



VAsuperior<sup>®</sup>

Ready to face the extremes







# 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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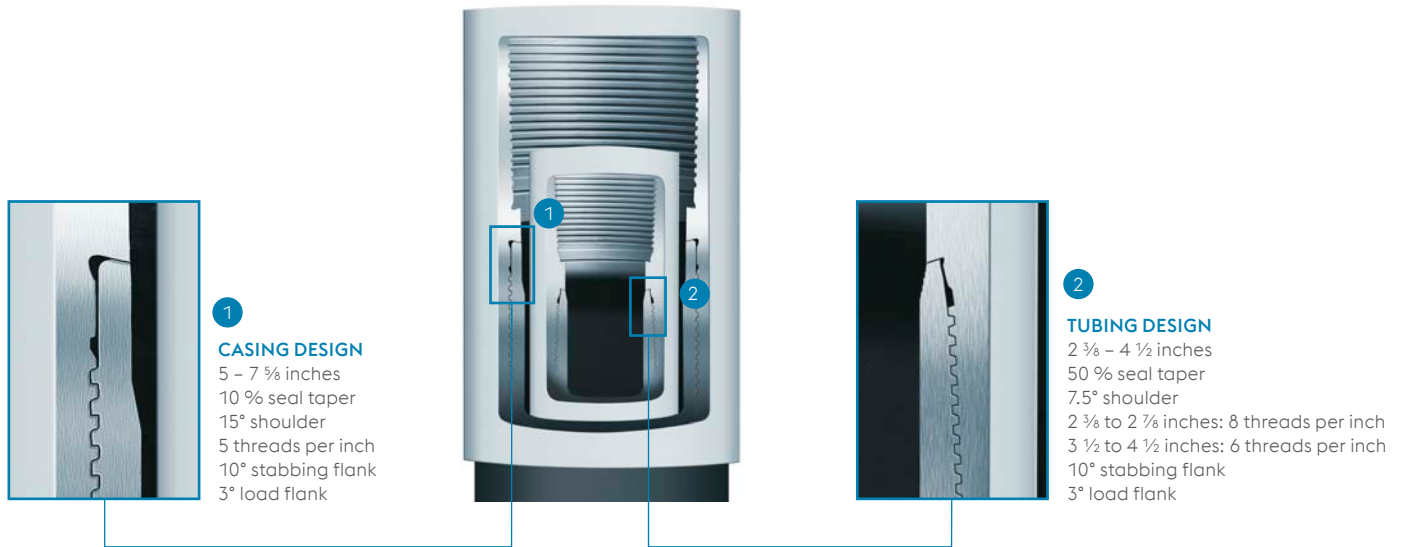
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# DESIGN CHARACTERISTICS

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



## PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

### METAL TO METAL SEAL » ENSURES WELL INTEGRITY

The robust metal to metal seal design ensures gas tightness under combined loads.

### PROTECTIVE DESIGN » PREVENTS YOU FROM UNEXPECTED COSTS

The distance from the pin face provides protection against transport, handling and installation damages.

The recess before and after the seal area is a lubricant reservoir where excess thread compound is forced to prevent a pressure build up due to trapped and compressed thread compound.

### FAST & EASY MAKE-UP » SAVES RUNNING TIME

The thread design allows easy and fast make-up in the most severe conditions.

### SMOOTH INTERNAL PROFILE » MINIMIZES TURBULENCES

The flush internal profile minimizes turbulences and provides good conditions for internal pipe coating.

### CAL IV CONNECTION » MINIMIZES RISKS

The connection design is successfully tested at CAL IV level according to ISO 13679 / API RP 5C5.





## GRADES

VAsuperior® 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
	L80-3Cr		
	L80-13Cr		
90,000	C90	VA-HC-C90	VA-EP-C90
95,000	R95	VA-HC-R95	VA-EP-R95
	T95	VA-HC-T95	VA-EP-T95
110,000	C110	VA-HC-C110	VA-EP-C110
	P110	VA-HC-P110	VA-EP-P110
125,000	Q125	VA-HC-Q125	VA-EP-Q125
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-SS-80	VA-SS-80-HC	VA-SS-80-EP						
VA-XP-C90						VA-LT-C90			
	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						VA-LT-T95			
	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-110-13CR
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
2 ½	60.32	4.60	6.69	0.190	4.83	1.995	50.66	1.901	48.29
		5.10	7.57	0.218	5.54	1.939	49.24	1.845	46.86
		5.80	8.67	0.254	6.45	1.867	47.42	1.774	45.06
2 ¾	73.02	6.40	9.29	0.217	5.51	2.441	62.00	2.348	59.64
		7.80	11.57	0.276	7.01	2.323	59.00	2.230	56.64
		8.60	12.74	0.308	7.82	2.259	57.38	2.166	55.02
3 ½	88.90	7.70	11.28	0.216	5.49	3.068	77.92	2.943	74.75
		9.20	13.29	0.254	6.45	2.992	76.00	2.867	72.82
		10.20	14.97	0.289	7.34	2.922	74.22	2.797	71.04
		12.70	18.90	0.375	9.52	2.750	69.86	2.625	66.68
		13.70	20.62	0.413	10.49	2.674	67.90	2.548	64.72
		14.30	21.28	0.430	10.92	2.640	67.06	2.515	63.88
		14.70	22.16	0.450	11.43	2.600	66.04	2.475	62.87
4	101.60	9.50	13.82	0.226	5.74	3.548	90.12	3.423	86.94
		10.70	15.86	0.262	6.65	3.476	88.30	3.351	85.12
		13.20	19.63	0.330	8.38	3.340	84.84	3.215	81.66
		15.50	23.07	0.476	12.09	2.548	64.72	2.423	61.54
4 ½	114.30	10.50	15.51	0.224	5.69	4.052	102.92	3.927	99.75
		11.60	17.18	0.250	6.35	4.000	101.60	3.875	98.43
		12.60	18.50	0.271	6.88	3.958	100.54	3.833	97.36
		13.50	19.78	0.290	7.37	3.920	99.56	3.794	96.37
		15.20	22.67	0.337	8.56	3.826	97.18	3.701	94.01
		17.00	25.32	0.380	9.65	3.740	95.00	3.615	91.82
5	127.00	18.90	27.56	0.430	10.92	3.640	92.46	3.515	89.28
		13.00	19.67	0.253	6.43	4.494	114.14	4.369	110.96
		15.00	22.71	0.296	7.52	4.408	111.96	4.283	108.78
		18.00	27.25	0.362	9.19	4.276	108.62	4.151	105.44
		21.40	32.30	0.437	11.10	4.125	104.80	4.000	101.62
		23.20	34.94	0.478	12.14	4.044	102.72	3.919	99.54
5 ½	139.70	24.10	36.35	0.500	12.70	4.000	101.60	3.875	98.42
		15.50	23.45	0.275	6.98	4.950	125.74	4.825	122.56
		17.00	25.73	0.304	7.72	4.892	124.26	4.767	121.08
		20.00	30.12	0.361	9.17	4.778	121.36	4.653	118.18
		23.00	34.17	0.415	10.54	4.670	118.62	4.545	115.44
5 ¾	146.05	26.00	38.65	0.476	12.09	4.548	115.52	4.423	112.34
		16.40	24.95	0.276	7.00	5.199	132.05	5.074	128.87
		17.90	27.21	0.303	7.70	5.144	130.65	5.019	127.47
		19.70	29.78	0.335	8.50	5.081	129.05	4.956	125.87
6 ¾	168.28	20.40	31.40	0.354	9.00	5.041	128.05	4.916	124.87
		20.00	30.11	0.288	7.32	6.050	153.66	5.924	150.48
		24.00	36.19	0.352	8.94	5.922	150.42	5.797	147.24
		28.00	42.24	0.417	10.59	5.792	147.12	5.667	143.94
7	177.80	32.00	47.52	0.475	12.06	5.676	144.18	5.551	141.00
		23.00	34.68	0.317	8.05	6.366	161.70	6.241	158.52
		26.00	39.20	0.362	9.19	6.276	159.42	6.151	156.24
		29.00	43.77	0.408	10.36	6.184	157.08	6.059	153.90
		32.00	48.19	0.453	11.51	6.094	154.78	5.969	151.60
		35.00	52.51	0.498	12.65	6.004	152.50	5.879	149.32
7 ¾	193.68	38.00	56.50	0.540	13.72	5.920	150.36	5.794	147.17
		26.40	39.64	0.328	8.33	6.969	177.01	6.844	173.84
		29.70	44.82	0.375	9.53	6.875	174.63	6.750	171.45
		33.70	50.79	0.430	10.92	6.765	171.83	6.666	168.66
		39.00	58.25	0.500	12.70	6.625	168.28	6.500	165.10
42.80	64.68	0.562	14.27	6.501	165.13	6.376	161.95		



All VAsuperior® accessories are available on request. The values shown are based on T&C pipe lengths of L = 10.0m (32.81ft).  
 Special clearance couplings with reduced outside diameters are available on request.  
 Blanking dimensions for accessories are available as a download on our web page [www.voestalpine.com/tubulars](http://www.voestalpine.com/tubulars)

COUPLING LENGTH		OUTSIDE DIAMETER COUPLING		VOLUME				MAKE UP LOSS	
				DISPLACEMENT		PRODUCTION			
inch	mm	inch	mm	us gal/ft	lit/m	us gal/ft	lit/m	inch	mm
5.748	146.00	2.776	70.50	0.231	02.87	0.163	2.02	2.256	57.30
5.748	146.00	2.776	70.50	0.231	02.87	0.154	1.91	2.256	57.30
5.748	146.00	2.874	73.00	0.231	02.87	0.143	1.77	2.256	57.30
6.378	162.00	3.248	82.50	0.338	04.20	0.243	3.02	2.551	64.80
6.378	162.00	3.406	86.50	0.339	04.21	0.220	2.73	2.551	64.80
6.378	162.00	3.406	86.50	0.339	04.21	0.209	2.59	2.551	64.80
7.323	186.00	4.000	101.60	0.502	06.23	0.384	4.77	3.043	77.30
7.323	186.00	4.000	101.60	0.502	06.23	0.366	4.54	3.043	77.30
7.323	186.00	4.000	101.60	0.502	06.23	0.349	4.33	3.043	77.30
7.323	186.00	4.114	104.50	0.502	06.24	0.308	3.83	3.043	77.30
7.323	186.00	4.114	104.50	0.502	06.24	0.291	3.62	3.043	77.30
7.323	186.00	4.252	108.00	0.503	06.26	0.284	3.53	3.043	77.30
7.323	186.00	4.252	108.00	0.503	06.26	0.276	3.43	3.043	77.30
7.323	186.00	4.252	108.00	0.503	06.26	0.265	3.29	3.043	77.30
7.874	200.00	4.390	111.50	0.655	08.14	0.514	6.38	3.272	83.10
7.874	200.00	4.500	114.30	0.655	08.14	0.493	6.12	3.272	83.10
7.874	200.00	4.500	114.30	0.656	08.15	0.455	5.65	3.362	85.40
8.661	220.00	4.862	123.50	0.829	10.30	0.670	8.32	3.693	93.80
8.661	220.00	4.902	124.50	0.829	10.30	0.653	8.11	3.693	93.80
8.661	220.00	4.902	124.50	0.829	10.30	0.639	7.94	3.693	93.80
8.661	220.00	5.000	127.00	0.830	10.31	0.627	7.79	3.693	93.80
8.661	220.00	5.000	127.00	0.830	10.31	0.597	7.42	3.693	93.80
7.913	220.00	5.250	133.35	0.833	10.34	0.571	7.09	3.693	93.80
7.913	220.00	5.250	133.35	0.833	10.34	0.541	6.71	3.693	93.80
9.685	246.00	5.563	141.30	1.026	12.74	0.824	10.23	4.246	107.86
9.685	246.00	5.563	141.30	1.026	12.74	0.793	9.85	4.246	107.86
9.685	246.00	5.563	141.30	1.026	12.74	0.746	9.27	4.246	107.86
9.685	246.00	5.800	147.32	1.028	12.78	0.694	8.63	4.246	107.86
9.685	246.00	5.800	147.32	1.028	12.78	0.667	8.29	4.246	107.86
9.685	246.00	5.800	147.32	1.028	12.78	0.653	8.11	4.246	107.86
9.843	250.00	6.051	153.70	1.241	15.41	1.000	12.42	4.313	109.56
9.843	250.00	6.051	153.70	1.241	15.41	0.976	12.13	4.313	109.56
9.843	250.00	6.051	153.70	1.241	15.41	0.931	11.57	4.313	109.56
9.843	250.00	6.300	160.02	1.243	15.45	0.890	11.05	4.313	109.56
9.843	250.00	6.300	160.02	1.243	15.45	0.844	10.48	4.313	109.56
10.000	254.00	6.300	160.02	1.355	16.84	1.103	13.70	4.392	111.56
10.000	254.00	6.300	160.02	1.355	16.84	1.079	13.41	4.392	111.56
10.000	254.00	6.300	160.02	1.356	16.84	1.053	13.08	4.392	111.56
10.000	254.00	6.300	160.02	1.356	16.84	1.037	12.88	4.392	111.56
10.236	260.00	7.157	181.80	1.799	22.34	1.493	18.54	4.510	114.56
10.236	260.00	7.390	187.70	1.803	22.39	1.431	17.77	4.510	114.56
10.236	260.00	7.390	187.70	1.803	22.39	1.369	17.00	4.510	114.56
10.236	260.00	7.390	187.70	1.803	22.39	1.315	16.33	4.510	114.56
10.630	270.00	7.657	194.50	2.010	24.96	1.654	20.54	4.707	119.56
10.630	270.00	7.657	194.50	2.010	24.96	1.607	19.96	4.707	119.56
10.630	270.00	7.657	194.50	2.010	24.96	1.560	19.38	4.707	119.56
10.630	270.00	7.874	200.00	2.014	25.01	1.515	18.82	4.707	119.56
10.630	270.00	7.874	200.00	2.014	25.01	1.471	18.27	4.707	119.56
10.630	270.00	7.874	200.00	2.014	25.01	1.430	17.76	4.707	119.56
11.024	280.00	8.500	215.90	2.388	29.66	1.982	24.61	4.908	124.66
11.024	280.00	8.500	215.90	2.388	29.66	1.928	23.95	4.908	124.66
11.024	280.00	8.500	215.90	2.388	29.66	1.867	23.19	4.908	124.66
11.024	280.00	8.500	215.90	2.388	29.66	1.791	22.24	4.908	124.66
11.024	280.00	8.500	215.90	2.388	29.66	1.725	21.42	4.908	124.66

# PERFORMANCE PROPERTIES TUBING

(METRIC UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 55				GRADE 75				GRADE 80			
inch	mm	lb/ft	kg/m	inch	mm	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
						MPa		kN		MPa		kN		MPa		kN	
2 3/8	60.32	4.60	6.69	0.190	4.83	53.10	55.80	320	310	72.40	76.10	440	420	77.40	81.20	460	450
		5.10	7.57	0.218	5.54	60.90	63.20	360	310	83.10	86.20	490	420	88.70	92.00	530	450
		5.80	8.67	0.254	6.45	70.90	72.50	410	420	96.70	98.80	560	570	103.30	105.40	600	610
2 1/2	73.02	6.40	9.29	0.217	5.51	50.00	53.00	440	330	68.30	72.20	600	450	72.90	76.90	650	480
		7.80	11.57	0.276	7.01	63.70	65.80	550	530	86.90	89.80	750	720	92.70	95.70	800	770
		8.60	12.74	0.308	7.82	71.00	72.60	610	530	96.90	98.90	830	720	103.50	105.60	880	770
3 1/2	88.90	7.70	11.28	0.216	5.49	41.00	41.20	550	590	55.90	51.80	740	810	59.70	54.30	790	870
		9.20	13.29	0.254	6.45	48.10	51.00	630	590	65.60	69.00	860	810	70.10	72.60	920	870
		10.20	14.97	0.289	7.34	54.80	57.40	710	590	74.70	78.30	970	810	79.80	83.60	1040	870
		12.70	18.90	0.375	9.52	71.00	72.60	900	770	96.90	98.90	1230	1050	103.40	105.60	1310	1130
		13.70	20.62	0.413	10.49	73.20	78.90	980	770	99.80	107.60	1340	1050	106.60	114.90	1430	1130
		14.30	21.28	0.430	10.92	81.50	81.70	1010	990	111.10	111.70	1380	1360	118.70	118.90	1480	1450
		14.70	22.16	0.450	11.43	83.10	84.90	1050	990	113.30	115.90	1440	1360	121.00	123.60	1540	1450
		15.50	23.07	0.476	12.09	83.10	89.10	1110	990	113.30	121.50	1510	1360	121.00	129.70	1610	1450
4	101.60	9.50	13.82	0.226	5.74	37.50	35.20	660	470	51.10	43.60	890	650	54.60	45.40	950	690
		10.70	15.86	0.262	6.65	43.40	45.40	750	660	59.20	57.70	1030	900	63.20	60.60	1090	960
		13.20	19.63	0.330	8.38	54.70	57.40	930	660	74.60	78.30	1270	900	79.70	83.60	1350	960
4 1/2	114.30	10.50	15.51	0.224	5.69	33.00	27.60	740	490	45.00	33.00	1000	670	48.10	34.10	1070	720
		11.60	17.18	0.250	6.35	36.80	34.20	820	570	50.30	42.10	1110	770	53.70	43.80	1190	820
		12.60	18.50	0.271	6.88	39.90	39.40	880	570	54.50	49.50	1200	770	58.10	51.70	1280	820
		13.50	19.78	0.290	7.37	42.80	44.30	940	750	58.30	56.10	1280	1030	62.30	58.90	1370	1100
		15.20	22.67	0.337	8.56	49.70	52.50	1080	750	67.80	71.70	1470	1030	72.30	76.50	1570	1100
		17.00	25.32	0.380	9.650	56.00	58.70	1200	1240	76.40	80.00	1640	1700	81.60	85.30	1750	1810
		18.90	27.56	0.430	10.920	63.40	65.50	1340	1240	86.40	89.40	1830	1700	92.30	95.30	1960	1810

P<sub>i</sub> ... internal yield pressure | P<sub>c</sub> ... collapse resistance (VA-HC-grades on special request) | S<sub>y</sub> ... joint yield strength | L ... load on coupling face



	GRADE 90				GRADE 95				GRADE 110				GRADE 125			
	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
	MPa		kN		MPa		kN		MPa		kN		MPa		kN	
87.00	91.40	520	510	91.80	96.40	550	530	106.20	111.20	640	620	120.80	123.40	730	700	
99.80	103.50	590	510	105.30	109.30	620	530	121.80	126.50	720	620	138.50	143.80	820	700	
116.20	118.50	680	680	122.60	125.10	710	720	141.80	144.90	830	830	161.30	164.60	940	950	
82.00	85.40	730	540	86.50	89.20	770	570	100.10	100.20	890	660	113.80	110.80	1010	750	
104.30	107.70	900	870	110.00	113.60	950	920	127.30	131.60	1100	1060	144.80	149.50	1250	1210	
116.40	118.70	990	870	122.80	125.30	1050	920	142.10	145.10	1210	1060	161.60	164.90	1380	1210	
67.10	58.90	890	970	70.80	61.10	940	1030	81.90	67.20	1090	1190	93.20	72.40	1240	1350	
78.80	79.80	1040	970	83.20	83.30	1090	1030	96.20	93.30	1270	1190	109.40	102.70	1440	1350	
89.70	94.00	1170	970	94.60	99.20	1230	1030	109.50	114.90	1430	1190	124.50	130.60	1620	1350	
116.40	118.70	1470	1270	122.70	125.30	1560	1340	142.10	145.10	1800	1550	161.50	164.90	2050	1760	
119.90	129.20	1610	1270	126.40	136.40	1690	1340	146.30	158.00	1960	1550	166.40	179.50	2230	1760	
133.50	133.80	1660	1630	140.80	141.10	1750	1720	162.90	163.50	2030	1990	185.30	185.70	2310	2260	
136.10	139.00	1730	1630	143.60	146.70	1820	1720	166.10	169.90	2110	1990	188.90	193.10	2400	2260	
136.10	145.90	1810	1630	143.60	154.00	1910	1720	166.10	178.30	2210	1990	188.90	202.60	2510	2260	
61.40	48.80	1070	780	64.80	50.40	1130	820	74.90	54.50	1310	950	85.20	57.80	1490	1080	
71.10	66.10	1230	1080	75.00	68.70	1300	1140	86.80	76.20	1500	1320	98.70	82.90	1710	1500	
89.60	94.00	1520	1080	94.50	99.10	1610	1140	109.40	114.80	1860	1320	124.40	130.40	2120	1500	
54.10	35.90	1210	810	57.10	36.60	1270	850	66.00	38.30	1470	980	75.10	40.20	1670	1120	
60.40	47.00	1340	930	63.70	48.50	1410	980	73.70	52.30	1630	1130	83.80	55.20	1860	1290	
65.40	56.00	1440	930	69.00	58.00	1520	980	79.80	63.40	1760	1130	90.80	68.20	2000	1290	
70.10	64.10	1540	1230	73.90	66.60	1620	1300	85.50	73.60	1880	1510	97.30	80.00	2130	1710	
81.40	84.30	1770	1230	85.80	88.00	1860	1300	99.30	98.90	2160	1510	113.00	109.20	2450	1710	
91.80	96.00	1970	2040	96.80	101.30	2080	2150	112.00	117.30	2400	2490	127.40	133.30	2730	2830	
103.80	107.20	2200	2040	109.50	113.10	2320	2150	126.70	131.10	2690	2490	144.10	148.90	3060	2830	

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

# PERFORMANCE PROPERTIES TUBING

(US CUSTOMARY-UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 55				GRADE 75				GRADE 80			
inch	mm	lb/ft	kg/m	inch	mm	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
						psi		1000lb		psi		1000lb		psi		1000lb	
2 3/8	60.32	4.60	6.69	0.190	4.83	7700	8100	72	70	10500	11040	99	94	11230	11780	103	101
		5.10	7.57	0.218	5.54	8830	9170	81	70	12050	12500	110	94	12860	13340	119	101
		5.80	8.67	0.254	6.45	10280	10510	92	94	14030	14330	126	128	14980	15280	135	137
2 1/2	73.02	6.40	9.29	0.217	5.51	7250	7680	99	74	9910	10470	135	101	10570	11160	146	108
		7.80	11.57	0.276	7.01	9240	9540	124	119	12600	13020	169	162	13440	13880	180	173
		8.60	12.74	0.308	7.82	10300	10530	137	119	14050	14340	187	162	15010	15310	198	173
3 1/2	88.90	7.70	11.28	0.216	5.49	5950	5970	124	133	8110	7520	166	182	8660	7870	178	196
		9.20	13.29	0.254	6.45	6980	7400	142	133	9510	10010	193	182	10170	10530	207	196
		10.20	14.97	0.289	7.34	7950	8330	160	133	10830	11360	218	182	11570	12120	234	196
		12.70	18.90	0.375	9.52	10300	10530	202	173	14050	14340	277	236	15000	15310	294	254
		13.70	20.62	0.413	10.49	10620	11450	220	173	14470	15610	301	236	15460	16660	321	254
		14.30	21.28	0.430	10.92	11820	11850	227	223	16110	16200	310	306	17220	17240	333	326
		14.70	22.16	0.450	11.43	12050	12320	236	223	16430	16810	324	306	17550	17920	346	326
4	101.60	9.50	13.82	0.226	5.74	5440	5110	148	106	7410	6320	200	146	7920	6580	214	155
		10.70	15.86	0.262	6.65	6290	6590	169	148	8590	8370	232	202	9170	8790	245	216
		13.20	19.63	0.330	8.38	7930	8330	209	148	10820	11350	286	202	11560	12120	303	216
4 1/2	114.30	10.50	15.51	0.224	5.69	4790	4010	166	110	6530	4790	225	151	6980	4940	241	162
		11.60	17.18	0.250	6.35	5340	4960	184	128	7300	6110	250	173	7790	6350	268	184
		12.60	18.50	0.271	6.88	5790	5720	198	128	7900	7180	270	173	8430	7500	288	184
		13.50	19.78	0.290	7.37	6210	6420	211	169	8460	8140	288	232	9040	8540	308	247
		15.20	22.67	0.337	8.56	7210	7620	243	169	9830	10400	330	232	10490	11090	353	247
		17.00	25.32	0.380	9.65	8120	8510	270	280	11080	11600	369	382	11840	12370	393	407
		18.90	27.56	0.430	10.92	9200	9500	301	280	12530	12960	411	382	13390	13820	441	407

P<sub>i</sub> ... internal yield pressure | P<sub>c</sub> ... collapse resistance (VA-HC-grades on special request) | S<sub>y</sub> ... joint yield strength | L ... load on coupling face



	GRADE 90				GRADE 95				GRADE 110				GRADE 125			
	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
	psi		1000lb		psi		1000lb		psi		1000lb		psi		1000lb	
12620	13250	117	115	13310	13980	124	119	15400	16130	144	139	17520	17900	164	157	
14470	15010	133	115	15270	15850	139	119	17670	18350	162	139	20090	20850	184	157	
16850	17190	153	153	17780	18150	160	162	20570	21010	187	187	23390	23880	211	214	
11890	12380	164	121	12550	12940	173	128	14520	14540	200	148	16510	16070	227	169	
15130	15620	202	196	15950	16480	214	207	18460	19090	247	238	21000	21690	281	272	
16880	17220	223	196	17810	18180	236	207	20610	21050	272	238	23440	23920	310	272	
9730	8540	200	218	10270	8860	211	232	11880	9740	245	268	13520	10500	279	303	
11430	11570	234	218	12070	12080	245	232	13950	13530	286	268	15870	14890	324	303	
13010	13640	263	218	13720	14390	277	232	15880	16670	321	268	18060	18940	364	303	
16880	17220	330	286	17800	18180	351	301	20610	21050	405	348	23420	23920	461	396	
17390	18740	362	286	18330	19780	380	301	21220	22910	441	348	24130	26030	501	396	
19360	19400	373	366	20420	20470	393	387	23630	23710	456	447	26880	26940	519	508	
19740	20160	389	366	20830	21280	409	387	24090	24640	474	447	27400	28000	540	508	
19740	21160	407	366	20830	22330	429	387	24090	25860	497	447	27400	29390	564	508	
8910	7080	241	175	9400	7310	254	184	10860	7910	294	214	12360	8380	335	243	
10310	9590	277	243	10880	9970	292	256	12590	11050	337	297	14320	12020	384	337	
13000	13630	342	243	13710	14380	362	256	15870	16650	418	297	18040	18920	477	337	
7850	5200	272	182	8280	5310	286	191	9570	5550	330	220	10890	5830	375	252	
8760	6820	301	209	9240	7030	317	220	10690	7580	366	254	12150	8000	418	290	
9490	8120	324	209	10010	8410	342	220	11570	9200	396	254	13170	9890	450	290	
10170	9300	346	277	10720	9660	364	292	12400	10680	423	339	14110	11600	479	384	
11810	12230	398	277	12440	12770	418	292	14400	14350	486	339	16390	15840	551	384	
13310	13920	443	458	14040	14690	468	484	16240	17010	540	560	18480	19330	614	636	
15050	15550	495	458	15880	16410	522	484	18380	19010	605	560	20900	21600	688	636	

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

# PERFORMANCE PROPERTIES CASING

(METRIC UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 55				GRADE 75				GRADE 80			
inch	mm	lb/ft	kg/m	inch	mm	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
						MPa		kN		MPa		kN		MPa		kN	
5	127.00	13.00	19.67	0.253	6.43	33.60	28.50	920	760	45.80	34.30	1260	1040	48.90	35.40	1340	1110
		15.00	22.71	0.296	7.52	39.30	38.30	1070	760	53.60	47.80	1460	1040	57.20	50.00	1560	1110
		18.00	27.25	0.362	9.19	48.00	51.00	1290	760	65.50	68.70	1760	1040	69.90	72.40	1880	1110
		21.40	32.30	0.437	11.10	58.00	60.50	1530	1280	79.10	82.50	2090	1740	84.40	88.00	2230	1860
		23.20	34.94	0.478	12.14	61.70	65.60	1660	1280	84.10	89.40	2260	1740	89.80	95.40	2420	1860
		24.10	36.35	0.500	12.70	61.70	68.30	1730	1280	84.10	93.10	2360	1740	89.80	99.30	2520	1860
5 ½	139.70	15.50	23.45	0.275	6.98	33.10	27.90	1100	810	45.20	33.30	1500	1100	48.30	34.40	1610	1180
		17.00	25.73	0.304	7.72	36.70	33.90	1210	810	50.00	41.60	1650	1100	53.40	43.40	1770	1180
		20.00	30.12	0.361	9.17	43.50	45.60	1430	810	59.40	58.00	1940	1100	63.40	60.90	2080	1180
		23.00	34.17	0.415	10.54	50.00	53.00	1620	1390	68.30	72.20	2210	1900	72.90	76.90	2360	2030
		26.00	38.65	0.476	12.09	57.40	60.00	1840	1390	78.30	81.80	2510	1900	83.60	87.20	2680	2030
5 ¾	146.05	16.40	24.95	0.276	7.00	31.80	25.60	1160	840	43.40	30.20	1580	1140	46.30	31.00	1690	1220
		17.90	27.21	0.303	7.70	35.00	31.00	1270	840	47.70	37.60	1730	1140	50.90	39.00	1850	1220
		19.70	29.78	0.335	8.50	38.60	37.30	1390	840	52.70	46.40	1900	1140	56.20	48.40	2030	1220
		20.40	31.40	0.354	9.00	40.90	41.00	1470	840	55.80	51.70	2000	1140	59.50	54.00	2140	1220
6 ¾	168.30	20.00	30.11	0.288	7.32	28.90	20.50	1400	910	39.40	23.10	1910	1250	42.00	24.00	2040	1330
		24.00	36.19	0.352	8.94	35.20	31.40	1700	1560	48.10	38.30	2310	2120	51.30	39.70	2470	2270
		28.00	42.24	0.417	10.59	41.70	42.50	1990	1560	56.90	53.80	2710	2120	60.80	56.30	2900	2270
		32.00	47.52	0.475	12.06	47.50	50.50	2240	1560	64.80	67.60	3060	2120	69.20	71.20	3270	2270
7	177.80	23.00	34.68	0.317	8.05	30.00	22.50	1630	1320	41.00	25.90	2220	1810	43.70	26.40	2370	1930
		26.00	39.20	0.362	9.19	34.30	29.80	1840	1320	46.80	36.00	2520	1810	49.90	37.30	2690	1930
		29.00	43.77	0.408	10.36	38.60	37.30	2070	1320	52.70	46.40	2820	1810	56.30	48.40	3010	1930
		32.00	48.19	0.453	11.51	42.90	44.60	2280	1970	58.60	56.60	3110	2680	62.50	59.40	3320	2860
		35.00	52.51	0.498	12.65	47.20	50.10	2490	1970	64.40	66.70	3390	2680	68.70	70.20	3620	2860
		38.00	56.50	0.540	13.72	51.20	54.00	2680	1970	69.80	73.60	3640	2680	74.50	78.50	3890	2860
7 ¾	193.68	26.40	39.64	0.328	8.33	28.50	19.90	1840	2290	38.90	22.60	2510	2450	41.50	23.40	2680	3130
		29.70	44.82	0.375	9.53	32.60	27.00	2090	2290	44.50	32.10	2850	2450	47.50	33.00	3040	3130
		33.70	50.79	0.430	10.92	37.40	35.20	2380	2290	51.00	43.40	3240	2450	54.50	45.20	3460	3130
		39.00	58.25	0.500	12.70	43.50	45.60	2740	2290	59.30	57.90	3730	3130	63.30	60.80	3980	3130
		42.80	64.68	0.562	14.27	48.90	51.80	3050	2290	66.70	70.60	4160	3130	71.20	74.50	4440	3130

P<sub>i</sub> ... internal yield pressure | P<sub>c</sub> ... collapse resistance (VA-HC-grades on special request) | S<sub>y</sub> ... joint yield strength | L ... load on coupling face



	GRADE 90				GRADE 95				GRADE 110				GRADE 125			
	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
	MPa		kN		MPa		kN		MPa		kN		MPa		kN	
55.00	37.40	1510	1250	58.00	38.30	1600	1320	67.20	40.30	1850	1530	76.40	41.70	2100	1740	
64.30	54.10	1750	1250	67.90	55.90	1850	1320	78.50	61.00	2140	1530	89.30	65.40	2430	1740	
78.60	79.50	2110	1250	82.90	82.90	2230	1320	96.00	92.90	2580	1530	109.20	102.20	2930	1740	
95.00	99.00	2510	2090	100.20	104.50	2650	2200	115.90	121.00	3060	2550	131.80	137.50	3480	2900	
101.10	107.30	2720	2090	106.60	113.30	2870	2200	123.40	131.10	3320	2550	140.30	149.10	3770	2900	
101.10	111.70	2830	2090	106.60	117.90	2990	2200	123.40	136.50	3460	2550	140.30	155.10	3930	2900	
54.30	36.30	1810	1320	57.30	37.10	1910	1400	66.30	38.80	2210	1620	75.40	40.60	2510	1840	
60.10	46.50	1990	1320	63.30	47.80	2100	1400	73.30	51.60	2430	1620	83.40	54.40	2760	1840	
71.30	66.40	2340	1320	75.20	69.00	2460	1400	87.10	76.50	2850	1620	99.00	83.30	3240	1840	
82.00	85.40	2660	2280	86.50	89.20	2800	2410	100.10	100.20	3240	2790	113.80	110.80	3690	3170	
94.10	98.20	3010	2280	99.20	103.60	3180	2410	114.80	120.00	3670	2790	130.50	136.30	4180	3170	
52.10	32.50	1900	1370	54.90	33.00	2000	1450	63.60	34.90	2320	1680	72.30	37.00	2640	1910	
57.30	41.40	2080	1370	60.40	42.60	2190	1450	69.90	45.30	2540	1680	79.50	47.20	2880	1910	
63.20	52.30	2280	1370	66.70	54.00	2400	1450	77.20	58.80	2780	1680	87.80	62.70	3170	1910	
67.00	58.60	2400	1370	70.60	60.70	2540	1450	81.70	66.70	2940	1680	93.00	72.00	3340	1910	
47.30	25.50	2300	1500	49.90	26.20	2420	1580	57.70	27.80	2810	1830	65.60	28.80	3190	2080	
57.70	42.30	2780	2550	60.90	43.50	2930	2690	70.50	46.40	3390	3110	80.10	48.40	3860	3540	
68.40	61.20	3260	2550	72.10	63.60	3440	2690	83.50	70.10	3980	3110	94.90	75.80	4520	3540	
77.90	78.10	3670	2550	82.10	81.40	3870	2690	95.10	91.10	4480	3110	108.10	100.20	5100	3540	
49.20	27.80	2670	2170	51.90	28.50	2810	2290	60.10	30.60	3250	2650	68.30	32.10	3700	3010	
56.20	39.60	3020	2170	59.20	40.50	3190	2290	68.60	43.00	3690	2650	78.00	44.50	4200	3010	
63.30	52.30	3380	2170	66.80	54.00	3570	2290	77.30	58.80	4130	2650	87.90	62.70	4700	3010	
70.40	64.70	3730	3220	74.20	67.20	3940	3400	85.90	74.30	4560	3930	97.70	80.80	5180	4470	
77.30	77.00	4080	3220	81.60	80.30	4300	3400	94.40	89.80	4970	3930	107.30	98.70	5660	4470	
83.90	88.40	4370	3220	88.50	92.70	4610	3400	102.40	104.40	5340	3930	116.40	115.50	6070	4470	
46.70	24.90	3010	3760	49.30	25.60	3180	3960	57.10	27.00	3680	4590	64.90	27.90	4180	5220	
53.40	34.70	3420	3760	56.30	35.40	3610	3960	65.20	36.90	4180	4590	74.10	39.10	4750	5220	
61.30	48.60	3890	3760	64.60	50.20	4110	3960	74.80	54.30	4760	4590	85.10	57.60	5410	5220	
71.30	66.30	4480	3760	75.20	68.90	4730	3960	87.00	76.40	5480	4590	98.90	83.20	6220	5220	
80.10	82.00	4990	3760	84.50	85.60	5270	3960	97.70	96.00	6100	4590	111.10	105.80	6940	5220	

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

# PERFORMANCE PROPERTIES CASING

(US CUSTOMARY-UNITS)

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 55				GRADE 75				GRADE 80			
inch	mm	lb/ft	kg/m	inch	mm	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
						psi		1000lb		psi		1000lb		psi		1000lb	
5	127.00	13.00	19.67	0.253	6.43	4870	4140	207	171	6640	4980	283	234	7090	5140	301	250
		15.00	22.71	0.296	7.52	5700	5560	241	171	7770	6930	328	234	8300	7250	351	250
		18.00	27.25	0.362	9.19	6960	7390	290	171	9500	9970	395	234	10140	10500	422	250
		21.40	32.30	0.437	11.10	8410	8770	344	287	11470	11970	470	391	12240	12760	501	417
		23.20	34.94	0.478	12.14	8950	9510	373	287	12200	12970	509	391	13020	13830	543	417
		24.10	36.35	0.500	12.70	8950	9900	389	287	12200	13500	529	391	13020	14400	565	417
5 ½	139.70	15.50	23.45	0.275	6.98	4800	4040	247	182	6560	4830	337	247	7010	4990	362	265
		17.00	25.73	0.304	7.72	5320	4910	272	182	7250	6030	371	247	7750	6290	398	265
		20.00	30.12	0.361	9.17	6310	6610	321	182	8620	8412	437	247	9200	8830	467	265
		23.00	34.17	0.415	10.54	7250	7680	364	313	9910	10470	497	427	10570	11160	531	456
		26.00	38.65	0.476	12.09	8330	8700	414	313	11360	11860	563	427	12130	12650	601	456
5 ¾	146.05	16.40	24.95	0.276	7.00	4610	3720	261	189	6290	4380	355	256	6720	4500	380	274
		17.90	27.21	0.303	7.70	5080	4490	286	189	6920	5450	389	256	7380	5650	416	274
		19.70	29.78	0.335	8.50	5600	5410	312	189	7640	6730	427	256	8150	7020	456	274
		20.40	31.40	0.354	9.00	5930	5950	330	189	8090	7500	450	256	8630	7830	480	274
6 ½	168.30	20.00	30.11	0.288	7.32	4190	2970	315	205	5710	3350	429	281	6090	3480	459	299
		24.00	36.19	0.352	8.94	5110	4560	382	351	6980	5560	519	477	7440	5760	555	510
		28.00	42.24	0.417	10.59	6050	6170	447	351	8250	7800	609	477	8820	8170	652	510
		32.00	47.52	0.475	12.06	6890	7320	504	351	9400	9800	688	477	10040	10320	735	510
7	177.80	23.00	34.68	0.317	8.05	4350	3270	366	297	5950	3760	499	407	6340	3830	533	434
		26.00	39.20	0.362	9.19	4970	4320	414	297	6790	5220	567	407	7240	5410	605	434
		29.00	43.77	0.408	10.36	5600	5410	465	297	7640	6730	633	407	8170	7020	676	434
		32.00	48.19	0.453	11.51	6220	6470	513	443	8500	8210	699	602	9060	8610	746	643
		35.00	52.51	0.498	12.65	6850	7270	560	443	9340	9670	762	602	9960	10180	814	643
		38.00	56.50	0.540	13.72	7430	7830	602	443	10120	10670	818	602	10810	11390	875	643
7 ½	193.68	26.40	39.64	0.328	8.33	4130	2890	414	515	5640	3280	564	704	6020	3400	602	751
		29.70	44.82	0.375	9.53	4730	3910	470	515	6450	4650	640	704	6890	4790	683	751
		33.70	50.79	0.430	10.92	5420	5100	535	515	7400	6300	729	704	7900	6560	778	751
		39.00	58.25	0.500	12.70	6310	6610	616	515	8600	8400	839	704	9180	8820	895	751
		42.80	64.68	0.562	14.27	7090	7510	686	515	9670	10240	936	704	10330	10810	998	751

P<sub>i</sub> ... internal yield pressure | P<sub>c</sub> ... collapse resistance (VA-HC-grades on special request) | S<sub>y</sub> ... joint yield strength | L...load on coupling face

	GRADE 90				GRADE 95				GRADE 110				GRADE 125			
	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L	P <sub>i</sub>	P <sub>c</sub>	S <sub>y</sub>	L
	psi		1000lb		psi		1000lb		psi		1000lb		psi		1000lb	
7980	5430	339	281	8410	5560	360	297	9750	5850	416	344	11080	6050	472	391	
9330	7840	393	281	9850	8110	416	297	11390	8850	481	344	12950	9480	546	391	
11400	11530	475	281	12020	12030	501	297	13920	13470	580	344	15840	14830	659	391	
13780	14360	564	470	14530	15160	596	496	16810	17550	688	574	19120	19940	782	652	
14660	15560	611	470	15460	16430	644	496	17900	19020	746	574	20350	21620	848	652	
14660	16200	636	470	15460	17100	671	496	17900	19800	776	574	20350	22500	883	652	
7880	5260	407	297	8310	5380	429	315	9620	5630	497	364	10940	5890	564	414	
8720	6740	447	297	9180	6940	472	315	10630	7480	546	364	12100	7890	620	414	
10340	9630	525	297	10910	10010	554	315	12630	11100	641	364	14360	12080	729	414	
11890	12380	598	513	12550	12940	629	541	14520	14540	728	627	16510	16070	830	712	
13650	14240	676	513	14390	15030	713	541	16650	17400	825	627	18930	19770	938	712	
7560	4710	427	308	7960	4790	450	326	9220	5060	522	378	10490	5360	593	429	
8310	6010	468	308	8760	6180	492	326	10140	6570	571	378	11530	6840	647	429	
9170	7580	513	308	9670	7830	541	326	11200	8530	626	378	12730	9100	712	429	
9720	8500	540	308	10240	8810	570	326	11850	9680	660	378	13490	10440	750	429	
6860	3700	517	337	7240	3800	544	355	8370	4030	632	411	9510	4170	717	468	
8370	6140	625	573	8830	6310	659	605	10230	6730	762	699	11620	7020	868	796	
9920	8880	733	573	10460	9220	773	605	12110	10160	895	699	13760	10990	1016	796	
11300	11330	826	573	11910	11810	872	605	13790	13220	1009	699	15680	14530	1147	796	
7140	4030	600	488	7530	4140	632	515	8720	4440	731	596	9910	4650	832	677	
8150	5740	679	488	8590	5880	717	515	9950	6230	830	596	11310	6450	944	677	
9180	7580	760	488	9690	7830	802	515	11210	8530	929	596	12750	9100	1056	677	
10210	9380	839	724	10760	9750	886	764	12460	10780	1025	883	14170	11720	1165	1005	
11210	11170	917	724	11840	11650	967	764	13690	13020	1117	883	15560	14310	1272	1005	
12170	12820	982	724	12840	13440	1036	764	14850	15140	1200	883	16880	16750	1365	1005	
6770	3610	677	845	7150	3710	714	890	8280	3920	827	1032	9410	4050	940	1174	
7750	5040	769	845	8170	5140	811	890	9460	5350	940	1032	10750	5670	1068	1174	
8890	7050	875	845	9370	7280	923	890	10850	7870	1069	1032	12340	8350	1215	1174	
10340	9620	1007	845	10910	10000	1063	890	12620	11080	1231	1032	14340	12060	1399	1174	
11620	11890	1122	845	12260	12410	1185	890	14170	13920	1372	1032	16110	15350	1559	1174	

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



# MAKE UP TORQUE

## RECOMMENDED OPTIMUM MAKE-UP TORQUE FOR REGULAR COUPLINGS

PIPE OUTSIDE DIAMETER		NOMINAL WEIGHT		WALL THICKNESS		GRADE 55		GRADE 75		GRADE 80		GRADE 85	
inch	mm	lb/ft	kg/m	inch	mm	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb
2 3/8	60.32	4.60	6.69	0.190	4.83	1300	960	1500	1110	1550	1140	1600	1180
		5.10	7.57	0.218	5.54	1380	1020	1590	1170	1640	1210	1680	1240
		5.80	8.67	0.254	6.45	1720	1270	1970	1450	2030	1500	2100	1550
2 1/2	73.02	6.40	9.29	0.217	5.51	2090	1540	2520	1860	2630	1940	2740	2020
		7.80	11.57	0.276	7.01	2900	2140	3530	2600	3670	2710	3840	2830
		8.60	12.74	0.308	7.82	3160	2330	3840	2830	4010	2960	4180	3080
3 1/2	88.90	7.70	11.28	0.216	5.49	2330	1720	2680	1980	2770	2040	2860	2110
		9.20	13.29	0.254	6.45	2940	2170	3420	2520	3540	2610	3660	2700
		10.20	14.97	0.289	7.34	3130	2310	3620	2670	3730	2750	3850	2840
		12.70	18.90	0.375	9.52	4080	3010	4940	3640	5140	3790	5360	3950
		13.70	20.62	0.413	10.49	4200	3100	5060	3730	5260	3880	5480	4040
		14.30	21.28	0.430	10.92	4760	3510	5740	4230	5990	4420	6220	4590
		14.70	22.16	0.450	11.43	4830	3560	5800	4280	6050	4460	6290	4640
4	101.60	9.50	13.82	0.226	5.74	3010	2220	3610	2660	3760	2770	3890	2870
		10.70	15.86	0.262	6.65	3310	2440	3900	2880	4050	2990	4190	3090
		13.20	19.63	0.330	8.38	4380	3230	5260	3880	5480	4040	5690	4200
4 1/2	114.30	10.50	15.51	0.224	5.69	3400	2510	4030	2970	4180	3080	4340	3200
		11.60	17.18	0.250	6.35	3920	2890	4650	3430	4840	3570	5020	3700
		12.60	18.50	0.271	6.88	4010	2960	4750	3500	4940	3640	5110	3770
		13.50	19.78	0.290	7.37	4340	3200	5290	3900	5530	4080	5760	4250
		15.20	22.67	0.337	8.56	5000	3690	6140	4530	6430	4740	6700	4940
		17.00	25.32	0.380	9.65	6100	4500	7470	5510	7820	5770	8160	6020
5	127.00	18.90	27.56	0.430	10.92	6290	4640	7650	5640	8000	5900	8340	6150
		13.00	19.67	0.253	6.43	5640	4160	6560	4840	6810	5020	7020	5180
		15.00	22.71	0.296	7.52	6410	4730	7480	5520	7770	5730	8040	5930
		18.00	27.25	0.362	9.19	7170	5290	8390	6190	8700	6420	9000	6640
		21.40	32.30	0.437	11.10	8370	6170	9900	7300	10280	7580	10640	7850
5 1/2	139.70	23.20	34.94	0.478	12.14	8530	6290	10070	7430	10450	7710	10810	7970
		24.10	36.35	0.500	12.70	8610	6350	10140	7480	10520	7760	10900	8040
		15.50	23.45	0.275	6.98	6810	5020	8080	5960	8410	6200	8720	6430
		17.00	25.73	0.304	7.72	7670	5660	9190	6780	9570	7060	9970	7350
		20.00	30.12	0.361	9.17	8470	6250	10130	7470	10580	7800	10980	8100
5 3/4	146.05	23.00	34.17	0.415	10.54	8730	6440	10410	7680	10790	7960	11250	8300
		26.00	38.65	0.476	12.09	8990	6630	10670	7870	11090	8180	11510	8490
		16.40	24.95	0.276	7.00	8240	6080	9650	7120	10010	7380	10360	7640
6 5/8	168.28	17.90	27.21	0.303	7.70	9150	6750	10790	7960	11230	8280	11630	8580
		19.70	29.78	0.335	8.50	9730	7180	11510	8490	11940	8810	12390	9140
		20.40	31.40	0.354	9.00	9910	7310	11850	8740	12350	9110	12830	9460
		20.00	30.11	0.288	7.32	9310	6870	11230	8280	11730	8650	12190	8990
7	177.80	24.00	36.19	0.352	8.94	11630	8580	14180	10460	14850	10950	15480	11420
		28.00	42.24	0.417	10.59	12110	8930	14670	10820	15320	11300	15940	11760
		32.00	47.52	0.475	12.06	12470	9200	15040	11090	15670	11560	16320	12040
		23.00	34.68	0.317	8.05	11000	8110	13450	9920	14070	10380	14680	10830
7 1/2	193.68	26.00	39.20	0.362	9.19	12070	8900	14780	10900	15480	11420	16150	11910
		29.00	43.77	0.408	10.36	12360	9120	15090	11130	15780	11640	16450	12130
		32.00	48.19	0.453	11.51	12640	9320	15350	11320	16050	11840	16720	12330
		35.00	52.51	0.498	12.65	12850	9480	15590	11500	16270	12000	16950	12500
		38.00	56.50	0.540	13.72	13060	9630	15800	11650	16470	12150	17150	12650
		26.40	39.64	0.328	8.33	10260	7570	12770	9420	13410	9890	14020	10340
29.70	44.82	0.375	9.53	12760	9410	15840	11680	16610	12250	17370	12810		
33.70	50.79	0.430	10.92	14140	10430	17440	12860	18280	13480	19090	14080		
39.00	58.25	0.500	12.70	17370	12810	21190	15630	22150	16340	23100	17040		
42.80	64.68	0.562	14.27	17770	13110	21600	15930	22570	16650	23510	17340		

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.

2 3/8 inches:  
Maximum torque: optimum +5%  
Minimum torque: optimum -5%

All other sizes:  
Maximum torque: optimum + 10 %  
Minimum torque: optimum - 10 %

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

	GRADE 90		GRADE 95		GRADE 100		GRADE 110		GRADE 125		GRADE 135	
	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb	Nm	ft.lb
	1650	1220	1690	1250	1750	1290	1840	1360	1990	1470	2090	1540
	1740	1280	1790	1320	1830	1350	1930	1420	2090	1540	2180	1610
	2170	1600	2220	1640	2290	1690	2410	1780	2620	1930	2740	2020
	2850	2100	2960	2180	3060	2260	3280	2420	3610	2660	3820	2820
	3990	2940	4140	3050	4300	3170	4600	3390	5070	3740	5370	3960
	4350	3210	4510	3330	4690	3460	5030	3710	5530	4080	5870	4330
	2940	2170	3040	2240	3120	2300	3290	2430	3550	2620	3730	2750
	3780	2790	3890	2870	4010	2960	4260	3140	4610	3400	4850	3580
	3970	2930	4090	3020	4220	3110	4450	3280	4810	3550	5040	3720
	5570	4110	5780	4260	5980	4410	6410	4730	7050	5200	7470	5510
	5690	4200	5900	4350	6100	4500	6520	4810	7160	5280	7590	5600
	6480	4780	6720	4960	6960	5130	7440	5490	8190	6040	8680	6400
	6530	4820	6780	5000	7020	5180	7510	5540	8240	6080	8730	6440
	6620	4880	6860	5060	7100	5240	7590	5600	8320	6140	8810	6500
	4040	2980	4190	3090	4340	3200	4640	3420	5070	3740	5370	3960
	4340	3200	4490	3310	4640	3420	4940	3640	5370	3960	5670	4180
	5910	4360	6130	4520	6350	4680	6780	5000	7440	5490	7880	5810
	4490	3310	4640	3420	4800	3540	5110	3770	5570	4110	5880	4340
	5190	3830	5380	3970	5560	4100	5920	4370	6480	4780	6850	5050
	5300	3910	5480	4040	5670	4180	6020	4440	6580	4850	6940	5120
	6010	4430	6240	4600	6470	4770	6940	5120	7660	5650	8130	6000
	6980	5150	7270	5360	7550	5570	8110	5980	8960	6610	9530	7030
	8500	6270	8840	6520	9180	6770	9870	7280	10900	8040	11580	8540
	8690	6410	9020	6650	9360	6900	10050	7410	11080	8170	11750	8670
	7270	5360	7500	5530	7710	5690	8200	6050	8880	6550	9340	6890
	8310	6130	8580	6330	8850	6530	9400	6930	10210	7530	10750	7930
	9310	6870	9610	7090	9910	7310	10550	7780	11440	8440	12050	8890
	11040	8140	11420	8420	11780	8690	12570	9270	13690	10100	14440	10650
	11200	8260	11590	8550	11940	8810	12730	9390	13870	10230	14620	10780
	11280	8320	11660	8600	12030	8870	12810	9450	13950	10290	14710	10850
	9040	6670	9360	6900	9670	7130	10330	7620	11270	8310	11900	8780
	10360	7640	10710	7900	11090	8180	11880	8760	13000	9590	13760	10150
	11420	8420	11820	8720	12260	9040	13100	9660	14340	10580	15180	11200
	11690	8620	12090	8920	12510	9230	13380	9870	14620	10780	15460	11400
	11930	8800	12360	9120	12770	9420	13630	10050	14890	10980	15710	11590
	10700	7890	11050	8150	11400	8410	12110	8930	13140	9690	13830	10200
	12050	8890	12460	9190	12850	9480	13710	10110	14930	11010	15750	11620
	12840	9470	13290	9800	13720	10120	14630	10790	15930	11750	16810	12400
	13330	9830	13790	10170	14290	10540	15280	11270	16730	12340	17690	13050
	12680	9350	13140	9690	13630	10050	14600	10770	16030	11820	16970	12520
	16120	11890	16740	12350	17390	12830	18700	13790	20590	15190	21860	16120
	16610	12250	17220	12700	17870	13180	19180	14150	21070	15540	22330	16470
	16970	12520	17580	12970	18240	13450	19550	14420	21440	15810	22710	16750
	15290	11280	15900	11730	16510	12180	17770	13110	19590	14450	20810	15350
	16840	12420	17500	12910	18180	13410	19580	14440	21580	15920	22940	16920
	17140	12640	17830	13150	18490	13640	19880	14660	21900	16150	23250	17150
	17410	12840	18070	13330	18740	13820	20130	14850	22150	16340	23520	17350
	17640	13010	18320	13510	18980	14000	20390	15040	22400	16520	23740	17510
	17830	13150	18510	13650	19180	14150	20580	15180	22590	16660	23930	17650
	14660	10810	15270	11260	15890	11720	17140	12640	19020	14030	20270	14950
	18150	13390	18910	13950	19670	14510	21200	15640	23520	17350	25060	18480
	19930	14700	20740	15300	21560	15900	23210	17120	25710	18960	27350	20170
	24070	17750	25010	18450	25950	19140	27860	20550	30740	22670	32650	24080
	24490	18060	25420	18750	26360	19440	28270	20850	31160	22980	33050	24380





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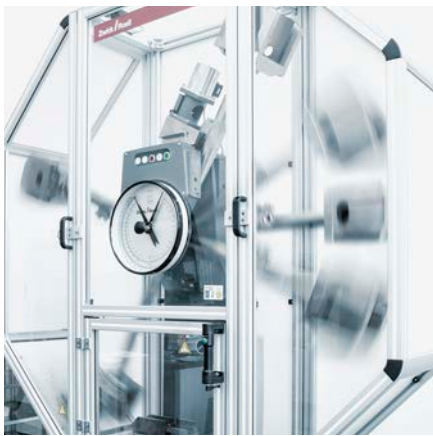
Field Service during the installation can be provided upon request. Please visit the Customer Service site on our web page [www.voestalpine.com/tubulars](http://www.voestalpine.com/tubulars)





# 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**



**voestalpine Tubulars GmbH & Co KG**

Alpinestrasse 17

8652 Kindberg-Aumuehl, Austria

T. +43/50304/23-0

F. +43/50304/63-532

[sales@vatubulars.com](mailto:sales@vatubulars.com)

[www.voestalpine.com/tubulars](http://www.voestalpine.com/tubulars)

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ONE STEP AHEAD.