



VAwizard®

The magic connection



voestalpine Tubulars GmbH & Co KG
www.voestalpine.com/tubulars

voestalpine

ONE STEP AHEAD.



PERFORMANCE IN TUBULARS

Our world is based on high tech seamless pipes that can withstand the toughest conditions, day in, day out. We promise highest performance based on the core values customization, innovation, sustainability and responsibility.



CUSTOMIZATION



INNOVATION



SUSTAINABILITY



RESPONSIBILITY

PRODUCTION, R&D, SALES LOCATIONS AND LICENSEES



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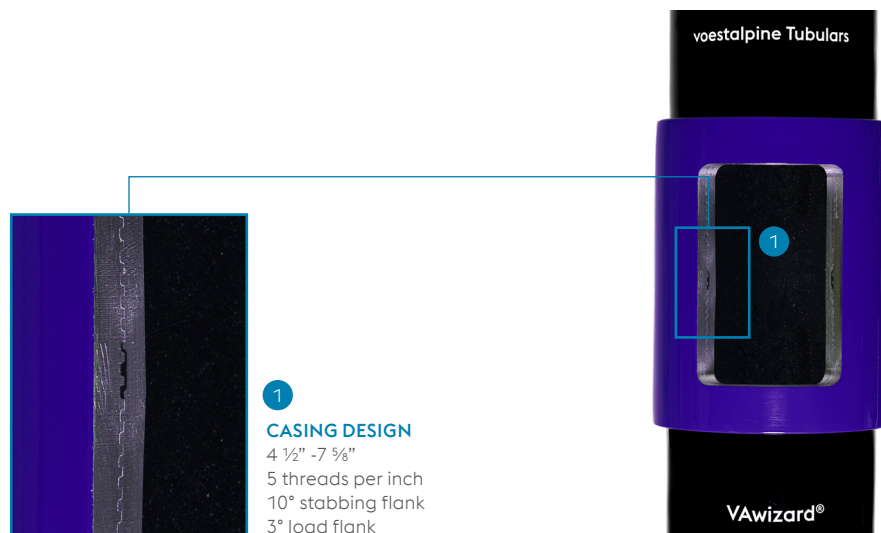


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DESIGN CHARACTERISTICS

voestalpine Tubulars Proprietary Connections like VAwizard® offer benefits which are not addressed by the API specification or exceed the API standards.



PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

LOWEST HOOP STRESS & HIGHEST YIELD TORQUE

» ENSURES WELL INTEGRITY

With its low hoop stress combined with high torque capability, VAwizard® is the connection of choice for multi-fractured horizontal wells. The connection performance is fit for purpose tested for this area of applications.

MINIMIZED RISK OF JUMP-OUT

» AVOIDS FAILURES UNDER BENDING LOADS

The connection design minimizes the risk of jump out failures under bending loads.

INTERCHANGEABLE WITH API BUTTRESS

» SAVES COSTS

VAwizard® is fully interchangeable with API Buttress, allowing greater flexibility in string design.

ROTATION DURING INSTALLATION

» IMPROVES QUALITY OF CEMENT BOND

The thread design offers the opportunity to rotate the casing string during installation. Due to the thread profile, the connection is able to handle axial loads without inducing high radial forces to pin and box.



GRADES

VAwizard® is available in API standard and proprietary grades. Also tailor-made customer specifications can be fulfilled upon request.

Our tools in manufacturing the VA series include but are not limited to

- » Steel with special chemical composition
- » Unique melting, refining and casting practices
- » Controlled processes in the pipe rolling, heat treatment, straightening and end finishing operations
- » Tighter tolerances
- » Restricted mechanical properties
- » Special testing and inspection methods

Some of the product names explain the application, e.g. deep well, sour service, low temperature.

The applications for other grades are defined as follows:

- » **VA-High Collapse-Series**
for use in high external pressure environments
- » **VA-Mild Sweet Gas-Series**
for mildly corrosive environments where – in combination with an adequate inhibition program – a higher corrosion resistance can be expected compared to regular API grades

Specified Minimum Yield Strength [psi]	Grade API Spec 5CT	HIGH COLLAPSE	ENHANCED PROPERTIES
55,000	J55		
	K55		
75,000			
80,000	N80-Q	VA-HC-N80-Q	VA-EP-N80-Q
	L80-1	VA-HC-L80-1	VA-EP-L80-1
	L80-13Cr		
90,000	C90-1	VA-HC-C90-1	VA-EP-C90-1
95,000	R95	VA-HC-R95	VA-EP-R95
	T95-1	VA-HC-T95-1	VA-EP-T95-1
110,000	C110	VA-HC-C110	VA-EP-C110
	P110	VA-HC-P110	VA-EP-P110
125,000	Q125-1	VA-HC-Q125-1	VA-EP-Q125-1
140,000			
150,000			

On request in combination with:



PROPRIETARY GRADES – THE VA SERIES

EXTREME PROPERTIES	SOUR SERVICE			DEEP WELL		LOW TEMPERATURE	MILD SWEET GAS	MILD SWEET GAS	SWEET GAS
		with High Collapse	with Enhanced Properties		with High Collapse		Ferrite Pearlite	Quenched & Tempered	
						VA-LT-J55	VA-FP-55-1CR		
						VA-LT-K55			
							VA-FP-75-1CR		
VA-XP-N80-Q						VA-LT-N80-Q	VA-FP-80-1CR	VA-N80-Q-1CR/ VA-N80-Q-3CR	
VA-XP-L80-1						VA-LT-L80-1		VA-L80-1-1CR/ VA-L80-1-3CR	
	VA-SS-80	VA-SS-80-HC	VA-SS-80-EP						
VA-XP-C90-1						VA-LT-C90-1			
	VA-SS-90	VA-SS-90-HC	VA-SS-90-EP						
VA-XP-R95						VA-LT-R95		VA-R95-1CR/ VA-R95-3CR	
VA-XP-T95-1						VA-LT-T95-1			
	VA-SS-95	VA-SS-95-HC	VA-SS-95-EP						VA-95-13CR
						VA-LT-C110			
	VA-SS-110	VA-SS-110-HC	VA-SS-110-EP						
	VA-S-110	VA-S-110-HC	VA-S-110-EP						
VA-XP-P110						VA-LT-P110		VA-P110-1CR/ VA-P110-3CR	
VA-XP-Q125-1						VA-LT-Q125-1			
	VA-S-125	VA-S-125-HC	VA-S-125-EP	VA-D-125	VA-D-125-HC				
				VA-D-140	VA-D-140-HC				
				VA-D-150	VA-D-150-HC				

LOW TEMPERATURE

EP/XP

EP/XP

HC

DIMENSIONS

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		INSIDE DIAMETER		DRIFT DIAMETER		
inch	mm	lb/ft	kg/m	inch	mm	inch	mm	inch	mm	
4 ½	114.30	11.60	17.46	0.250	6.35	4.000	101.60	3.875	98.42	
		12.60	18.78	0.271	6.88	3.958	100.54	3.833	97.36	
		13.50	19.99	0.290	7.37	3.920	99.56	3.794	96.38	
		15.10	22.88	0.337	8.56	3.826	97.18	3.701	94.00	
5 ½	139.70	17.00	25.88	0.304	7.72	4.892	124.26	4.767	121.08	
		20.00	30.27	0.361	9.17	4.778	121.36	4.653	118.19	
		23.00	34.33	0.415	10.54	4.670	118.62	4.545	115.44	
		26.00	39.04	0.476	12.09	4.548	115.52	4.423	112.34	

	COUPLING LENGTH		COUPLING OUTSIDE DIAMETER		VOLUME				MAKE UP LOSS	
					DISPLACEMENT		PRODUCTION			
	inch	mm	inch	mm	us gal/ft	lit/m	us gal/ft	lit/m	inch	mm
	7.520	191.00	5.250	133.35	0.832	10.33	0.653	8.11	3.652	92.75
	7.520	191.00	5.250	133.35	0.832	10.33	0.639	7.94	3.652	92.75
	7.520	191.00	5.250	133.35	0.832	10.33	0.627	7.79	3.652	92.75
	7.520	191.00	5.250	133.35	0.832	10.33	0.597	7.42	3.652	92.75
	7.913	201.00	6.300	160.02	1.242	15.42	0.977	12.13	3.848	97.75
	7.913	201.00	6.300	160.02	1.242	15.42	0.932	11.57	3.848	97.75
	7.913	201.00	6.300	160.02	1.242	15.42	0.890	11.05	3.848	97.75
	7.913	201.00	6.535	166.00	1.244	15.45	0.844	10.48	3.848	97.75

VAwizard® accessories are available on request.

The values shown are based on T&C pipe lengths of L = 10.0 m (32.81 ft). Other dimensions and 20° beveled couplings available on request.

Blanking dimensions for accessories are available as a download on our web page www.voestalpine.com/tubulars

PERFORMANCE PROPERTIES

(METRIC UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 80							
						P _i	P _c	S _y	S _u	L	B	T _y	
inch	mm	lb/ft	kg/m	inch	mm	MPa	MPa	kN	kN	kN	°/30.48m	Nm	
4 ½	114.30	11.60	17.46	0.250	6.35	53.70	43.80	1190	1290	1470	72	10900	
		12.60	18.78	0.271	6.88	58.10	51.70	1280	1390	1470		12100	
		13.50	19.99	0.290	7.37	62.30	58.90	1370	1490	1470		13300	
		15.10	22.88	0.337	8.56	72.30	76.40	1570	1710	1470		16000	
5 ½	139.70	17.00	25.88	0.304	7.72	53.40	43.40	1770	1900	1940	59	21800	
		20.00	30.27	0.361	9.17	63.40	60.90	2080	2240	1940		26800	
		23.00	34.33	0.415	10.54	72.90	77.00	2360	2540	1940		31500	
		26.00	39.04	0.476	12.09	83.60	87.20	2680	2880	2780		36900	

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 110							
						P _i	P _c	S _y	S _u	L	B	T _y	
inch	mm	lb/ft	kg/m	inch	mm	MPa	MPa	kN	kN	kN	°/30.48m	Nm	
4 ½	114.30	11.60	17.46	0.250	6.35	73.70	52.30	1630	1710	2020	81	14500	
		12.60	18.78	0.271	6.88	79.80	63.50	1760	1850	2020		16200	
		13.50	19.99	0.290	7.37	85.50	73.70	1880	1970	2020		17700	
		15.10	22.88	0.337	8.56	99.30	98.90	2160	2260	2020		21400	
5 ½	139.70	17.00	25.88	0.304	7.72	73.30	51.60	2430	2530	2670	81	28600	
		20.00	30.27	0.361	9.17	87.10	76.60	2850	2970	2670		35300	
		23.00	34.33	0.415	10.54	100.10	100.30	3240	3380	2670		41400	
		26.00	39.04	0.476	12.09	114.80	119.90	3670	3830	3820		48600	

Performance properties for proprietary and other grades or for special clearance couplings on request.

- P_i ...

internal yield pressure
- P_c ...

collapse pressure
- S_y ...

joint yield strength
- S_u ...

joint ultimate strength - API joint strength (calculation according to API 5C3)
- L ...

max. load on coupling face
- B ...

max. bending (uniaxial)
- T_y ...

connection yield torque
- Other grades on request.

	GRADE 90							GRADE 95						
	P _i	P _c	S _y	S _u	L	B	T _y	P _i	P _c	S _y	S _u	L	B	T _y
	MPa	MPa	kN	kN	kN	°/30.48m	Nm	MPa	MPa	kN	kN	kN	°/30.48m	Nm
	60.40	47.00	1340	1380	1650	81	12100	63.70	48.50	1410	1450	1740	86	12700
	65.40	56.00	1440	1480	1650		13500	69.00	58.00	1520	1560	1740		14200
	70.10	64.10	1540	1580	1650		14800	73.90	66.60	1620	1660	1740		15500
	81.40	84.30	1770	1820	1650		17900	85.80	88.00	1860	1910	1740		18800
	60.10	46.50	1990	2030	2190	66	24100	63.30	47.90	2100	2130	2300	70	25200
	71.30	66.40	2340	2380	2190		29700	75.20	69.00	2460	2510	2300		31100
	82.00	85.40	2660	2710	2190		34800	86.50	89.20	2800	2850	2300		36500
	94.10	98.20	3010	3070	3130		40900	99.20	103.60	3180	3230	3300		42800

	GRADE 125						
	P _i	P _c	S _y	S _u	L	B	T _y
	MPa	MPa	kN	kN	kN	°/30.48m	Nm
	83.80	55.20	1860	1870	2300	113	16300
	90.80	68.20	2000	2010	2300		18200
	97.30	80.00	2130	2150	2300		19900
	113.00	109.10	2450	2460	2300		24100
	83.40	54.40	2760	2760	3030	92	31900
	99.00	83.30	3240	3240	3030		39400
	113.80	110.70	3680	3680	3030		46300
	130.50	136.30	4170	4170	4340		54400

PERFORMANCE PROPERTIES

(US CUSTOMARY-UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 80							
						P _i	P _c	S _y	S _u	L	B	T _y	
inch	mm	lb/ft	kg/m	inch	mm	psi	psi	1000lb	1000lb	1000lb	°/100ft	ft.lb	
4 ½	114.30	11.60	17.46	0.250	6.35	7790	6350	267	291	330	72	8040	
		12.60	18.78	0.271	6.88	8430	7500	288	313	330		8920	
		13.50	19.99	0.290	7.37	9040	8540	307	334	330		9810	
		15.10	22.88	0.337	8.56	10490	11080	353	384	330		11800	
5 ½	139.70	17.00	25.88	0.304	7.72	7750	6290	397	428	437	59	16080	
		20.00	30.27	0.361	9.17	9200	8830	467	503	437		19770	
		23.00	34.33	0.415	10.54	10570	11160	531	572	437		23230	
		26.00	39.04	0.476	12.09	12130	12650	601	648	625		27220	

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 110							
						P _i	P _c	S _y	S _u	L	B	T _y	
inch	mm	lb/ft	kg/m	inch	mm	psi	psi	1000lb	1000lb	1000lb	°/100ft	ft.lb	
4 ½	114.30	11.60	17.46	0.250	6.35	10690	7590	367	385	454	99	10690	
		12.60	18.78	0.271	6.88	11570	9210	396	415	454		11950	
		13.50	19.99	0.290	7.37	12400	10690	422	443	454		13050	
		15.10	22.88	0.337	8.56	14400	14340	485	509	454		15780	
5 ½	139.70	17.00	25.88	0.304	7.72	10630	7480	545	568	600	81	21090	
		20.00	30.27	0.361	9.17	12630	11110	641	667	600		26040	
		23.00	34.33	0.415	10.54	14520	14540	729	759	600		30540	
		26.00	39.04	0.476	12.09	16650	17390	826	860	859		35850	

Performance properties for proprietary and other grades or for special clearance couplings on request.

- P_i ...

internal yield pressure
- P_c ...

collapse pressure
- S_y ...

joint yield strength
- S_u ...

joint ultimate strength - API joint strength (calculation according to API 5C3)
- L ...

max. load on coupling face
- B ...

max. bending (uniaxial)
- T_y ...

connection yield torque
- Other grades on request.

	GRADE 90							GRADE 95						
	P _i	P _c	S _y	S _u	L	B	T _y	P _i	P _c	S _y	S _u	L	B	T _y
	psi	psi	1000lb	1000lb	1000lb	%/100ft	ft.lb	psi	psi	1000lb	1000lb	1000lb	%/100ft	ft.lb
	8760	6820	301	309	371	81	8920	9240	7030	317	325	391	86	9370
	9490	8120	324	333	371		9960	10010	8410	342	350	391		10470
	10170	9300	346	355	371		10920	10720	9660	365	374	391		11430
	11810	12230	397	408	371		13200	12440	12760	419	429	391		13870
	8720	6740	447	456	491	66	17780	9180	6940	471	480	518	70	18590
	10340	9630	525	536	491		21910	10910	10010	554	564	518		22940
	11890	12380	597	609	491		25670	12550	12940	630	641	518		26920
	13650	14240	677	691	704		30170	14390	15030	714	726	742		31570

	GRADE 125						
	P _i	P _c	S _y	S _u	L	B	T _y
	psi	psi	1000lb	1000lb	1000lb	%/100ft	ft.lb
	12150	8010	417	420	517	113	12020
	13170	9890	450	452	517		13420
	14110	11600	480	482	517		14680
	16390	15830	551	554	517		17780
	12100	7890	620	620	682	92	23530
	14360	12080	728	728	682		29060
	16510	16050	828	828	682		34150
	18930	19760	938	938	977		40120

MAKE UP TORQUE

RECOMMENDED OPTIMUM MAKE-UP TORQUE FOR REGULAR COUPLINGS

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 80		GRADE 90		GRADE 95		GRADE 110		GRADE 125	
inch	mm	lb/ft	kg/m	inch	mm	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb
4 ½	114.30	11.60	17.46	0.250	6.35	9600	7100	10400	7650	10800	7950	11900	8800	12600	9300
		12.60	18.78	0.271	6.88	10300	7600	11100	8200	11600	8550	12800	9450	13500	9950
		13.50	19.99	0.290	7.37	11400	8400	12400	9150	12900	9500	14200	10450	15100	11150
		15.10	22.88	0.337	8.56	14000	10350	15300	11300	16000	11800	17600	13000	18700	13800
5 ½	139.70	17.00	25.88	0.304	7.72	14480	10680	15760	11620	16480	12160	18240	13450	19360	14280
		20.00	30.27	0.361	9.17	18160	13390	19840	14630	20720	15280	22960	16930	24400	18000
		23.00	34.33	0.415	10.54	21280	15700	23280	17170	24320	17940	26960	19880	28720	21180
		26.00	39.04	0.476	12.09	25680	18940	28000	20650	29280	21600	32480	23960	34640	25550

This table shows the values at printing date of this brochure. Actual values available in the Datasheet Generator on our Web Page or in the myTubulars App.

Recommended make-up-torque using a thread compound with a friction factor of 1.0.

Maximum torque: optimum + 10 %
Minimum torque: optimum – 10 %

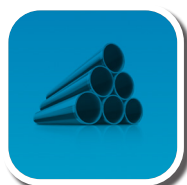
Special clearance and 20° beveled couplings have a lower load on coupling face.







SERVICES



myTubulars

myTubulars APP PRODUCT DATASHEETS, FIELD SERVICE AND LICENSEES

Generate datasheets and load envelopes containing dimension and performance data for products provided by voestalpine Tubulars with our Datasheet Generator. You can quickly and easily check the product application against field requirements in advance also on your tablet or smartphone by using the myTubulars App.

myTubulars is available for all iOS and Android devices for free in the App stores.

GET THE APP!

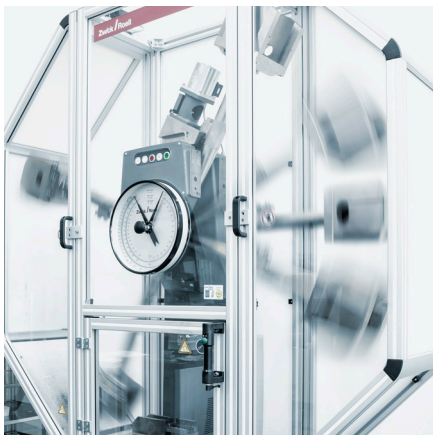


Field Service during the installation can be provided upon request. Please visit the Customer Service site on our web page www.voestalpine.com/tubulars



WHY voestalpine Tubulars?

Support from material and product selection, in-house material and product development, to final product and installation consulting from one source.



PRODUCT DEVELOPMENT



CONNECTION DEVELOPMENT



MATERIAL DEVELOPMENT



PROCESS DEVELOPMENT



TAILOR-MADE SOLUTIONS



FIELD SERVICE

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voestalpine

ONE STEP AHEAD.