, based in Vöcklabruck Austria, is a leading manufacturer of valves and pipeline fittings for the water and gas industries. Products are exported to more than 60 countries worldwide.

This appraisal is for PN16 tapped and flanged off-take clamps for PE100 pipes, manufactured in conformance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

This Issue 5 is a replacement for the previous version that had reached its 5-year expiry.

The tapped off-take clamps are available in sizes from DN 40 to DN 315 with 1" or 2" BSP outlets (depending on the nominal size).

The flanged off-take clamps are available in sizes from DN 110 to DN 355 with DN 80, DN 100 or DN 150 flanged outlets (depending on the nominal size).

The HAKU tapped off-take clamps consist of two ductile iron polymeric coated components bolted together, clamp style, with stainless steel fasteners. A full contact rubber lining is bonded to the inside of the components with several concentric O-ring seals surrounding the threaded outlet.

The HAKU flanged off-take clamps consist of two ductile iron polymeric coated components bolted together, clamp style, with stainless steel fasteners. The bottom component has a full contact rubber lining glued to the inside diameter, whilst the flanged component is fitted with an O-ring around the outlet.

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

The Hawle HAKU tapped and flanged off-take clamp range has ISO Type 5 StandardsMark product certification to AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications*.

This Appraisal has determined that Hawle HAKU tapped and flanged off-take clamps, as detailed in this report, meet the requirements of WSA PS 313 *Repair and Off-take Clamps for Pressure Applications – Drinking Water and Non-Drinking Water Supply* and are considered as 'fit-for-purpose'.

1.1 Report Recommendation

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the Hawle HAKU PN16 tapped and flanged off-take clamps, as detailed in this report, for use with PE100 water supply and sewerage pressure pipelines, provided they are installed in accordance with applicable WSAA Codes and the manufacturer's requirements, where specified.

2 THE APPLICANT

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 (Limited Liability Company) is based in Vöcklabruck, Austria. The Hawle Company 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 plants and subsidiary operations throughout Europe. Hawle products are exported to more than 60 countries world-wide. Additional information is available at <https://www.hawle.com>

3 THE PRODUCT

This appraisal is for a range of Hawle HAKU tapped and flanged off-take clamps. These products are designed for use with AS/NZS 4130 PE100 polyethylene pipes with pressure classifications up to PN16.



FIGURE 1 HAKU TAPPED AND FLANGED OFF-TAKE CLAMPS

HAKU tapped off-take clamps feature the following attributes:

- Ductile Iron polymeric coated top and bottom components.
- Grade 316 (A4) stainless steel fasteners. Nuts are Molybdenum coated.
- EPDM full contact linings bonded to both components of the clamp.
- 1" or 2" BSP parallel (Rp) threaded outlets surrounded by multiple concentric EPDM 'O' rings.

Hawle advise that where alternative outlet sizes are required an approved DR brass bush should be utilised.

HAKU flanged off-take clamps feature the following attributes:

- Ductile Iron polymeric coated top and bottom components.
- Grade 316 (A4) stainless steel fasteners. Nuts are Molybdenum coated.
- EPDM full contact lining bonded to the bottom component.
- EPDM O-Ring fitted around the flanged outlet of the top component.
- DN 80 to DN 150 AS/NZS 4087 PN16 Fig B5 flange

Both clamp types are full circle design where the two halves meet to provide a positive stop to avoid over tightening on the pipe.

See Tables 1 and 2 for the range of tapped and flanged off-take clamps included in the scope of this appraisal.

TABLE 1 HAKU TAPPED OFF-TAKE CLAMPS

Nominal Size DN	Threaded outlet size	
	25mm (1" BSP)	50mm (2" BSP)
40	✓	
50	✓	
63		✓
75		✓
110*		✓
125*		✓
140		✓
160		✓
180*		✓
200		✓
225		✓
250*		✓
280		✓
315*		✓

Note: The products marked with an asterisk indicate that AS/NZS 4129 Type Tests have been completed for those sizes with a 2" BSP outlet.

TABLE 2 HAKU FLANGED OFF-TAKE CLAMPS

Nominal Size DN	Flanged outlet size		
	80mm	100mm	150mm
110*	✓		
125*	✓	✓	
140	✓	✓	
160	✓	✓	
180*	✓	✓	
200	✓	✓	
225	✓	✓	
250*	✓		
280			✓
315*	✓		✓
355			✓

Nominal Size DN	Flanged outlet size		
	80mm	100mm	150mm

Note: The products marked with an asterisk indicate that AS/NZS 4129 Type Tests have been completed for those sizes with a DN 80 or DN 100 branch.

Alternative design clamps are included in the literature for sizes DN 250 to DN 630 where the bottom half of the clamp is a Grade 316 stainless steel strap. WSAA does not consider this design type to be suitable for use on flexible pipes such as PE as the design does not incorporate a positive stop to avoid over-tightening.

Hawle advises that when the off-take clamps are fitted to pipe where the outside diameter is above tolerance, a maximum torque should be applied in accordance with the Installation Instructions. (See Appendix A).

4 SCOPE OF THE APPRAISAL

The Scope of this appraisal includes PN16 tapped and flanged off-take clamps for use with PE100 pipes in sizes from DN 40 to DN 355, as detailed in Section 3. The products are included in the ISO Type 5 StandardsMark Product Certification included in Appendix B.

Please note that the brochures included in Appendix A contain additional products that have not been included in the scope of this appraisal.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts tapped and flanged off-take clamps for PE pipe manufactured in compliance with AS/NZS 4129:2020 *Fittings for polyethylene (PE) pipes for pressure applications* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS/ANZ accredited Certification Assessment Body (CAB) or by an international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been accredited in accordance with 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

The HAKU tapped and flanged off-take clamps have been appraised for compliance with AS/NZS 4129:2020 – *Fittings for polyethylene (PE) pipes for pressure applications*.

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 Specification is also relevant to this application:

WSA PS 313 *Repair and Off-take Clamps for Pressure Applications – Drinking Water and Non-Drinking Water Supply*.

A copy of the Product Specification is available at the following link:

<https://wsaa.asn.au/Web/web/shop/ShopSearch.aspx?category=PRODSPECS>

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. QU1531395/01 issued to E. Hawle Armaturenwerke GmbH by TUV SUD.
- AS /NZS 4129:2020 ISO Type 5 StandardsMark Product Certification Licence No. SMK25792 issued to E. Hawle Armaturenwerke GmbH by Intertek SAI Global.

Copies of the Quality Certificates have been included in Appendix B and are also available from WSAA.

Copies of ISO 9001 certifications have also been provided for the suppliers of components.

6.2 Compliance with Performance Requirements

6.2.1 Material Requirements

6.2.1.1 Ductile Iron Components

Ductile iron is nominated as Grade 400-15 and a typical test certificate has been submitted to demonstrate conformance to this requirement.

6.2.1.2 Elastomeric seals

Elastomeric components are manufactured by Compounds AG in Switzerland. The seals and O-rings are specified as T8157 EPDM and a test certificate has been submitted to demonstrate conformance to EN681.1.

6.2.1.3 Stainless Steel Fasteners

Stainless Steel fasteners are Grade 316 (A4) bolts, nuts and washers. The nuts are molybdenum coated.

6.2.1.4 Polymeric Coatings

The ductile iron components are coated with Akzo Nobel, Resicoat R4, a thermosetting epoxy powder coating, applied by the fluidised bed process. The coating is covered by an AS/NZS 4158 ISO Type 5 product certification licence. A copy of the licence is held on file by WSAA.

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 the clamps are coated to comply with AS/NZS 4158 thicknesses.

A Certificate of Conformity No. 020101/61678 issued by SGS has been submitted to certify that the Hawle coating process conforms to AS/NZS 4158.

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

6.2.2 Compliance with AS/NZS 4020

Type Test report Nos AAZ99612 and AAZ99601 dated 4th March 2022 undertaken by Eurofins ams (NATA Accreditation No. 15773) have been submitted to demonstrate that the tapped and flanged clamps conform to the requirements of AS/NZS 4020:2018.

6.2.3 Type Tests

Hawle has submitted Type Test reports from Queensland Testing Laboratories Pty Ltd (NATA Accreditation No. 14783) to demonstrate compliance with AS/NZS 4129, as summarized in Table 3.

TABLE 3 PRODUCT TYPE TESTING

CLAUSE	TYPE TEST	PRODUCTS TESTED
--------	-----------	-----------------

4.4.2	Leak resistance under pressure	DN 110 with 50mm (2") BSP outlet.
4.4.3	Liquid infiltration. when subject to bending	DN 125 with 50mm (2") BSP outlet.
4.4.4	Hydrostatic pressure test for assembled saddle.	DN 180 with 50mm (2") BSP outlet.
4.4.5	Resistance to pressure during application of a bending moment to the branch outlet.	DN 110 with DN 80 flange DN 125 with DN100 flange
4.4.6	Resistance to sliding of saddle on the pipe – rotational & axial	DN180 with DN 80 flange. DN 250 with DN 80 flange. DN 315 with DN 80 flange.

Note: AS/NZS 4129 does not nominate specific sizes to be tested for qualification purposes

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Off-take clamps are a mature and simple product and experienced pipeline installers are well versed in the requirements for installation. A copy of the installation instructions is provided with the product and a copy is included in Appendix A.

8 PRODUCT MARKING

Off-take clamps are marked in accordance with the requirements of AS/NZS 4129:

- Manufacturers Name: Hawle HAKU
- Date or batch code:
- Nominal Size: e.g., DN 125
- Off-take size: e.g., 100, 2"
- Pipe Material: DI
- Classification: PN16
- The standard number: AS/NZS 4129
- Standards Mark symbol – (>>>>I)
- Licence Number: SMK 25792

AS/NZS 4129 specifies that the manufacturers name or registered trademark shall be legibly and permanently marked on the body of the fitting. Other marking requirements may be provided using a label, preferably attached to the fitting body.

9 PACKAGING AND TRANSPORTATION

Individual clamps are packed in transparent protective bags and contained in carton boxes. Each carton or protective package indicates its contents. All fittings are packaged to allow use on site without additional cleaning.

Where only one type of product is packaged in a bag or carton box, a label showing the manufacturer identification, the description of the product, a drawing of the product, the relevant size and the quantity is indicated on each package.

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

The Haku off-take clamps have been in common use in Australia for many years and are approved by most water agencies.

European product approvals including the following:

- Dutch KIWA Approval
- Belgium – Belgaqua Approval
- Poland – ITB Approval
- Germany DVGW Approval
- Belarus Approval
- England WRAS Approval

12 DISCUSSION

Whilst the Product Certification product schedule lists the complete HAKU product range some sizes may not be stocked in Australia. In addition, there are some products listed on the product schedule and in the literature that have not been included in the scope of this Appraisal.

The scope of this Appraisal is detailed in Section 3.

13 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

Some queries were raised during the original peer review process and the answers are provided below:

Q1. Can these fittings be used for under-pressure applications?

A1. Yes, they can be used for under-pressure tapping utilising established procedures.

Q2. Are the lengths of the flanged off-take clamps adequate? For example, a DN110 x 80 clamp is 180mm wide, which leaves around 50mm either side of a dn 80 drilled hole.

A2. The design team has successfully conducted extensive testing of the HAKU range against caving of PE pipe and the fittings have been used extensively in Europe without problems.

Q3. The terminology used in the brochures is different to those used in the Appraisal Report.

A3. The brochures have been produced using European terminology, whereas to avoid confusion WSAA has adopted Australian terminology in the Appraisal Report. 'Pipe saddle with threaded outlet' is commonly known in Australia as 'tapped off-take clamp' and 'pipe saddle with flanged outlet' is known as 'flanged off-take clamp'.

14 FUTURE WORKS

No future works have been identified.

15 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, email carl.radford@wsaa.asn.au.

15.1 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.

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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



Haku Pipe Saddle with Flanged Outlets

Specifically designed as a mechanical connection for metric PE and PVC pressure watermain pipelines. Ideal for hydrant and air valve installations.



TECHNICAL GUIDE: **APF4.10**

Applications

Lateral connections to metric PE and PVC pressure watermain pipelines

Product Attributes

Ductile iron epoxy powder coated

Bolts, nuts and washers of stainless steel

The drilled hole is sealed by an 'O' ring

Flanged or BSP outlets

Approvals/Standards

Approved AS/NZS 4129 fittings for polyethylene (PE) pipes for pressure applications

WSAA appraised

Flanges to AS4087

Quality

ISO 9001:2008 Quality Management System

Haku Pipe Saddle with Threaded BSP Outlet

HAKU saddles provide the best method for sealing off-takes and outlets on metric PE and PVC pressure watermain pipe.

The HAKU seal is in full contact with the entire diameter of the PE pipe and is glued onto the saddle for ease of assembly. In addition several concentric seals with increasing diameter surround the outlet thus relieving the pressure upon the drill hole and protecting it from deformation.

Watermark appraised



Material

- Ø40: EN-GJL-250 (GG 250) to EN 1561, epoxy powder coated
- Ø50 - 500: EN-GJS-400-15/18 (GGG 400) to EN 1563 epoxy powder coated
- Rubber seals: Elastomer, suitable for potable water
- Bolts and washers: Stainless steel – A4



FIG. 1

TABLE 1

Pipe Ø mm	Internal threaded outlet			
	1"	1¼"	1½"	2"
40	*			
50	*			
63	*	*	*	*
75	*	*	*	*
90	*	*	*	*
110	*	*	*	*
125	*	*	*	*
140	*	*	*	*
160	*	*	*	*
180	*	*	*	*
200	*	*	*	*
225	*	*	*	*
250	*	*	*	*
280	*	*	*	*
280*	*	*	*	*
315				*
315*		*	*	*
355				*
400*			*	*
450*			*	*
500*			*	*



FIG. 2

Note: *supplied as saddle piece with strap.
Caution: When being used on PE pipes, this type is suitable on class SDR 11 and higher qualities, only

APFA.10 HAWLE HAKU PIPE SADDLE WITH FLANGED OUTLETS | DRAINAGE CHANNEL | PG2

Haku Pipe Saddle with Flanged Outlets

For metric PE and PVC pressure watermain pipelines.

Watermark appraised



Features

- Solid construction of ductile, iron epoxy powder coated
- Bolts, nuts and washers of stainless steel
- The drilled hole is sealed by an 'O' ring inserted in the upper part of saddle (Ø630, 2 'O' rings)
- The rubber linings are bonded to the lower part of saddle – this ensures positive positioning of saddle (only Ø110-315)

Material

- Saddle body:
 - Ductile iron EN-GJS-400-18 according to EN 1563 (GGG 400 – DIN 1693)
 - Epoxy powder coated
- Rubber-in the lower part:
 - Elastomer
- 'O' ring seal-in the bonnet:
 - Elastomer, (suitable for potable water)
- Bolts, Nuts and Washers:
 - Stainless steel – A2
- Nuts:
 - Molybdenum coated



FIG. 5



FIG. 6

TABLE 3

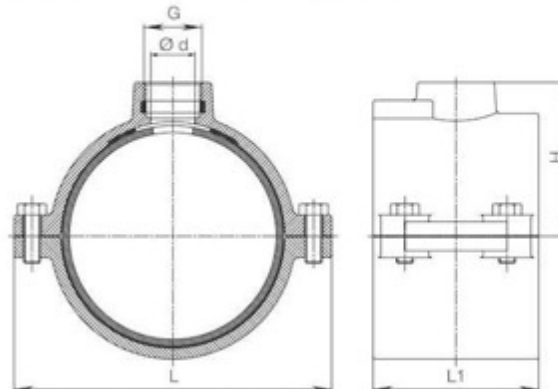
Flange Size	Dimensions												
	110	140	160	180	200	225	250	280	315	355	450	500	630
80
100
150

APP4.10 HAWLE HAKU PIPE SADDLE WITH FLANGED OUTLETS | DRAINAGE CHANNEL | PG.4

Installation instructions **HAKU Pipe Saddles**



Sample picture



1. Intended use / product description

Medium:	potable water
Max. operating pressure:	16 bar
Material:	body: ductile iron, epoxy powder-coated
	gaskets: elastomer
	screws: stainless steel - coated
	washers: stainless steel

HAKU pipe saddles are used for installation in the field of potable water supply and for other potable water applications. They can be used for pipes of PE acc. to EN 12201-2, DIN 8074, and PVC pipes acc. to EN 1452-2, DIN 8062. For installation, assembly and maintenance, the applicable standards and regulations as well as the trade associations' provisions for the prevention of accidents shall be complied with. The saddles shall be installed and maintained by skilled personnel only.

2. Installation



**Open-ended wrench,
ring wrench, torque wrench**

The following installation instructions apply to HAKU pipe saddles consisting of two half shells.

1. The surface of the pipe must be free from dirt, soil or grease, and the pipe has to be cleaned accordingly. When the saddle is to be used on a pipe with outside protection layer, the layer has to be removed to the base pipe as specified by the pipe manufacturer.
2. Place the HAKU pipe saddle at the intended position.
3. Fix the HAKU top and bottom halves by means of the four screws included in the scope of supply. Please tighten them at the following torques:
 - M 10: min. torque 50 Nm - max. torque 60 Nm
 - M 12: min. torque 60 Nm - max. torque 70 Nm
 - M 14: min. torque 70 Nm - max. torque 80 Nm
 - M 16: min. torque 80 Nm - max. torque 90 Nm
 - M 20: min. torque 110 Nm - max. torque 120 Nm

hawle. **made for generations.**

**Standard installation:**

Tighten the hexagon head screws evenly and crosswise until the two parts get in contact and the maximum torque is reached.

➔ Do not use any extensions!

Installation on aged pipes:

When installing the saddles on existing PE pipelines (aged pipes) the outside diameter may exceed the standard pipe tolerance. Pretighten HAKU with two longer screws, if required. After final assembly of the saddle, check the maximum torque twice after 15 minutes, each!

4. Now drill the pipe by means of the Hawle drilling machine.
➔ Please follow the applicable manual.

3. Servicing and maintenance

Hawle HAKUs do not require any maintenance.

4. Commissioning and pressure testing:

After completion of the installation work, perform a pressure test according to EN 805. (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

Wagrainer Straße 13 | A-4840 Vöcklabruck | hawle.com

Ausgabe | Edition 01.2019 | 5019590

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certificates are available from WSAA.

TABLE B1
E. HAWLE ARMATURENWERKE GMBH - MANAGEMENT SYSTEMS

A-4840 Vocklabruck Wagrain Strasse 13	
Quality Systems Standard	ISO 9001:2015
Certification licence no.	QU1531395/01
Certifying agency	TUV SUD
First date of certification	21 August 1995
Current date of certification	3 June 2024
Expiry date of certification	31 March 2027

TABLE B2
E. HAWLE ARMATURENWERKE GMBH - PRODUCT CERTIFICATION

A-4840 Vocklabruck Wagrain Strasse 13	
Product Standard/Spec.	AS/NZS 4129:2020
Certificate No.	SMK25792
Issuing certification body	Intertek SAI Global
First date of certification	4 September 2013
Current date of certification	31 July 2023
Expiry date of certification	3 September 2028

STANDARDSMARK LICENCE



Intertek SAI Global hereby grants: **E. Hawle Armaturenwerke GmbH**

Wagrainer Strabe 13, A-4840 Voecklabruck, Austria

StandardsMark Licence

Manufactured to:

**AS/NZS 4129:2020 - Fittings for polyethylene (PE)
pipes for pressure applications**

"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:
SMK25792**

Originally Certified:
4 September 2013

Current Certification:
31 July 2023

Issued:
31 July 2023

Expires:
3 September 2028



Calin Moldovean

President, Business Assurance

SAI Global Certification Services Pty. Ltd.
Level 7 Suite 7.01 45 Clarence Street
Sydney NSW 2000 Australia

* For details of manufacture, refer to the licensee

The STANDARDSMARK is a registered certification trademark of SAI Global Pty Limited (A.C.N. 050 644 642) and is issued under licence by SAI Global Certification Services Pty Limited (ACN 109 716 669) ("INTERTEK SAI Global") Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia and subject to the INTERTEK SAI Global Terms and Conditions for Certification. In the issuance of this certificate, INTERTEK SAI Global assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with INTERTEK SAI Global requirements for systems certification. This certificate may only be reproduced in its entirety and remains the property of INTERTEK SAI Global, to whom it must be returned upon request. Refer to <https://register.sai-global.com/> for the list of product models.



SCHEDULE TO STANDARDSMARK LICENCE



Intertek SAI Global hereby grants: **E. Hawle Armaturenwerke GmbH**

Wagrainer Strabe 13, A-4840 Voecklabruck, Austria

Manufactured to:

AS/NZS 4129:2020 - Fittings for polyethylene (PE) pipes for pressure applications

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

Model Identification	Model Name	Brand Name	Product Description	Product Type	Product Application	Size Classification	Pressure Classification	Joint Type	Date Endorsed
5003447	5250	E.Hawle	Haku PE Pipe Saddle 1" BSP	PE Pipe Tapping Saddle	Water	40	PN16	Mechanical	17 Jan 2023
5003452	5250	E.Hawle	Haku PE Pipe Saddle 1" BSP	PE Pipe Tapping Saddle	Water	50	PN16	Mechanical	17 Jan 2023
5003484	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	110	PN16	Mechanical	17 Jan 2023
5003496	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	125	PN16	Mechanical	17 Jan 2023
5003519	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	250	PN16	Mechanical	17 Jan 2023
5003533	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	280	PN16	Mechanical	17 Jan 2023
5003547	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	315	PN16	Mechanical	17 Jan 2023
5003576	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	63	PN16	Mechanical	17 Jan 2023
5003595	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	75	PN16	Mechanical	17 Jan 2023
5003716	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	140	PN16	Mechanical	17 Jan 2023
5003732	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	160	PN16	Mechanical	17 Jan 2023
5003742	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	180	PN16	Mechanical	17 Jan 2023
5003755	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping Saddle	Water	200	PN16	Mechanical	17 Jan 2023
5003768	5250	E.Hawle	Haku PE Pipe Saddle 2" BSP	PE Pipe Tapping	Water	225	PN16	Mechanical	17 Jan 2023

Certificate No: SMK25792

Issued Date: 31 July 2023

This schedule supersedes all previously issued schedules

* For details of manufacture, refer to the licensee

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SCHEDULE TO STANDARDSMARK LICENCE



Model Identification	Model Name	Brand Name	Product Description	Product Type	Product Application	Size Classification	Pressure Classification	Joint Type	Date Endorsed
				Saddle					
5004310	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	110	PN16	Mechanical	17 Jan 2023
5004312	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	125	PN16	Mechanical	17 Jan 2023
5004314	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	125	PN16	Mechanical	17 Jan 2023
5004316	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	140	PN16	Mechanical	17 Jan 2023
5004318	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	140	PN16	Mechanical	17 Jan 2023
5004320	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	160	PN16	Mechanical	17 Jan 2023
5004322	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	160	PN16	Mechanical	17 Jan 2023
5004324	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	180	PN16	Mechanical	17 Jan 2023
5004326	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	180	PN16	Mechanical	17 Jan 2023
5004328	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	200	PN16	Mechanical	17 Jan 2023
5004330	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	200	PN16	Mechanical	17 Jan 2023
5004332	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	225	PN16	Mechanical	17 Jan 2023
5004334	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	225	PN16	Mechanical	17 Jan 2023
5004336	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 80	PE Pipe Tapping Saddle	Water	250	PN16	Mechanical	17 Jan 2023
5004338	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 150	PE Pipe Tapping Saddle	Water	280	PN16	Mechanical	17 Jan 2023
5004340	5230	E.Hawle	Haku PE Pipe	PE Pipe	Water	315	PN16	Mechanical	17 Jan 2023

Certificate No: SMK25792

Issued Date: 31 July 2023

This schedule supersedes all previously issued schedules

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SCHEDULE TO STANDARDSMARK LICENCE



Model Identification	Model Name	Brand Name	Product Description	Product Type	Product Application	Size Classification	Pressure Classification	Joint Type	Date Endorsed
			Saddle Flanged Outlet 80	Tapping Saddle					
5004342	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 150	PE Pipe Tapping Saddle	Water	315	PN16	Mechanical	17 Jan 2023
5004344	5230	E.Hawle	Haku PE Pipe Saddle Flanged Outlet 150	PE Pipe Tapping Saddle	Water	355	PN16	Mechanical	17 Jan 2023
5017933	5230	E.Hawle	HAKU PE Pipe Saddle Flanged Outlet 150	PE Pipe Tapping Saddle	Water	250	PN16	Mechanical	17 Jan 2023
5030564	5230	E.Hawle	HAKU PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	250	PN16	Mechanical	17 Jan 2023
5030566	5230	E.Hawle	HAKU PE Pipe Saddle Flanged Outlet 100	PE Pipe Tapping Saddle	Water	280	PN16	Mechanical	29 Jul 2023

End of Record

Certificate No: SMK25792

Issued Date: 31 July 2023

This schedule supersedes all previously issued schedules

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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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Gadigal Country
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