

# PERFORMANCE IN TUBULARS

voestalpine Tubulars GmbH & Co KG  
[www.voestalpine.com/tubulars](http://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

Our customers are confronted daily with the toughest challenges. Their material and equipment are exposed to extreme conditions. Therefore it is our mission to provide our customers with customized seamless tubular products and innovative solutions with excellent durability and low life cycle costs.



## INNOVATION

What our customers rely on, is a history rich in metallurgical tradition, manufacturing knowledge and understanding of field applications – a perceptive view of production and products, including on-site developing and testing capabilities for enhanced customer demands.



## SUSTAINABILITY

Whether it is premium & preprocessed industrial pipe product solutions or ready-to-install oil and gas product solutions, voestalpine Tubulars makes every effort to meet the highest technical and economical demands. It is our obligation to keep the environment pristine and unspoiled. Certificates confirm this conformity with numerous national and international standards and regulations.



## RESPONSIBILITY

The well-being of our employees & customers as well as to have the best possible knowledge of their needs have highest priority to us. It is our responsibility to give all employees and customers the best possible support and to create optimum, safe and fair working conditions across borders and cultures. Only in this way we can succeed in providing reliable and sustainable products with highest performance tailored to the demands of our customers.





# CUSTOMER BENEFITS

## QUALITY, FLEXIBILITY, SAFETY

Quality is the prerequisite for products that have to withstand extreme conditions. Our dedicated employees work continuously on solutions to our customers' challenges with technical experience, flexibility and ingenuity. Quality standards are more to us than rules, they serve as the baseline which we strive to exceed. The outcome: safe, reliable products and product solutions.

### SAMPLE LIST OF THE COMPANY'S CERTIFICATES

- » API 5CT, API 5L, API 5DP, API 5B
- » Lloyds Register
- » DNV approval of manufacturer
- » CE approval for construction products
- » Construction Products Regulation (CPR)
- » Pressure Equipment Directive
- » Quality Management System ISO 9001
- » Environmental Management System ISO 14001
- » IT Management System ISO 27001
- » Health and Safety Management System ISO 45001
- » Energy Management System ISO 50001
- » Asset Management System ISO 55001
- » Accreditation of testing center according to ISO/IEC 17025
- » ECM (Entity in Charge of Maintenance)



### WORLDWIDE SUPPORT

The international network of sales teams, technical sales, licensees and partners provides an essential proximity to customers and allows comprehensive customer service.



# OIL & GAS PRODUCTS AND PRODUCT SOLUTIONS

All over the world the oil and gas industry relies on our customized, safe, environmentally friendly tubular solutions.

## OCTG

Casing, Tubing and Accessories are available in API or Proprietary Grades, combined with API or Proprietary Connections, as doped versions or as dope-free DryTec® connections.

Internal and external coating solutions for all products can be offered with external partners.



**Casing**



**Tubing**



**Accessories**

- » Pup Joints
- » Crossovers
- » Couplings

# TUBING MANUFACTURING RANGE

Pipe Outside Diameter		Weight						
		P.E.		NU		EU		
inch	mm	ppf	kg/m	ppf	kg/m	ppf	kg/m	
1.660	42.16	2.05	3.06	-	-	-	-	
		2.27	3.39	2.30	3.42	2.40	3.57	
		3.00	4.46	3.03	4.51	3.07	4.57	
1.900	48.26	2.37	3.54	-	-	-	-	
		2.72	4.05	2.75	4.09	2.90	4.32	
		3.63	5.41	3.65	5.43	3.73	5.55	
		4.41	6.56	4.42	6.58	-	-	
		5.13	7.64	5.15	7.66	-	-	
2.063	52.40	3.18	4.73	-	-	-	-	
		4.42	6.58	-	-	-	-	
2 ¾	60.32	3.94	5.87	4.00	5.95	-	-	
		4.44	6.61	4.60	6.85	4.70	6.99	
		5.03	7.49	5.10	7.57	-	-	
		5.76	8.57	5.80	8.63	5.95	8.85	
		6.56	9.76	6.60	9.82	-	-	
		7.32	10.89	7.35	10.94	7.45	11.09	
2 ⅞	73.02	6.17	9.17	6.40	9.52	6.50	9.67	
		7.67	11.41	7.80	11.61	7.90	11.76	
		8.45	12.57	8.60	12.80	8.70	12.95	
		9.21	13.72	9.35	13.91	9.45	14.06	
		10.40	15.49	10.50	15.63	-	-	
		11.45	17.05	11.50	17.11	-	-	
3 ½	88.90	7.58	11.29	7.70	11.46	-	-	
		8.81	13.12	9.20	13.69	9.30	13.84	
		9.92	14.76	10.20	15.18	-	-	
		12.53	18.64	12.70	18.90	12.95	19.27	
		13.63	20.28	13.70	20.62	-	-	
		14.11	21.00	14.30	21.28	-	-	
		14.68	21.84	14.70	22.16	-	-	
		15.39	22.90	15.50	23.07	-	-	
		16.83	25.04	17.00	25.30	-	-	
4	101.60	9.12	13.57	9.50	14.14	-	-	
		10.47	15.57	10.70	-	11.00	16.37	
		12.95	19.27	13.20	19.64	-	-	
		15.90	23.67	16.10	23.96	-	-	
		18.71	27.84	18.90	28.13	-	-	
		22.11	32.89	22.20	33.04	-	-	
4 ½	114.30	12.25	18.23	12.60	18.75	12.75	18.97	
		15.00	22.32	15.20	22.62	-	-	
		16.77	24.90	17.00	25.30	-	-	
		18.71	27.84	18.90	28.13	-	-	
		21.38	31.82	21.50	32.00	-	-	
		23.59	35.10	23.70	35.27	-	-	
		26.06	38.79	26.10	38.84	-	-	



Please note: Nominal weight and wall thickness may be different for Proprietary Connections!

P.E. (P)...Plain end, non upset / NU (N)...Non upset T&C / EU (U)...External Upset T&C / HU...Heavy upset end / T&C...Threaded and coupled

	Wall Thickness		Length	End Finishing
	inch	mm	Range	
	0.125	3.18	1,2,3	P
	0.140	3.56	1,2,3	P, N, U
	0.191	4.85	1,2,3	P, N, U
	0.125	3.18	1,2,3	P
	0.145	3.68	1,2,3	P, N, U, VAGT
	0.200	5.08	1,2,3	P, N, U, VAGT
	0.250	6.35	1,2,3	P, N
	0.300	7.62	1,2,3	P, N
	0.156	3.96	1,2,3	P
	0.225	5.72	1,2,3	P
	0.167	4.24	1,2,3	P, N, HU
	0.190	4.83	1,2,3	P, N, U, HU, VAGT, VAsuperior, VAhyper
	0.218	5.54	1,2,3	VAGT, VAsuperior, VAhyper
	0.254	6.45	1,2,3	P, N, U, HU, VAGT, VAsuperior
	0.295	7.49	1,2,3	P, N, HU
	0.336	8.53	1,2,3	P, N, HU
	0.217	5.51	1,2,3	P, N, U, HU, VAGT, VAsuperior, VAhyper
	0.276	7.01	1,2,3	P, N, U, HU, VAGT, VAsuperior, VAhyper
	0.308	7.82	1,2,3	P, N, U, HU, VAGT, VAsuperior, VAhyper
	0.340	8.64	1,2,3	P, N, U, HU
	0.392	9.96	1,2,3	P, N
	0.440	11.18	1,2,3	P, N
	0.216	5.49	1,2,3	P, N, HU, VAGT, VAsuperior
	0.254	6.45	1,2,3	P, N, U, HU, VAGT, VAF, VAsuperior, VAhyper
	0.289	7.34	1,2,3	P, N, HU, VAGT, VAF, VAsuperior, VAhyper
	0.375	9.52	1,2,3	P, N, U, HU, VAGT, VAsuperior, VAhyper
	0.413	10.50	1,2,3	VAGT, VAsuperior
	0.430	10.92	1,2,3	P, N, HU, VAsuperior
	0.450	11.43	1,2,3	VAGT, VAsuperior
	0.476	12.09	1,2,3	P, N, VAsuperior
	0.530	13.46	1,2,3	P, N
	0.226	5.74	1,2,3	P, N, HU, VAGT, VAF, VAsuperior
	0.262	6.65	1,2,3	P, U, HU, VAGT, VAsuperior
	0.330	8.38	1,2,3	P, N, HU, VAGT, VAsuperior
	0.415	10.54	1,2,3	P, N
	0.500	12.70	1,2,3	P, N
	0.610	15.49	1,2,3	P, N
	0.271	6.88	1,2,3	P, N, U, HU, VAGT, VAF, VAroughneck, VAsuperior, VAwizard, VAhyper
	0.337	8.65	1,2,3	P, N, HU, VAGT, VAsuperior, VAhyper
	0.380	9.56	1,2,3	P, N, HU, VAGT, VAsuperior
	0.430	10.92	1,2,3	P, N, HU, VAGT, VAsuperior
	0.500	12.70	1,2,3	P, N, HU
	0.560	14.22	1,2,3	P, N, HU
	0.630	16.00	1,2,3	P, N

# CASING MANUFACTURING RANGE

Pipe Outside Diameter		Weight				Wall Thickness		
		P.E.		NU				
inch	mm	ppf	kg/m	ppf	kg/m	inch	mm	
4 ½	114.30	9.41	14.02	9.50	14.14	0.205	5.21	
		10.24	15.24	10.50	15.63	0.224	5.69	
		11.36	16.91	11.60	17.26	0.250	6.35	
		13.05	19.44	13.50	20.09	0.290	7.37	
		15.00	22.32	15.10	22.47	0.337	8.56	
5	127.00	11.24	16.74	11.50	17.11	0.220	5.59	
		12.84	19.12	13.00	19.35	0.253	6.43	
		14.88	22.16	15.00	22.32	0.296	7.52	
		17.95	26.70	18.00	26.79	0.362	9.19	
		21.32	31.73	21.40	31.85	0.437	11.10	
		23.11	34.39	23.20	34.53	0.478	12.14	
		24.05	35.80	24.10	35.86	0.500	12.70	
5 ½	139.70	13.71	20.41	14.00	20.83	0.244	6.20	
		15.36	22.85	15.50	23.07	0.275	6.98	
		16.89	25.13	17.00	25.30	0.304	7.72	
		19.83	29.52	20.00	29.76	0.361	9.17	
		22.56	33.57	23.00	34.23	0.415	10.54	
		25.57	38.05	26.00	38.65	0.476	12.09	
		26.72	39.78	26.80	39.88	0.500	12.70	
		29.67	44.14	29.70	44.20	0.562	14.27	
		32.57	48.49	32.60	48.51	0.625	15.88	
		35.35	52.61	35.30	52.53	0.687	17.45	
		38.08	56.68	38.00	56.55	0.750	19.05	
5 ¾	146.05	16.12	24.00	16.40	24.95	0.276	7.00	
		17.63	26.26	17.90	27.21	0.303	7.70	
		18.28	27.23	19.00	28.26	0.315	8.00	
		19.35	28.82	19.70	29.78	0.335	8.50	
		20.41	30.41	20.40	31.40	0.354	9.00	
6	152.40	23.95	35.64	24.50	36.43	0.400	10.16	
6 ⅝	168.28	19.51	29.06	20.00	29.76	0.288	7.32	
		23.60	35.13	24.00	35.72	0.352	8.94	
		27.67	41.18	28.00	41.67	0.417	10.59	
		31.23	46.46	32.00	47.62	0.475	12.06	
7	177.80	22.65	33.70	23.00	34.23	0.317	8.05	
		25.69	38.21	26.00	38.69	0.362	9.19	
		28.75	42.78	29.00	43.16	0.408	10.36	
		31.70	47.20	32.00	47.62	0.453	11.51	
		34.61	51.52	35.00	52.09	0.498	12.65	
		37.29	55.52	38.00	56.55	0.540	13.72	
		42.65	63.41	42.70	63.54	0.626	15.88	
		46.36	69.01	46.40	69.05	0.687	17.45	
		50.11	74.58	50.10	74.56	0.750	19.05	
7 ⅝	193.68	25.59	38.08	26.40	39.54	0.328	8.33	
		29.06	43.24	29.70	44.70	0.375	9.53	
		33.07	49.22	33.70	50.68	0.430	10.92	
		38.08	56.68	39.00	58.12	0.500	12.70	
		42.43	63.14	42.80	64.60	0.562	14.27	
		44.71	66.54	45.30	68.00	0.595	15.11	

Please note: Nominal weight and wall thickness may be different for Proprietary Connections!

P.E. (P)...Plain end, non upset / T&C...Threaded and coupled / SC (S)...Short round thread T&C / LC (L)...Long round thread T&C / BC (B)...Buttress T&C

	Length	End Finishing
	Range	
	1,2,3	P, S
	1,2,3	P, S, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, S, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAwizard
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAxplorer, VAwizard, VAhyper
	1,2,3	P, L, B, VAroughneck, VAxplorer, VAwizard
	1,2,3	P, S
	1,2,3	P, S, L, B, VAGT, VAsuperior
	1,2,3	P, S, L, B, VAGT, VAF, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, S
	1,2,3	P, S, L, B, VAGT, VAF, VAsuperior
	1,2,3	P, S, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAwizard, VAhyper
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAxplorer, VAtitan-TC, VAwizard, VAsuperior-ET, VAhyper, VAtitan-SF
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAxplorer, VAtitan-TC, VAwizard, VAsuperior-ET, VAhyper, VAtitan-SF
	1,2,3	VAGT, VAroughneck, VAsuperior, VAxplorer, VAwizard, VAhyper
	1,2,3	P, VAxplorer, VAhyper
	1,2,3	P
	1,2,3	P
	1,2,3	P
	1,2,3	P
	1,2,3	P, VAGT, VAsuperior
	1,2,3	P, VAGT, VAsuperior
	1,2,3	B
	1,2,3	B, VAGT, VAsuperior
	1,2,3	B, VAGT, VAsuperior
	1,2,3	VAxplorer, VAtitan-TC, VAroughneck
	1,2,3	P, S, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, S, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAroughneck, VAsuperior
	1,2,3	P, S, L, B, VAGT, VAroughneck, VAsuperior, VAhyper
	1,2,3	P, S, L, B, VAGT, VAroughneck, VAsuperior, VAxplorer, VAtitan-TC, VAsuperior-ET, VAhyper
	1,2,3	P, L, B, VAGT, VAroughneck, VAsuperior, VAxplorer, VAtitan-TC, VAsuperior-ET, VAhyper
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior, VAxplorer
	1,2,3	P, L, B, VAGT, VAF, VAroughneck, VAsuperior
	1,2,3	P, L, B, VAGT, VAsuperior
	1,2,3	P
	1,2	P
	1,2	P
	1,2,3	P, L, B, VAroughneck, VAsuperior, VAhyper
	1,2,3	P, L, B, VAF, VAroughneck, VAsuperior, VAhyper
	1,2,3	P, L, B, VAroughneck, VAsuperior, VAhyper
	1,2	P, L, B, VAF, VAroughneck, VAsuperior, VAhyper
	1,2	P, L, B, VAroughneck, VAsuperior, VAhyper
	1,2	P, L, B, VAroughneck





# CONNECTIONS

## API Standard Connections

All products are available with API Standard Connections.

## Proprietary Connections

voestalpine Tubulars Proprietary Connections offer benefits which are not addressed by the API specification or exceed the API standards. Proprietary Connections are available as doped versions or as dope-free DryTec® Connections.

### Threaded and Coupled Connections:



#### VAGT®

the CAL II connection with millions of feet installed worldwide



#### VExplorer®

the high torque CAL IV casing connection for extended reach wells and rotation operations



#### VAwizard®

the connection for deviated multi-fractured horizontal wells with the opportunity to rotate



#### VAroughneck®

the enhanced torque casing connection for rotated strings



#### VAsuperior®

the CAL IV connection for extreme conditions



#### VAsuperior®-ET

the gas tight connection with enhanced torque capability

### Flush Connections



#### VAF

the CAL II flush connection for slim hole designs, workover strings, liners and tiebacks

### Wedge-type Connection Family



#### VAtitan®-TC

the fit for purpose tested casing connection for extreme torque capabilities



#### VAtitan®-SF

the casing connection combining high torque with slim design

Further connection types are available upon request.

# GRADES



## Standard Grades

All products are available in API Standard Grades. In addition we offer numerous Proprietary Grades. Also tailor-made customer specifications can be fulfilled upon request.

## Proprietary Grades – the VA series

The VA series meet customer requirements that are not addressed by the API specification or exceed the API standards.

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





# DryTec®

## Because future matters

This dope-free solution for thread connections increases your efficiency and safety on site and helps you to protect the environment.

**DryTec® is currently available for VAGT® and VAsuperior®.**



# SERVICES



myTubulars

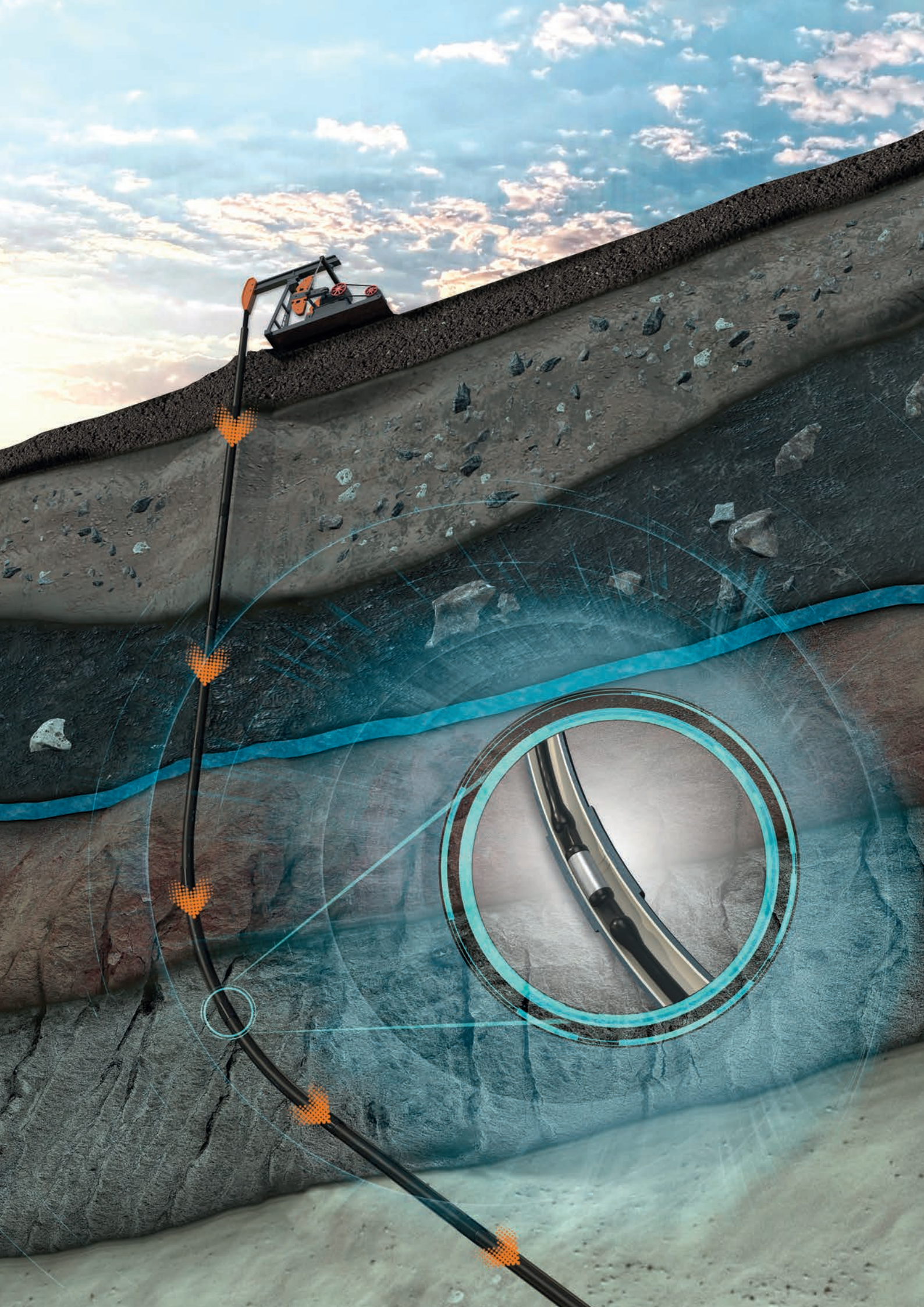
**myTubulars APP**  
**PRODUCT DATASHEETS,**  
**FIELD SERVICE**  
**AND LICENSEES**

Generate your product datasheets and find more information about our products, field assistance and licensees close to your location on the customer service page at [www.voestalpine.com/tubulars](http://www.voestalpine.com/tubulars) or in the myTubulars App – available for free in the App stores for all iOS and Android devices.

GET THE APP!









# PexTec®

## The smart solution for unlimited runtime

PexTec® offered by voestalpine Tubulars provides benefits exceeding the standards and surpassing alternative lining solutions for sucker rod or progressive cavity pumped wells currently available on the market.



## PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

PexTec®

### INCREASED RUNTIME

- » Saves workover costs

### SOLUTION FOR DIRECTIONAL WELLS

- » Protects bended sections

### SMOOTH INTERNAL SURFACE

- » Reduces friction and energy costs

### THERMAL INSULATION

- » Reduces paraffin impairment costs





# OFFSHORE SOLUTIONS

## Standard and Proprietary Grades & voestalpine Tubulars CAL IV connections

For Offshore applications, the following connections are the typical products of choice to ensure well integrity.

In addition, we offer technical support from our R&D team and testing facilities on-site, for tailor-made solutions and specific requirements, where tests can be performed before use to prevent our customers from troubles.



VAsuperior®

VExplorer®

## PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

### VAsuperior®

- » Gas tight under combined loads

### VExplorer®

- » Also provides high torque resistance for extended reach, bending and rotational operations

These connections can be combined with API or Proprietary Grades and tailor-made solutions are available upon request.

# GEOHERMAL SOLUTIONS

**The product of choice for geothermal applications: pipes with VAsuperior® or VAroughneck® connections!**

Geothermal energy is one of the renewable energy resources where comparable pipes and projects as for conventional oil and gas are used. Also, the well design is similar, whereby voestalpine Tubulars can contribute its long-term know-how in the production of seamless steel tubular products for the geothermal energy segment and has the competence to develop further technologies.



VAsuperior®

VAroughneck®

## PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

### VAsuperior®

#### METAL TO METAL SEAL

- » Ensures well integrity

#### RESILIENT THREAD DESIGN

- » Prevents from damages during transport, handling and installation

#### FAST & EASY MAKE-UP

- » Saves running time

#### DryTec®

#### DOPE-FREE THREAD COATING

- » No thread compound required

### VAroughneck®

#### STRONG CONNECTION

- » Ensures well integrity

#### ROTATION DURING INSTALLATION

- » Improves the quality of the cement bond

#### SMOOTH INTERNAL PROFILE

- » Minimizes turbulences
- » Perfect for internal coating – no coupling coating required

#### COMPATIBILITY WITH API BUTTRESS

- » Saves costs

## Dimensions & Grades

- » Outside diameter of 2 3/8" (60.32 mm) up to 7 5/8" (193.68 mm)
- » API and Proprietary Grades with application oriented properties up to 13% Cr content
- » Further products and solutions are available upon request

## Additional services

- » Coatings – increase life time and flow rates
- » Thermal insulation
- » Surface machining
- » Lining of pipes









# HYDROGEN APPLICATIONS

## Explore the customized solutions for hydrogen applications

voestalpine Tubulars has the essential know-how in steel and tube production, the long-term experience in connection development and manufacturing for the oil and gas industry as well as the testing capabilities to design the optimal product solutions – all these parameters are prerequisite for safe use of hydrogen too.

Therefore, the company already offers the following product solutions, which are already successfully installed in several hydrogen storage and line pipe projects.



VAhyper®

## PRODUCT CHARACTERISTICS & CUSTOMER BENEFITS

### VAhyper®

- » The hydrogen-tight premium connection
- » Connection successfully tested according to an in-house developed fit-for-purpose test protocol with requirements of underground
- » The general gas-tightness is approved by ISO 13679 CAL IV
- » Dimension range up to 7 5/8" (193.68 mm)

### TAILOR-MADE CASING & TUBING GRADES

- » VA-H2-L80-1
- » VA-H2-J55
- » VAhyper® combined with H<sub>2</sub> grades ensures improved resistance against hydrogen embrittlement
- » These grades are qualified according to actual test methods for materials with resistance against molecular hydrogen environment

### TAILOR-MADE LINE PIPE GRADES FOR DISTRIBUTION LINES

- » L360N, L360Q
  - » P235 acc. EN/ISO 10216-2
  - » X42 up to X70 acc. API 5L
- All these grades are either tested or in progress of testing for hydrogen applications.

Further products and solutions available upon request.



# LINE PIPE & LINE PIPE SOLUTIONS

Available in standard and customized size ranges and in various grades according to numerous international standards as well as customer specifications or standard combinations. Internal and external pipe coating solutions or welding solutions can be provided by internal and external partners.

For further information regarding welding consumables, read more on [www.voestalpine.com/welding](http://www.voestalpine.com/welding)

## Main applications:

- » Onshore pipeline from wellhead to refinery (gathering line)
- » Conveyance of liquid and gas media also for sour service
- » Cooling systems
- » Gas, water and hydraulic lines
- » Sour service applications
- » Hydrofluoric acid alkylation service applications

## Sample list of standards:

- » API 5 L incl. Annexes
- » ASTM/ASME A106/SA & 106/ A/SA 53 – Grade A, B, C
- » ASTM/ASME A/SA 333 – Grade 6
- » ISO 3183 / PSL 1 – PSL 2

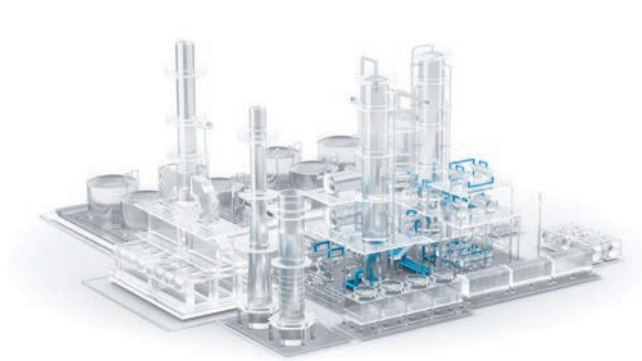
## Size range:

From 26.90 mm (1.059 inch) to 200.00 mm (7.874 inch) outside diameter with wall thickness from 2.90 mm (0.114 inch) to 35.00 mm (1.378 inch) depending on combinations.



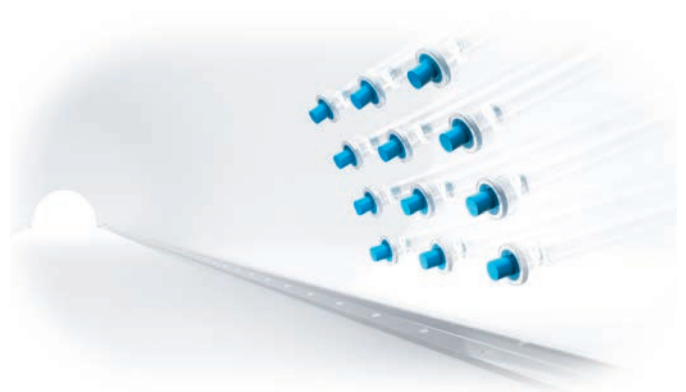
# INDUSTRIAL PIPE PRODUCT SOLUTIONS

Customers in and suppliers to the industrial segments rely on customized, safe, environmentally friendly tubular solutions of voestalpine Tubulars. All products are manufactured in accordance with internationally recognized standards (DIN, EN, ASTM/ASME) to meet the highest quality requirements, in a size range from a diameter of 26.70 mm to 203.20 mm (1.050 inch to 8 inch) and a wall thickness of 4.00 mm to 28.00 mm (0.157 inch to 1.102 inch), depending on combinations and finishing requirements.



## TUBES AND PIPES FOR PRESSURE APPLICATIONS

- » Refineries / downstream – for hydrocarbon processing / media extraction
- » Coal fired power plants / power generation for heat transfer units
- » Chemical and petrochemical industry for waste heat recovery units
- » Industrial high pressure plants / equipment
- » Fittings and elbows



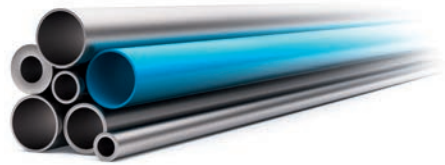
## GEOTECHNICAL SYSTEMS AND CIVIL CONSTRUCTION

- » Micropiles for foundations, soil nailing and anchorages
- » Umbrella systems for tunneling excavations
- » Drill pipes for horizontal-directional-drilling (HDD)
- » Micro and ground anchors
- » Tunnel anchors
- » Self-drilling anchors (SDA) and bolts



### **ToughTubes®**

Our ToughTubes® are seamless thermomechanically rolled steel pipes. A team of technicians at voestalpine Tubulars has developed a production technology to meet our customers' requirements for high-strength seamless steel pipes.



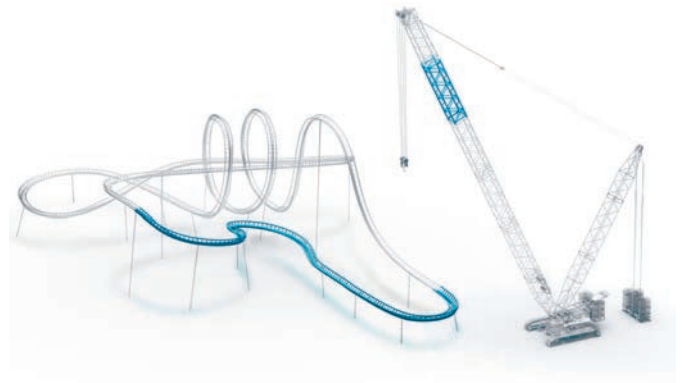
### **HOLLOWS FOR REDRAW**

voestalpine Tubulars has many years of experience in supplying seamless hot-rolled semi-finished (ex cooling bed) steel pipes for the production of cold drawn precision pipes.



## **MOBILITY**

- » Non-driven axles
- » Pulleys, vibration absorbers, fly wheels and bushings
- » Transmission and engine parts
- » Body frames for trucks and bogie frames for rail vehicles
- » Cardan shafts



## **YELLOW GOODS AND OTHER APPLICATIONS**

- » Semi-finished products for hydraulic cylinders
- » Accumulator shells, gas bottles and diving cylinders
- » Lattice boom sections for cranes
- » Concrete pump pipes
- » Oil and Gas (manifolds, perforation guns, stators for eccentric pumps)
- » Rollercoasters and other amusement rides
- » Agricultural equipment

# HOLLOW SECTIONS

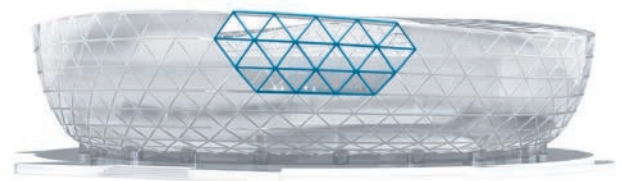
## PRODUCT SOLUTIONS

Hot-rolled seamless square and rectangular pipes are primarily used in agriculture, constructions, mechanical engineering and mobility. Discover the world of hollow sections from voestalpine Tubulars and experience quality, reliability and innovation at first hand.



### AGRICULTURE

- » Self-propelled machines, e.g.
  - › machines for crop protection and forestry technology
  - › harvester
- » Cultivation machinery, e.g.
  - › machines for soil cultivation, such as plows, disk harrows or grubber
  - › seeding machinery
- » Tractors, e.g.
  - › Roll-Over-Protective-Structure (ROPS)



### CONSTRUCTIONS

- » Airports & sport stadiums
- » Building, hall and roof constructions
- » Bridge building
- » Rides (rollercoaster)
- » Offshore constructions (jack-up rigs, platforms)
- » Wind energy (offshore, onshore)
- » Support structure for large-scale and photovoltaic systems



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Welding solutions can be provided by our internal partner voestalpine Böhler Welding. For further information regarding welding consumables, read more on [www.voestalpine.com/welding](http://www.voestalpine.com/welding)



## MECHANICAL ENGINEERING

- » General mechanical engineering, e.g.
  - › in the automation
  - › in the Yellow Goods segment
- » Crane construction, e.g.
  - › booms for tower cranes and mobile cranes
  - › for maritime cranes, such as ship or harbor cranes
- » Transport systems
- » Lifting platforms



## MOBILITY

- » Frame parts
- » Cabin/roll over protection
- » Trailers (axle tubes, support structure, etc.)
- » Base carrier for trailers
- » Fall-Over-Protective-Structure (FOPS)

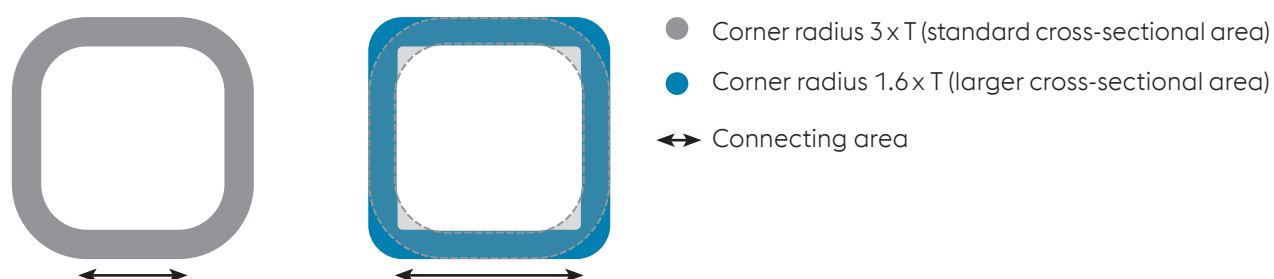


# VTS®-edgeTubes

To cover an even larger portfolio of tubular products, the range of seamless round tubes has been supplemented by seamless square and rectangular hollow sections from voestalpine Tubulars at the Kindberg (Austria) site.

voestalpine Tubulars has many years of experience in the production of seamless round tubes and is thus able to produce hot-rolled seamless square and rectangular hollow sections up to 25 mm wall thickness.

## DESIGN CHARACTERISTICS



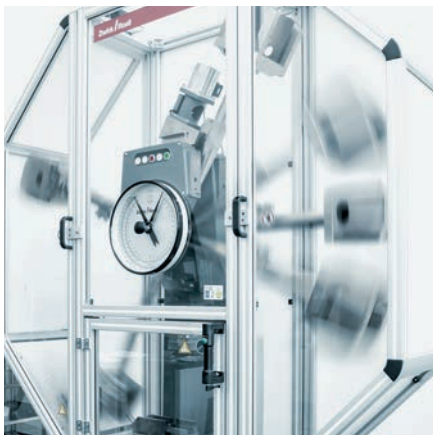
TECHNICAL DATA AT A GLANCE			
Corner radius	$R_0 \leq 1.6 \times T$ across the entire product range, tighter radius up to $\leq 1 \times T$ upon request (depending on dimension & wall thickness), specified radius and tolerances possible upon agreement		
Standards	DIN EN 10210-1, -2, -3, ASTM A501/A501M, CE-marking, EU Construction Products Regulation, DIN EN 10225 for offshore constructions upon request		
Dimensions	Square	40 x 40 mm to 170 x 170 mm	1 ½ x 1 ½ inch to 6 ⅝ x 6 ⅝ inch
	Rectangular	50 x 30 mm to 200 x 100 mm	2 x 2 ½ inch to 8 x 4 inch
Wall thickness	up to 25 mm (>25 mm upon request)		up to 1 inch (>1 inch upon request)
Lengths	5,000 mm to 14,000 mm		16 to 46 ft
Steel grades	S235 to S890 to DIN EN or Grade A, B, C to ASTM, VTS-500 and other tailor-made customer specifications upon request		





# 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.