



Vinidex Pty Ltd

PRODUCT APPRAISAL REPORT 2415

STRAUB Stainless Steel Flexible Unrestrained Couplings

**WSA PS - 285 Flexible Stainless-Steel Couplings, Restrained
and Non-Restrained Joints**

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Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	17 August 2026
Peter Pittard, WSAA Consultant	WSAA	3 August 2026
Carl Radford, Product Appraisal Manager	WSAA	17 August 2026

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

Vinidex Pty Ltd is a leading Australian manufacturer and distributor of thermoplastic pipe and fittings used in the transportation of fluids for infrastructure development, agriculture, mining and building.

STRAUB Werke AG, based in Wangs, Switzerland, is a specialist manufacturer of pipe connections including the world recognised comprehensive range of STRAUB pipe couplings.

This appraisal is for a range of STRAUB FLEX and STRAUB OPEN FLEX stainless steel flexible unrestrained couplings in sizes from DN 40 to DN 1200 manufactured to meet the requirements of WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints* with testing completed in accordance with the principles of ASTM F 1476:07 (2019) *Standard specification for performance of gasketed mechanical couplings for use in piping applications*.

The components of the couplings submitted for appraisal are manufactured from Grade 316 stainless steel (W5 material class) and incorporate an EPDM sealing gasket suitable for water supply and sewerage applications.

Couplings are available with Allowable Operating Pressures from PN 2.5 to PN 25, depending on size. Standard widths for the W5 couplings include 74mm, 94mm, 107mm, 138mm and 141mm. See Table 1 for details.

STRAUB couplings are suitable for joining or repairing all types of pipe materials including DI, AC, PVC, steel, PE, GRP and concrete. OPEN FLEX couplings incorporate a hinged body that allows for it to be used both as a pipe coupling or for repair of in-situ pipes.

Vinidex Pty Ltd and STRAUB Werke AG both hold ISO 9001:2015 Quality Management System Licences.

This Appraisal has determined that the STRAUB stainless steel flexible unrestrained couplings, as detailed in this report, meet the requirements of WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints* 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 the STRAUB stainless steel flexible unrestrained couplings, as detailed in this report, for use in water supply and sewerage applications provided the design, installation and acceptance testing are in accordance with WSAA codes and manufacturer's requirements.

2 THE APPLICANT

The Applicant is Vinidex Pty Ltd.

2.1 The Supplier

Vinidex Pty Ltd is a leading Australian manufacturer and distributor of thermoplastic pipe and fittings used in the transportation of fluids for infrastructure development, agriculture, mining and building.

Founded in 1960, Vinidex has pipe manufacturing factories and distribution centres located in Sydney, Melbourne, Brisbane, Toowoomba, Townsville, Launceston, Perth, Adelaide, Darwin and Wagga Wagga. The company also has a significant presence in the Asia-Pacific Rim including operations in New Zealand.

Vinidex is wholly owned by the Aliaxis Group, a leading global manufacturer and distributor of fluid handling systems used in residential and commercial construction, as well as in industrial and public infrastructure applications.

Aliaxis is present in over 40 countries, has more than 100 manufacturing and commercial entities and employs over 14,000 people. In addition to the well-established markets of Europe and North America, Aliaxis has operations in Latin and South America, Australasia and Asia.

Further information is available on Vinidex or Aliaxis websites at www.vinidex.com.au or www.aliaxis.com.

2.2 The Manufacturer

STRAUB Werke AG was formed in Zurich, Switzerland in 1954. In 1964, STRAUB began production of the original stainless steel pipe couplings. Continual research and development led to multiple design enhancements. By the early 1990's STRAUB products were being distributed to over 50 countries around the world. In 2003, STRAUB Werke AG became part of the Aliaxis Group.

Further information is available at www.straub.ch/en/

3 THE PRODUCT

This appraisal is for a range of STRAUB FLEX and STRAUB OPEN FLEX stainless steel flexible unrestrained couplings in sizes from DN 40 to DN 1200 manufactured to meet the requirements of WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints* with testing completed in accordance with the principles of ASTM F 1476:07 (2019) *Standard specification for performance of gasketed mechanical couplings for use in piping applications*.

The components of the couplings submitted for appraisal are manufactured from Grade 316 stainless steel (W5 material class) and incorporate an EPDM sealing gasket suitable for water supply and sewerage applications. The model identifications are STRAUB FLEX 1 and STRAUB FLEX 2.

Couplings are available with Allowable Operating Pressures from PN 2.5 to PN 25, depending on size. Standard widths include 74mm, 94mm, 107mm, 138mm and 141mm. See Table 1 and Appendix A for details.

The STRAUB pipe coupling range consists of a stainless-steel sleeve and EPDM gasket with flexible sealing lips surrounding the gap between the pipe ends. This style of coupling is more robust in design than AS 4181 stainless steel repair clamps and are therefore suitable for joining or repairing pipes and are also compatible with higher pressure pipelines.

STRAUB couplings are suitable for all types of pipe materials including DI, AC, PVC, steel, PE, GRP and concrete. OPEN FLEX couplings incorporate a hinged body that allows for it to be used both as a pipe coupling or for repair of in-situ pipes.

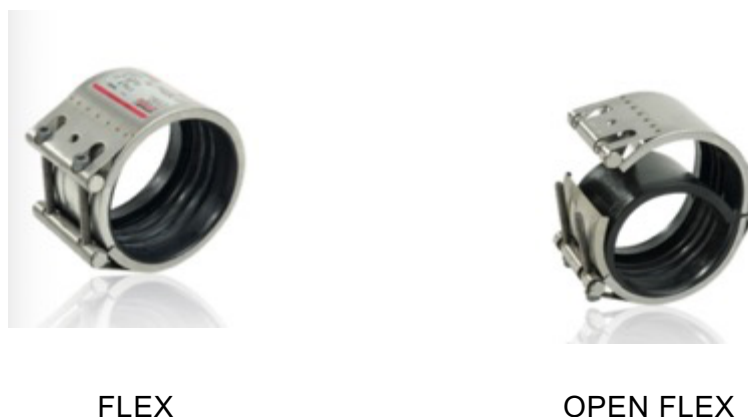


FIGURE 1 STRAUB COUPLINGS

STRAUB couplings feature a unique and patented progressive sealing effect. As the pressure in the pipe increases, so does the force on the sealing lips due to the flow through the pressure equalisation channel. The gasket is not subjected to any significant loading

because of the minimal installation torque applied. This results in continued elasticity and a long coupling life expectancy. The free space between the sealing lips serves as a “reservoir” for the gasket in the event of temperature fluctuations.

TABLE 1 STRAUB COUPLING RANGE

MODEL ID	PIPE OD mm	PIPE OD RANGE mm	COUPLING WIDTH mm	MAXIMUM AOP
STRAUB FLEX 1	48.3	47.0-50.0	75	PN25
	54.0	52.5-55.5		
	57.0	55.5-58.5		
	60.3	59.0-63.0		
	70.0	69.5-71.0	94	
	73.0	71.5-75.0		
	76.1	74.5-77.5		
	84.0	82.5-85.5		
	88.9	87.5-90.5		
	100.6	99.0-102.5		
	101.6	100.0-103.5		
	104.0	102.5-105.5		
	104.8	103.0-106.5		
	108.0	106.5-110.0		
	114.3	112.5-116.0		
	127.0	125.0-129.0	107	
	129.0	127.0-131.0		
	130.2	128.5-132.0		
	133.0	131.0-135.0		
	139.7	138.0-141.5		
	141.3	139.5-143.0		
	154.0	152.0-156.0		
	159.0	157.0-161.0		
	168.3	166.0-170.5		
STRAUB FLEX 2	172.0	169-175	138 or 141 (depending on coupling diameter and AOP)	PN10
	180.0	177-183		PN25
	200.0	197-203		
	219.1	216-223		
	250.0	247-254		
	267.0	263-278		
	273.0	269-278		
	304.0	300-309		
	323.9	320-329		
	355.6	352-360		
	406.4	403-410		
	457.2	453-462		

MODEL ID	PIPE OD mm	PIPE OD RANGE mm	COUPLING WIDTH mm	MAXIMUM AOP
	508.0	504-513		
	558.8	555-564		
	609.6	604-615		PN20
	711.2	707-717		
	762.0	756-768		PN16
	812.8	807-819		
	914.4	908-920		
	1016.0	1010-1022		PN10
	1117.6	1112-1124		
	1219.2	1213-1226		

Available pressure ratings are PN2.5, PN6, PN10, PN16, PN20 and PN25 up to the maximum nominated AOP

4 SCOPE OF THE APPRAISAL

The scope of this appraisal includes STRAUB FLEX and STRAUB OPEN FLEX stainless steel flexible unrestrained couplings in sizes from DN 40 to DN 1200 with pressure ratings from PN2.5 to PN25. See Table 1 for details.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts stainless steel flexible couplings manufactured to meet the requirements of WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints* with testing completed in accordance with the principles of ASTM F 1476:07 (2019) *Standard specification for performance of gasketed mechanical couplings for use in piping applications*.

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.

5.2 Performance Requirements

STRAUB stainless steel flexible couplings have been appraised for compliance with WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints*.

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 relevant to this application:

WSA PS - 285 *Flexible stainless-steel couplings, restrained and non-restrained joints*.

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

Vinidex has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. QEC0570 issued to Vinidex Pty Ltd by Intertek SAI Global.

- ISO 9001:2015 Certificate of Registration No. CH19031592 issued to Straub Werke AG by Bureau Veritas.

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

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

6.2 Compliance with Performance Requirements

6.2.1 Material requirements

6.2.1.1 *Stainless steel*

The casing and other components of the coupling, including the fasteners, are manufactured from Grade 316L stainless steel. Vinidex has submitted a copy of a recent typical material test report to demonstrate compliance. The fasteners are designated as A4-80. An anti-seize compound is applied to the mating surfaces.

6.2.1.2 *Elastomeric seals*

The elastomeric sealing sleeves are manufactured from EPDM 812 material by Ein Shemer Rubber Ltd, Israel. Vinidex has submitted a copy of a test report No. 221001975-2 undertaken by MPA NRW (Dakks Accreditation) to demonstrate conformance of the EPDM-812 material with EN 681.1.

6.2.2 Design parameters

Design parameters of the couplings are detailed in Table 2.

TABLE 2 DESIGN PARAMETERS

Pipe OD	Maximum diameter difference mm	Maximum angular deflection degrees	Maximum misalignment mm
48.3 to 60.3	9	5	Lesser of 1% of the pipe diameter and 3mm
66.0 to 200.0		4	
219.1 to 558.8		2	
609.6 to 1229.0		1	

6.2.3 Type tests

Type tests have been completed for couplings for pipe ODs of 60.3mm (PN 25), 323.9mm (PN25) and 820mm (PN16) to demonstrate compliance with the requirements of WSA PS-285 and ASTM F 1476:07 (2019) for Type II Class 3 coupling.

WSA PS-285 nominates that tests completed for one size from the range DN 50 to DN 300, DN 375 to DN 750 and DN 800 to DN 1200 will qualify all sizes within the nominated range, up to the PN rating tested, provided the design principles of the couplings are the same.

The tests were undertaken at the STRAUB Werke AG Wangs manufacturing facility and witnessed by DNV. The tests included:

- Positive hydrostatic pressure test at 1.5 times AOP for 10 minutes.
- Negative internal pressure (infiltration) test at -80kPa to -85kPa for 5 minutes.

- Hydrostatic test at AOP for 10 minutes with maximum angular deflection.

6.2.4 Contact with drinking water

Vinindex has submitted test report No. ABH47314 dated 9th April 2024 from Eurofins ams (NATA Accreditation No. 15773) to demonstrate that the STRAUB couplings containing the EPDM sealing sleeve conform with the requirements of AS/NZS 4020:2018.

Note: The only material in contact with water is the EPDM material.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Installation instructions for STRAUB FLEX and STRAUB OPEN-FLEX couplings are included in Appendix A.

8 PRODUCT MARKING

The STRAUB couplings have the following markings on an adhesive label fixed to the body of the pipe coupling.

- Manufacturers name: STRAUB
- Item number: e.g. 20826
- Nominal pipe diameter e.g. 104.8
- Coupling type: e.g. Flex 1
- Material class: e.g. W5
- Sealing material: e.g. EPDM
- Pressure Classification: e.g. PN16
- Axial restraint capability: e.g. non-pull-out resistant
- Serial number for traceability: e.g. 069044050112
- Bolting torque: e.g. 12 Nm

See Figure 2 for an example.

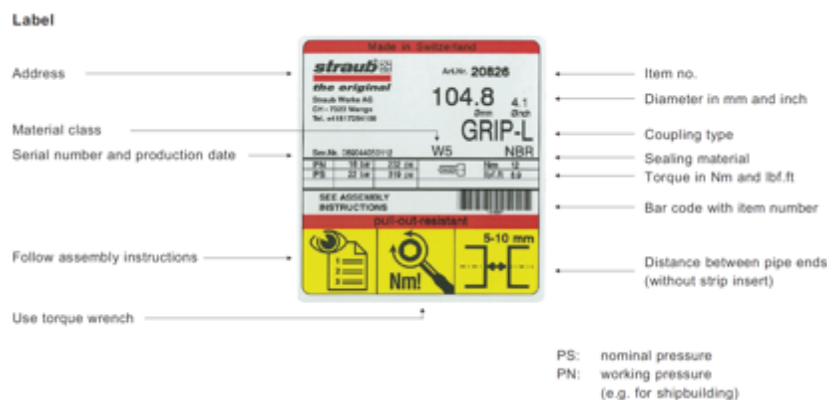


FIGURE 2 EXAMPLE OF MARKING

Note: WSAA advises that paper or plastic identification stickers on stainless steel components for buried applications in clay soils is not recommended as crevice corrosion may occur.

9 PACKAGING AND TRANSPORTATION

STRAUB couplings are packaged in cardboard cartons designed to prevent damage from handling or transport vibrations. The quantity of clamps per carton is dependent on the product size and weight.

See Figure 3 for an example.



FIGURE 3 EXAMPLE OF PACKAGING

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 Vinidex warranty is included in their terms and conditions of sale.

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

STRAUB FLEX and STRAUB OPEN FLEX stainless steel couplings have been used by the Australian water industry since the early 2000's with multiple water agency approvals in place.

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

No queries were raised.

13 FUTURE WORKS

No future works have been identified.

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, 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).

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

A comprehensive catalogue is available at the following link:

<https://www.vinidex.com.au/app/uploads/2026/02/STRAUB-Technical-Manual-2026.pdf>

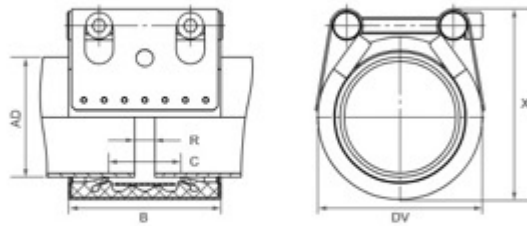
Other product information is also available at the following link:

<https://www.vinidex.com.au/products/mechanical-couplings-clamps/straub-mechanical-couplings/>



STRAUB-FLEX 1

ø 26.9 - 168.3 mm



Components Materials	W1	W2	W5
Casing	-	1.4404 or equivalent	1.4404 or equivalent
Locking bolts	-	1.7220	A4 - 80
Bolt	-	1.0737, galvanised	1.4404 or equivalent
Strip insert (stainless steel insert included)	-	1.4404 or equivalent / PVDF	1.4404 or equivalent / PVDF

EPDM	-20°C to +100°C - all qualities of water, waste water, air, solids and chemical products
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NBR	-20°C to +80°C - water, gases, oils, combustibles, fuels and other hydrocarbons
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FPM/FKM	-20°C to +180°C - ozone, oxygen, acids, gases, oils and fuels (only with strip insert)
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OD [mm]	Clamping range [mm]	PN [bar]	PN [bar]	B [mm]	C [mm]	DV [mm]	X [mm]	R [mm]	Torque rate [Nm]
26.9	26.4 - 27.4	25	-	46.5/75	18	44	56	5 - 10	10
28.0	27.5 - 28.5	25	-	46.5/75	18	45	57	5 - 10	10
30.0	29.5 - 30.5	25	-	46.5/75	18	47	60	5 - 10	10
33.7	33.2 - 34.2	25	-	46.5/75	18	51	65	5 - 10	10
35.0	34.5 - 35.5	25	-	46.5/75	18	52	66	5 - 10	10
38.0	37.5 - 38.5	25	-	46.5/75	18	55	69	5 - 10	12
40.0	38.7 - 41.2	25	-	46.5/75	18	57	71	5 - 10	12
42.4	41.9 - 42.9	25	-	46.5/75	18	60	74	5 - 10	12
44.5	44.0 - 45.0	25	-	46.5/75	18	62	76	5 - 10	12
48.3*	47.0 - 51.0	25	16	75	35	70	83	5 - 15	7.5
54.0*	52.0 - 56.0	25	16	75	35	76	88	5 - 15	7.5
57.0*	55.0 - 59.0	25	16	75	35	79	94	5 - 15	7.5
60.3	59.0 - 61.5	25	16	75	35	82	95	5 - 15	15
70.0	69.5 - 71.0	25	16	94	51	95	112	5 - 25	7.5
73.0	71.0 - 76.0	25	16	94	51	95	112	5 - 25	7.5
76.1	74.0 - 78.0	25	16	94	51	98	119	5 - 25	7.5
80.0	79.5 - 82.0	25	16	94	51	106	127	5 - 25	7.5
84.0	82.0 - 86.0	25	16	94	51	106	127	5 - 25	7.5
88.9	87.0 - 91.0	25	16	94	51	111	132	5 - 25	7.5
100.6	98.0 - 104.0	25	16	94	51	123	145	5 - 25	7.5
101.6	99.0 - 105.0	25	16	94	51	124	145	5 - 25	7.5
104.0	102.0 - 106.0	20	16	94	51	126	146	5 - 25	7.5
104.8	102.0 - 108.0	20	16	94	51	127	146	5 - 25	7.5
108.0	106.0 - 111.0	20	16	94	51	130	151	5 - 25	7.5
114.3	111.0 - 117.0	20	16	94	51	136	160	5 - 25	7.5
127.0	124.0 - 130.0	20	16	107	62	149	168	5 - 35	10
129.0	126.0 - 132.0	20	16	107	62	151	170	5 - 35	10
130.2	128.0 - 133.0	20	16	107	62	152	170	5 - 35	10
133.0	130.0 - 136.0	16	16	107	62	155	174	5 - 35	10
139.7	137.0 - 143.0	16	16	107	62	162	180	5 - 35	10
141.3	139.0 - 144.0	16	16	107	62	163	182	5 - 35	10
154.0	151.0 - 157.0	16	16	107	62	176	198	5 - 35	10
159.0	156.0 - 162.0	16	16	107	62	181	203	5 - 35	10
168.3	165.0 - 172.0	16	16	107	62	190	212	5 - 35	10

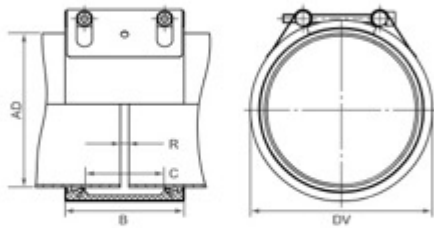
Notes:

- Follow the assembly instructions
- PN () = working pressure considering the application loads
- Test pressure = PN () x 1.5 (e.g. industry, water supply, etc.)
- PN () = approval-related nominal pressure includes 4 times safety factor (e.g. shipbuilding)
- Additional sealing materials and pressure and temperature ranges on request

* FPM/FKM only available as STRAUB-OPEN-FLEX

STRAUB-FLEX 2

ø 172.0 - 2032.0 mm



- B | 138 to 148 mm
- DV | OD + 27 mm
- C | 91 mm
- R without strip insert | 5 - 10 mm
- R with strip insert | 5 - 35 mm

Components Materials	W1	W2 (marked with *)	W5
Casing	1.0976, hot-dip galvanised	1.4404 or equivalent	1.4404 or equivalent
Locking bolts	1.7220	1.7220	A4 - 80
Bolt	1.0737, galvanised	1.0737, galvanised	1.4404 or equivalent
Strip insert (optional)	1.4404 or equivalent / HDPE	1.4404 or equivalent / HDPE	1.4404 or equivalent / HDPE

EPDM -20°C to +100°C - all qualities of water, waste water, air, solids and chemical products	NBR -20°C to +80°C - water, gases, oils, combustibles, fuels and other hydrocarbons	FPM/FKM -20°C to +180°C - ozone, oxygen, acids, gases, oils and fuels (only with strip insert)
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OD [mm]	Clamping range [mm]	PN							PN							PN
		1	2.5	6	10	16	20	25	1	2.5	6	10	16	20	25	
172.0	169 - 175	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	-	-	Pressure rates according to type approval
180.0	177 - 183	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
200.0	197 - 203	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
219.1	216 - 223	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
250.0	247 - 254	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
267.0	263 - 272	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
273.0	269 - 278	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
304.0	300 - 309	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	PN 6*	PN 10*	⇒	PN 20	PN 25	
323.9	320 - 329	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	PN 6*	PN 10*	⇒	PN 20	PN 25	
355.6	352 - 360	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	PN 6*	PN 10*	PN 16*	⇒	PN 25	
406.4	403 - 410	⇒	⇒	⇒	⇒	⇒	PN 20	PN 25	⇒	⇒	PN 6*	PN 10*	PN 16*	⇒	PN 25	
457.2	453 - 462	⇒	⇒	⇒	⇒	PN 20	PN 25		⇒	⇒	PN 6*	PN 10*	⇒	⇒	PN 25	
508.0	504 - 513	⇒	⇒	⇒	⇒	PN 16	⇒	PN 25	⇒	⇒	PN 6*	PN 10*	⇒	⇒	PN 25	
558.8	555 - 564	⇒	⇒	⇒	⇒	PN 16	⇒	PN 25	⇒	PN 2.5*	PN 6*	PN 10*	⇒	PN 20*	-	
609.6	604 - 615	⇒	⇒	⇒	⇒	PN 16	⇒	PN 25	⇒	PN 2.5*	PN 6*	PN 10*	⇒	PN 20*	-	
711.2	707 - 717	⇒	⇒	⇒	PN 10	⇒	⇒	PN 25	⇒	PN 2.5*	PN 6*	PN 10*	PN 16	-	-	
762.0	756 - 768	⇒	⇒	⇒	PN 10	⇒	⇒	PN 25	⇒	PN 2.5*	PN 6*	⇒	PN 16	-	-	
812.8	807 - 819	⇒	⇒	⇒	PN 10	⇒	PN 20	-	⇒	PN 2.5*	PN 6*	⇒	PN 16	-	-	
914.4	908 - 920	⇒	⇒	⇒	PN 10	⇒	PN 20	-	⇒	PN 2.5*	PN 6*	PN 10	-	-	-	
1016.0	1010 - 1022	⇒	⇒	⇒	PN 10	⇒	PN 20	-	⇒	PN 2.5*	PN 6*	PN 10	-	-	-	
1117.6	1112 - 1124	⇒	⇒	PN 6	⇒	PN 16	-	-	⇒	PN 2.5*	PN 6*	PN 10	-	-	-	
1219.2	1213 - 1226	⇒	⇒	PN 6	⇒	PN 16	-	-	⇒	PN 2.5*	PN 6*	PN 10	-	-	-	
1320.8	1314 - 1328	⇒	⇒	PN 6	⇒	PN 16	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1422.4	1416 - 1429	⇒	⇒	PN 6	⇒	PN 16	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1524.0	1517 - 1532	⇒	⇒	PN 6	PN 10	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1600.0	1593 - 1608	⇒	⇒	PN 6	PN 10	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1625.6	1619 - 1634	⇒	⇒	PN 6	PN 10	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1727.2	1720 - 1735	⇒	⇒	PN 6	PN 10	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1828.8	1822 - 1837	⇒	⇒	PN 6	PN 10	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
1930.4	1923 - 1938	⇒	⇒	PN 10	-	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	
2032.0	2025 - 2040	⇒	⇒	PN 10	-	-	-	-	⇒	PN 2.5*	PN 6	-	-	-	-	

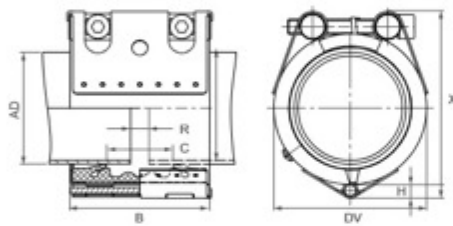
Infinitely variable intermediate sizes available | Larger diameters are available as STRAUB-OPEN-FLEX

Notes:

- Follow the assembly instructions
- PN () = working pressure considering the application loads
- Test pressure = PN () x 1.5 (e.g. industry, water supply, etc.)
- PN () = approval-related nominal pressure includes 4 times safety factor (e.g. shipbuilding)
- Strip inserts are optional accessories → page 88
- Additional sealing materials and pressure and temperature ranges on request

STRAUB-OPEN-FLEX 1

ø 48.3 - 168.3 mm



Height H
[mm]

- ø 48.3 - 60.3 | 70 mm
- ø 73.0 - 114.3 | 90 mm
- ø 127.0 - 168.3 | 95 mm

Components Materials	W1	W2	W3
Casing	-	1.4404 or equivalent	1.4404 or equivalent
Locking bolts	-	1.7220	A4 - B0
Bolt	-	1.0737, galvanised	1.4404 / 1.4435
Strip insert (optional)	-	1.4404 or equivalent / PVDF	1.4404 or equivalent / PVDF

EPDM -20°C to +100°C - all qualities of water, waste water, air, solids and chemical products	NBR -20°C to +80°C - water, gases, oils, combustibles, fuels and other hydrocarbons	FPM/FKM -20°C to +180°C - ozone, oxygen, acids, gases, oils and fuels (only with strip insert)
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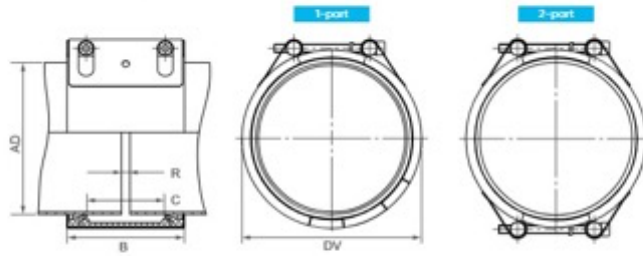
OD [mm]	Clamping range [mm]	PN [bar]	PN [bar]	B [mm]	C [mm]	DV [mm]	X [mm]	R without strip insert [mm]	R with strip insert [mm]	Torque rate [Nm]
48.3	47.0 - 50.0	25	16	75	35	70	89	5	5 - 15	7.5
54.0	52.5 - 55.5	25	16	75	35	76	94	5	5 - 15	7.5
57.0	55.5 - 58.5	25	16	75	35	79	97	5	5 - 15	7.5
60.3	59.0 - 63.0	25	16	75	35	82	101	5	5 - 15	7.5
73.0	71.5 - 75.0	25	16	94	51	95	119	5	5 - 25	10
76.1	74.5 - 77.5	25	16	94	51	98	123	5	5 - 25	10
84.0	82.5 - 85.5	25	16	94	51	106	131	5	5 - 25	10
88.9	87.5 - 90.5	25	16	94	51	111	136	5	5 - 25	10
100.6	99.0 - 102.5	25	16	94	51	123	148	5	5 - 25	10
101.6	100.0 - 103.5	25	16	94	51	124	148	5	5 - 25	10
104.0	102.5 - 105.5	20	16	94	51	126	152	5	5 - 25	10
104.8	103.0 - 106.5	20	16	94	51	127	152	5	5 - 25	10
108.0	106.5 - 110.0	20	16	94	51	130	156	5	5 - 25	10
114.3	112.5 - 116.0	20	16	94	51	136	162	5	5 - 25	10
118.0	116.0 - 120.0	20	16	94	51	140	166	5	5 - 25	10
127.0	125.0 - 129.0	20	16	107	62	149	179	5	5 - 35	12
129.0	127.0 - 131.0	20	16	107	62	151	181	5	5 - 35	12
130.2	128.5 - 132.0	20	16	107	62	152	181	5	5 - 35	12
133.0	131.0 - 135.0	16	16	107	62	155	189	5	5 - 35	12
139.7	138.0 - 141.5	16	16	107	62	162	192	5	5 - 35	12
141.3	139.5 - 143.0	16	16	107	62	163	192	5	5 - 35	12
154.0	152.0 - 156.0	16	16	107	62	176	207	5	5 - 35	12
159.0	157.0 - 161.0	16	16	107	62	181	212	5	5 - 35	12
168.3	166.0 - 170.5	16	16	107	62	190	225	5	5 - 35	12
168.3	165.0 - 172.0	16	16	107	62	190	212	5	5 - 35	10

Notes:

- Follow the assembly instructions
- PN () = working pressure considering the application loads
- Test pressure = PN () x 1.5 (e.g. industry, water supply, etc.)
- PN () = approval-related nominal pressure includes 4-fold safety factor (e.g. shipbuilding)
- Strip inserts are optional accessories → page 88
- Additional sealing materials and pressure and temperature ranges on request
- Assembly tool is required for correct assembly (reusable) → page 91

STRAUB-OPEN-FLEX 2

ø 172.0 - 2032.0 mm



- B | 138 to 148 mm
- DV | OD + 27 mm
- C | 91 mm
- R without strip insert | 5 - 10 mm
- R with strip insert | 5 - 35 mm

Version

PN1 2.5	PN 6	PN 10	PN 16	PN 20 25	1-part	2-part
< 12/91	-	-	-	-	-	x
> 12/91	-	-	-	-	-	x
< 636.0	-	-	-	-	-	x
> 636.0	-	-	-	-	-	x
< 355.6	-	-	-	-	-	x
> 355.6	-	-	-	-	-	x
< 250.0	-	-	-	-	-	x
> 250.0	-	-	-	-	-	x
-	-	-	-	-	-	x

* only on request

Components Materials	W1	W2 (marked with *)	W5
Casing	1.0976, hot-dip galvanised	1.4404 or equivalent	1.4404 or equivalent
Locking bolts	1.7220	1.7220	A4 - 80
Bolt	1.0737, galvanised	1.0737, galvanised	1.4404 or equivalent
Strip insert (optional)	1.4404 or equivalent / HDPE	1.4404 or equivalent / HDPE	1.4404 or equivalent / HDPE

EPDM

- -20°C to +100°C
- all qualities of water, waste water, air, solids and chemical products

NBR

- -20°C to +80°C
- water, gases, oils, combustibles, fuels and other hydrocarbons

FPM/FKM

- -20°C to +180°C
- ozone, oxygen, acids, gases, oils and fuels (only with strip insert)

OD	Clamping range 2-part	W1	PN							W5	PN							PN
[mm]	[mm]		1	2.5	6	10	16	20	25		1	2.5	6	10	16	20	25	
172.0	169 - 175	C	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	-	-		
180.0	177 - 183		-	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
200.0	197 - 203		-	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
219.1	216 - 223		-	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
250.0	247 - 254		-	-	-	-	-	-	-	-	⇒	⇒	⇒	PN 10*	PN 16*	⇒	PN 25	
267.0	263 - 272		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 10*	⇒	⇒	PN 25	
273.0	269 - 278		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 10*	⇒	⇒	PN 25	
304.0	300 - 309		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 6*	PN 10*	⇒	PN 20*	
323.9	320 - 329		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 6*	PN 10*	⇒	PN 20*	
355.6	352 - 360		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 25	⇒	⇒	⇒	PN 6*	PN 10*	⇒	PN 25	
406.4	403 - 410		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 20	⇒	⇒	⇒	PN 6*	⇒	PN 16*	⇒	
457.2	453 - 462		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 20	⇒	⇒	⇒	PN 6*	PN 10*	⇒	PN 25	
508.0	504 - 513		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 15	⇒	⇒	⇒	PN 6*	PN 10*	⇒	PN 25	
558.8	555 - 564		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 15	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 20	
609.6	604 - 615		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 15	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 20	
711.2	707 - 717		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 10	⇒	⇒	⇒	PN 2.5*	⇒	PN 10*	⇒	
762.0	756 - 768		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 10	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 16	
812.8	807 - 819		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 10	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 16	
914.4	908 - 920		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 10	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 10	
1016.0	1010 - 1022		⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 10	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 10	
1117.6	1112 - 1124	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 10		
1219.2	1213 - 1226	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6*	⇒	PN 10		
1320.8	1314 - 1328	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1422.4	1416 - 1429	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1524.0	1517 - 1532	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1600.0	1593 - 1608	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1625.6	1619 - 1634	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1727.2	1720 - 1735	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1828.8	1822 - 1837	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 6	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
1930.4	1923 - 1938	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 2.5	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		
2032.0	2025 - 2040	⇒	⇒	⇒	⇒	⇒	⇒	⇒	PN 2.5	⇒	⇒	⇒	PN 2.5*	PN 6	⇒	PN 10		

Pressure rates according to type approval

Infinitely variable intermediate sizes available

Notes:

- Follow the assembly instructions
- PN () = working pressure considering the application loads
- Test pressure = PN () x 1.5 (e.g. industry, water supply, etc.)
- PN () = approval-related nominal pressure includes 4-fold safety factor (e.g. shipbuilding)
- Strip inserts are optional accessories → page 88
- Additional sealing materials and pressure and temperature ranges on request
- The clamping range of 1-part STRAUB-OPEN-FLEX and STRAUB-FLEX components is identical

Joining Instructions

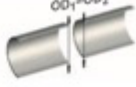
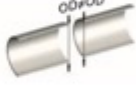
Straub Mechanical Fittings

Vinidex
by aliaxis



Fitting / Disassembly Instructions

Please note complete fitting instructions for each type of coupling

	Preparation Deburr and remove sharp edges from pipe ends. Clean the pipe surface of impurities (bad coating) → No loose matter under sealing lips.		
	Mark half-width of pipe coupling on both pipe ends as fitting guide		
	Remove plastic packing straps and fit the pipe coupling over the pipe end • Do not dismantle the pipe joint • Do not drop the pipe joint		
Pipe alignment			
	Setting gap between pipe ends A space between pipe ends can arise through misalignment, inaccurate assembly or changes in length. STRAUB couplings can bridge spaces between pipe ends; please note the R value given in the technical datasheets (strip inserts see page 43).		
	Axial movement ΔL STRAUB-FLEX and STRAUB-OPEN-FLEX couplings act as expansion joints within stated limits	Max. axial movement STRAUB-Type	mm ΔL
		FLEX 1 / OPEN-FLEX 1	5
		FLEX 2 / OPEN-FLEX 2	10
		FLEX 3 / OPEN-FLEX 3	15
		FLEX 3.5 / OPEN-FLEX 3.5	15
		FLEX 4 / OPEN-FLEX 4	20
	Clamping range Connecting two pipes with equal outside diameter (see also datasheets)		
	Outside diameter difference Up to $\varnothing 100$ mm → 2 mm From $\varnothing 100$ mm → 2 % From $\varnothing 300$ mm → 6 mm		
Do not work beyond limits or add them together! Limits are for static loads and radially rigid pipes only. For dynamic forces like pressure surges and thrust, apply a safety factor (contact your local partner or the manufacturer).			

Jointing Instructions

Straub Mechanical Fittings

Vinidex
by aliaxis

	Bolting Adjust pipe coupling then tighten bolts lightly and alternately with a ratched wrench or power wrench
	Do not rotate pipe coupling on the pipe once teeth are engaged
	Tighten the locking bolts with a torque wrench to the final prescribed torque rate engraved on the pipe coupling's outer surface; the torque wrench must be set accordingly
	Failure prevention: Do not tighten bolts above prescribed torque rate. Trouble shooting: In case of leakage, clean pipe and sealing lips surface before installing pipe coupling again. Detachable and reusable (see disassembly instruction).
	Safety measures before removing pipe joint Verify that there is no pressure inside the coupling. Discharge the pipeline. Protect yourself against the medium. Make sure that the pipes are not held by the coupling.
	Disassembly Loosen bolts alternately but do not remove completely. Do not rotate pipe coupling on pipe as long as teeth are engaged.
	Loosen teeth engagement (applicable for GRIP couplings only) Insert tool underneath casing and lift. Caution - Do not harm sealing sleeve!
	Remove pipe joint Slide pipe coupling to the side. Caution! Sealing lip may touch pipe end. Turn and move pipe joint smoothly. Clean pipe coupling and relubricate bolts with an appropriate lubricant before refitting.
	Caution Pipe couplings can not take shearing forces (see installation consideration). STRAUB pipe couplings are maintenance-free, i.e. never retighten bolts; contact factory for minimum wall thickness of pipe.
	Additional corrosion protection (see page 57): If risk of corrosion exists, for long term pipe coupling protection use shrink sleeves or protection tapes. This is especially necessary where couplings are used underground.

For further information, please refer to the Straub Technical Manual.

P 13 11 69 | sales@vinidex.com.au | www.vinidex.com.au

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VIN344B
20190618

APPENDIX B - QUALITY CERTIFICATIONS

A copy of the following quality certificates are also available from WSAA.

TABLE B1 VINIDEX PTY LTD – MANAGEMENT SYSTEMS

26 College Street Darlinghurst NSW	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	QEC 0570
Certifying Agency	Intertek SAI Global
First Date of Certification	19 February 1991
Current Date of Certification	28 June 2024
Expiry Date of Certification	21 November 2026

TABLE B2 STRAUB WERKE AG – MANAGEMENT SYSTEMS

Straubstrasse 13 7323 Wangs Switzerland	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	CH19031592
Certifying Agency	Bureau Veritas
First Date of Certification	21 August 1995
Current Date of Certification	22 December 2023
Expiry Date of Certification	21 December 2026

CERTIFICATE OF REGISTRATION

This is to certify that:

Vinidex Pty Ltd

ABN 42 000 664 942

Level 4 26 College Street Darlinghurst NSW 2010 AUSTRALIA
(Refer to Attachment to Certificate of Registration dated 1 July 2024 for additional certified sites)

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2015

for the following scope

The design, manufacture and distribution of polyethylene, polypropylene, modified PVC, oriented PVC and unplasticised PVC pipes, conduits and associated fittings for the water supply, sewerage, drainage, electrical, mining, gas, rural and communications industries.

Certificate Number:

QEC0570

Originally Certified:

19 February 1991

Current Certification:

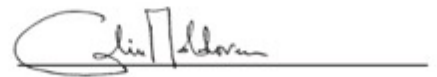
28 June 2024

Issue Date:

1 July 2024

Expiry Date:

21 November 2026



Calin Moldoveanu

President, Business Assurance

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

Registered by:

SAI Global Certification Services Pty Ltd (ACN 108 716 669) Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia with SAI Global Pty Limited Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification register at <http://register.sai-global.com/>



BUREAU VERITAS
Certification



Certificate
for

Straub Werke AG

Straubstrasse 13, 7323 Wangs / Switzerland
with subsidiaries according to appendix

Bureau Veritas Certification hereby confirms that the management system of the above-mentioned organisation has been assessed and complies with the requirements set out in the following standards/regulations.

Standards/Regulations:

SN EN ISO 9001:2015
SN EN ISO 14001:2015

The management system comprises:

Development, production, trade and sales of products and services in the pipe joining technique.

Date of initial certification :	21.08.1995 (ISO 9001, DNV) / 22.12.2008 (ISO 14001)		
	End of the last certification cycle :	21.12.2023	
Date of recertification :	10.11.2023	Start of the new certification cycle :	22.12.2023

The requirements of the standards /regulations must be continuously fulfilled throughout the validity of this certificate. This will be ensured and guaranteed through regular monitoring by Bureau Veritas Certification.

This certificate is valid until : **21.12.2026**

Bureau Veritas Certification will provide information on the validity of this certificate on request at any time. Additional information on the management system and the area of applicability should be obtained from the organisation itself.

Certificate number : **CH19031592** Version : **1** Issue date : **11.12.2023**



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Grosssicherstrasse 25, CH-8104 Weiningen ZH



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APPENDIX C - SUPPLIER CONTACTS

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