



VÁLCOVNY TRUB CHOMUTOV a.s.



VÁLCOVNY TRUB
CHOMUTOV



ŽELEZÁŘNY
HRÁDEK



POLDI

VÁLCOVNY TRUB CHOMUTOV a.s.



**TUBES - SEAMLESS CARBON
& ALLOY STEEL**

TUBES - HOT EXTRUDED

BARS

SPECIAL PROFILES

INGOTS

SYSTEM AND PRODUCT CERTIFICATES:



SYSTEM:

- EN ISO 9001
- EN ISO 14001

PRODUCT:

- API 5L
- CPR EN 10210 - 1,2
- PED 2014/68/EU
- AD-2000 Merkblatt W O
- Lloyd's Register EMEA
- Bureau Veritas
- DNV.GL

SYSTEM AND PRODUCT CERTIFICATES:



SYSTEM:

- EN ISO 9001

PRODUCT:

- DNV.GL
- PED 2014/68/EU
- AD-2000 Merkblatt W O

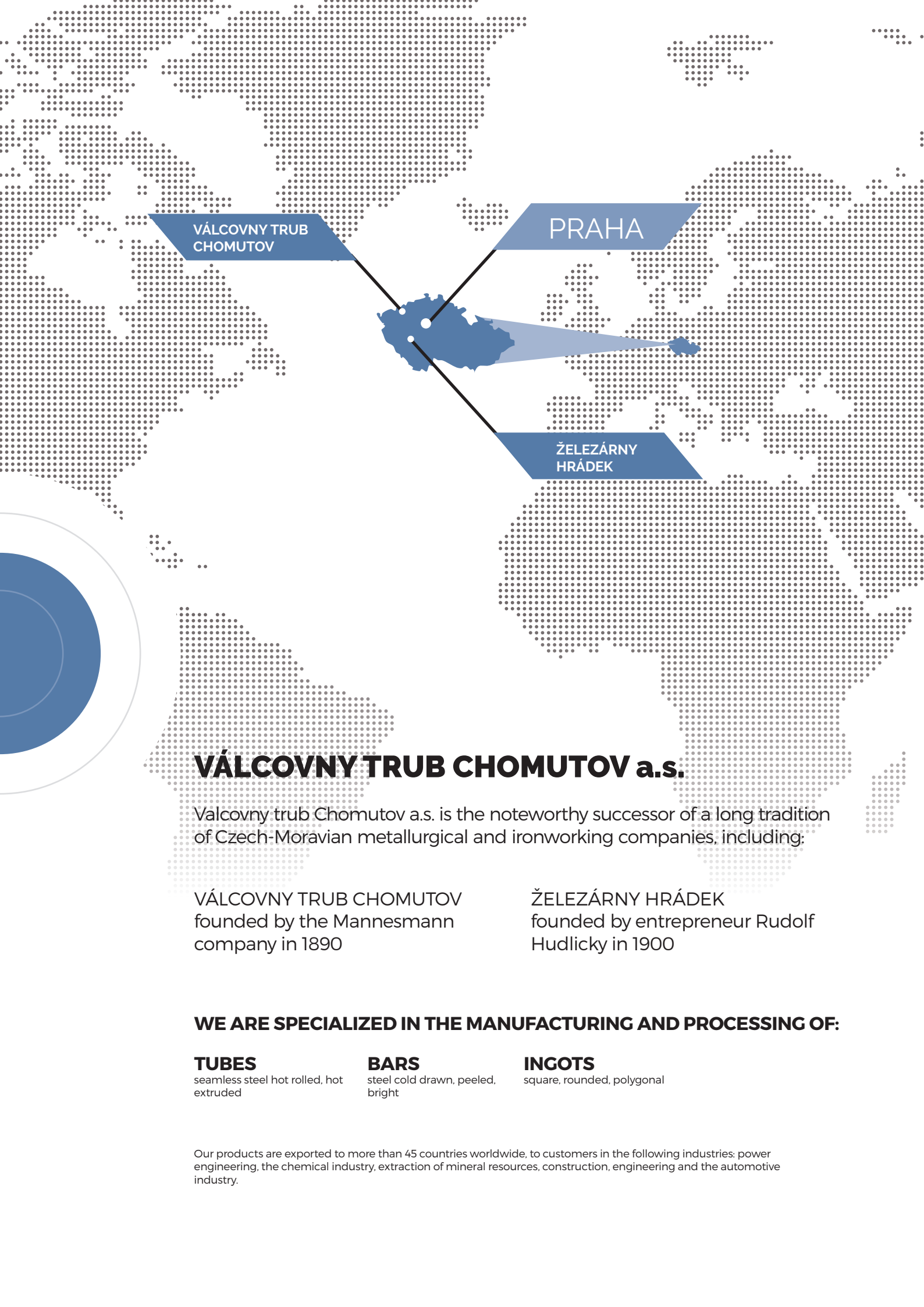


VÁLCOVNY TRUB CHOMUTOV

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ŽELEZÁRNÝ HRÁDEK

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VÁLCOVNY TRUB
CHOMUTOV

PRAHA

ŽELEZÁRNY
HRÁDEK

VÁLCOVNY TRUB CHOMUTOV a.s.

Valcovny trub Chomutov a.s. is the noteworthy successor of a long tradition of Czech-Moravian metallurgical and ironworking companies, including:

VÁLCOVNY TRUB CHOMUTOV
founded by the Mannesmann
company in 1890

ŽELEZÁRNY HRÁDEK
founded by entrepreneur Rudolf
Hudlický in 1900

WE ARE SPECIALIZED IN THE MANUFACTURING AND PROCESSING OF:

TUBES

seamless steel hot rolled, hot
extruded

BARS

steel cold drawn, peeled,
bright

INGOTS

square, rounded, polygonal

Our products are exported to more than 45 countries worldwide, to customers in the following industries: power engineering, the chemical industry, extraction of mineral resources, construction, engineering and the automotive industry.





**VÁLCOVNY TRUB
CHOMUTOV**

Seamless carbon steel tubes - standards EN / DIN / CSN / GOST

EN 10216	PART 1	PART 2	PART 3	PART 4
STEEL GRADE	P195	P195GH	P275NL1/NL2	P215NL
	P235	P235GH	P355N/NH	P265NL
	P265	P265GH	P355NL1/NL2	
PART 1:	Tubes can be delivered either in quality grade TR1 or TR2.			
PART 2, 3, 4:	Tubes can be delivered in test categories TC1 or TC2.			
EN 10225				
STEEL GRADE	S355G1+N	S355G14+N	S355G15+N	
EN 10210-1, 2				
STEEL GRADE	S235JRH	275J0H	S355J0H	S355NH / NLH
		S275J2H	S355J2H	S420NH / NLH
			S355K2H	S460NH / NLH
EN 10297-1	PART 1			
STEEL GRADE	E235, E275, E275K2 E315, E355, E355K2, E470			

20MnV6/1.5217
MECHANICAL PROPERTIES

Re min = 410 MPa
Rm min = 550 MPa
A = 18 %

C	MN	SI	P	S	V
0.16 – 0.22	1.30 – 1.70	0.10 – 0.50	max. 0.030	max. 0.030*	0.10 – 0.20

DIN 1629				
STEEL GRADE	St 37.0	St 44.0	St 52.0	
DIN 17121 // EN 10220				
STEEL GRADE	RSt 37-2	St 44-2	St 52-3	
	St 37-3	St 44-3		
ČSN 42 0250 // ČSN 42 0251				
STEEL GRADE	11 353	11 503	12 021	12 040
	11 453	11 523	12 022	
GOST 8731 // GOST 8732 // GOST 19281				
STEEL GRADE	10, 20			
	09G2S with yield limit up to 345 MPa			
EN ISO 3183	PSL 1		PSL 2	
STEEL GRADE	L245 (B)	L245N (BN)	L245NE (BNE)	
	L290 (X42)	L290N (X42N)	L290NE (X42NE)	
	L320 (X46)	L320N (X46N)	L320NE (X46NE)	
	L360 (X52)	L360N (X52N)	L360NE (X52NE)	
	L415 (X60)	L415N (X60N)	L415NE (X60NE)	



LENGTH RANGE	Random - up to 14 m Fixed - after agreement with tolerance -0/+50 mm
TUBE ENDS	Plain or after agreement with bevel 30° +5°/-0° or simple or compound angle bevel acc to ASME B16.25 (2a/3a). After agreement tube ends can be protected by plastic caps or plastic bevel protectors.
SURFACE	Bare or outside surface protected by transparent or black lacquer as short time corrosion protection. For EN ISO 3183 PSL2 outside and inside surface with non-destructive testing acc to EN ISO 10893-10 U3/C and EN ISO 10893-8.
PACKING	Tubes are delivered loosed.
CERTIFICATION	In accordance with EN 10204 either in English, German, French or Russian languages. NOTE: The manufacturer's certified QA system has undergone a specific assessment as per PED 2014/68/EU
MARKING	In accordance with standard and customer's requirements.

Outside diameter [mm]	WALL THICKNESS [mm]																											
	10	11	12,5	14,2	16	17,5	20	22,2	25	28	30	31	33	40	43	50	51	52,0	54,0	55,0	58,0	60	62	65	68	70	72	75
273																												
279																												
298,5																												
305																												
318																												
323,9																												
330																												
343																												
355,6																												
368																												
377																												
394																												
406,4																												
419																												
426																												
445																												
457																												
470																												
495																												
508																												
521																												
530																												
546																												
559																												
572																												
610																												
620																												
630																												
660																												

EN 10216		Seamless steel tubes for pressure purposes - Technical delivery conditions
	PART 1	Non-alloy steel tubes with specified room temperature properties
	PART 2	Non-alloy and alloy steel tubes with specified elevated temperature properties
	PART 3	Alloy fine grain steel tubes
	PART 4	Non-alloy and alloy steel tubes with specified low temperature properties
EN 10225		Weldable structural steels for fixed offshore structures - Technical delivery conditions
EN 10210-1, 2		Hot finished structural hollow section of non-alloy and fine grain structural steels
		Technical delivery requirements and dimensions
EN 10297-1		Seamless circular steel tubes for mechanical and general engineering purposes
		Technical delivery conditions
	PART 1	Non-alloy and alloy steel tubes

DIN 1629	Hot formed seamless steel tubes from non-alloy steels with special quality requirements
	Technical and delivery conditions
DIN 17121	Seamless steel circular tubes for structural engineering purposes
EN 10220	Seamless and welded steel tubes - Dimension and masses per unit length
ČSN 42 0250	Hot formed seamless tubes
ČSN 42 0251	Seamless steel tubes with specified elevated temperature properties
GOST 8731	Hot rolled seamless steel tubes. Technical conditions
GOST 8732	Hot rolled seamless steel tubes. Assortment.
GOST 19281	Rolled material from steel with higher strength
EN ISO 3183	Oil and gas industry - steel pipes for linepipes

Seamless carbon steel tubes - standards ASTM / ASME / API 5L

	ASTM A53 / ASME SA53	ASTM A106 / ASME SA106	ASTM A252 / ASME SA252	ASTM A333 / ASME SA333
STEEL GRADE	A	A	Gr 2	Gr 1
	B	B	Gr 3	Gr 6
		C		

Manufacturer is authorized to use monogram API Spec. 5L - Licence number 5L - 0286.

API 5L	PSL 1		PSL 2
STEEL GRADE	A (L210)	X52 (L360)	BN (L245N)
	B (L245)	X56 (L390)	X42N (L290N)
	X42 (L290)	X60 (L415)	X52N - X52NO - X52NS (L360N, L360NO, L360NS)
	X46 (L320)		X60N (L415N)

standard pressure up to 20.5 MPa (2 970 psi)

LENGTH RANGE	Random - up to 14 m Fixed - after agreement with tolerance -0/+50 mm
TUBE ENDS	Plain or after agreement with bevel 30° +5°/-0° or single or compound angle bevel acc to ASME B16.25 (2a/3a). After agreement tube ends can be protected by plastic caps or plastic bevel protectors.
SURFACE	Bare or outside surface protected by transparent or black lacquer as short time corrosion protection. After agreement with non-destructive testing acc to ASTM E213. Pipes acc PSL2 always with non-destructive testing acc to ASTM E213.
PACKING	Tubes are delivered loosed.
CERTIFICATION	In accordance with EN 10204 either in English or German languages.
MARKING	In accordance with standard and customer's requirements.

ASTM A53 / ASME SA53	Standard specification for pipe, steel, black and hot-dipped, zinc-coated, welded and seamless
ASTM A106 / ASME SA106	Standard specification for seamless carbon steel pipe for high-temperature service
ASTM A252 / ASME SA252	Standard specification for welded and seamless steel pipe piles
ASTM A333 / ASME SA333	Standard specification for seamless and welded steel pipe for low-temperature
API 5L	Specification for linepipes

Outside diameter		WALL THICKNESS																							
		inch	.375	.438	.500	.562	.594	.625	.656	.688	.719	.750	.812	.844	.875	.938	.969	1.000	1.031	1.094	1.125	1.156	1.219	1.250	1.281
mm	NPS	mm	9,53	11,13	12,70	14,27	15,09	15,88	16,66	17,48	18,26	19,05	20,62	21,44	22,23	23,83	24,61	25,40	26,19	27,79	28,58	29,36	30,96	31,75	32,54
273	10					S80					S100			S120				XXS			S160				
323,8	12				XS	S60				S80				S100				XXS			S140				
355,6	14		STD	S40	XS	S60						S80				S100				S120				S140	
406,4	16		STD		XS				S60					S80					S100				S120		
457	18				XS	S40						S60				S80						S100			
508	20				XS	S40							S60						S80						S100
559	22														S60						S80				
610	24									S40							S60						S80		
660	26																								



1.312	1.375	1.406	1.438	1.500	1.531	1.562	1.594	1.625	1.693	1.750	1.781	1.812	1.875	1.969	2.000	2.062	2.125	2.200	2.344	2.559	2.677	2.953
33,32	34,93	35,71	36,53	38,10	38,89	39,67	40,49	41,28	43,00	44,45	45,24	46,02	47,63	50,01	50,80	52,37	53,98	55,00	59,54	65,00	68,00	75,00
S160																						
		S160																				
			S140				S160															
	S120					S140					S160											
				S120						S140				S160								
	S100							S120					S140					S160				
					S100							S120				S140			S160			

Seamless boiler steel tubes - standards EN / DIN / TU

EN 10216-2 TC2 // EN 10 220 // DIN 17175 III // DIN 2448	
STEEL GRADE	P235GH, P265GH, 16Mo3, 14MoV6-3, 13CrMo4-5, 10CrMo9-10, 13CrMo4-4, 15NiCuMoNb5-6-4, St35.8, St45.8, 15Mo3
STEEL GRADE	X10CrMoVNb9-1
TU-14-3R-55-2001	
STEEL GRADE	20, 12 CH1MF, 15GS, 15CHM, 15CH1MF
ČSN 42 0251	
STEEL GRADE	12022, 15 020, 15 121, 15 128, 15 313

Outside diameter [mm]	WALL THICKNESS [mm]																							
	17,5	20	22,2	25	28	30	31	33	40	43	50	51,0	52,0	54,0	55,0	58,0	60	62	65	68	70	72	75	
273																								
279																								
298,5																								
305																								
318																								
323,9																								
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508																								
521																								
530																								
546																								
559																								
572																								
610																								
620																								
630																								
660																								

Only steel grades P235GH, P265GH, 16Mo3 / St35.8, St45.8, 15Mo3

after agreement

VALID FOR STEEL GRADE X10CRMVNB9-1

Outside diameter [mm]	WALL THICKNESS [mm]							
	22,2	25	28	30	32	36	40	50
273								
323,9								
355,6								
368								
377								
406,4								

LENGTH RANGE	Random - up to 11 (12) m Fixed - after agreement with tolerance -0/+50 mm
TUBE ENDS	Plain or after agreement with bevel 30° +5°/-0° or single or compound angle bevel acc to ASME B16.25 (2a/3a). After agreement tube ends can be protected by plastic caps or plastic bevel protectors.
SURFACE	Descaled on outside and inside surface by grinding or pickling with non-destructive testing acc EN ISO 10893-10 or SEP 1915. Outside surface can be protected by transparent or black lacquer as short time corrosion protection.
PACKING	Tubes are delivered loosed.
CERTIFICATION	In accordance with EN 10204 in English, German, French or Russian languages. NOTE: The manufacturer's certified QA system has undergone a specific assessment as per PED 2014/68/EU and per AD 2000 Merkblatt W0/TRD100.
MARKING	In accordance with standard and customer's requirements.

EN 10216-2	Seamless steel tubes for pressure purposes - non-alloy and alloy steel tubes with specified elevated temperature
EN 10 220	Seamless and welded steel tubes - dimensions and masses per unit length
DIN 17175	Seamless steel tubes for high temperature
DIN 2448	Seamless and welded steel tubes - dimensions and masses per unit length
TU-14-3R-55-2001	Seamless steel tubes for pressure purposes. Technical conditions
ČSN 42 0251	Seamless steel tubes with specified elevated temperature properties



Seamless boiler steel tubes - standards ASTM A335 / ASME SA335

ASTM A335 // ASME SA 335 // ASTM A 999	
STEEL GRADE	P 1, P 2, P 11, P 12, P 22, P 36, P 5, P 91, P 9
LENGTH RANGE	Random - up to 11 (12) m Fixed - after agreement with tolerance -0/+50 mm
TUBE ENDS	Plain or after agreement with bevel 30° +5°/-0° or single or compound angle bevel acc to ASME B16.25 (2a/3a). After agreement tube ends can be protected by plastic caps or plastic bevel protectors.
SURFACE	Descaled on outside and inside surface by grinding or pickling with non-destructive testing acc ASTM E213. Outside surface can be protected by transparent or black lacquer as short time corrosion protection.
PACKING	Tubes are delivered loosed.
CERTIFICATION	In accordance with EN 10204 in English or German languages. NOTE: The manufacturer's certified QA system has undergone a specific assessment as per PED 2014/68/EU.
MARKING	In accordance with standard and customer's requirements.

Outside diameter		WALL THICKNESS																		
		inch	.688	.719	.750	.812	.844	.875	.938	.969	1.000	1.031	1.094	1.125	1.156	1.219	1.250	1.281	1.312	1.375
mm	NPS	mm	17,48	18,26	19,05	20,62	21,44	22,23	23,83	24,61	25,40	26,19	27,79	28,58	29,36	30,96	31,75	32,54	33,32	34,93
273	10			S100			S120				XXS			S160						
323.8	12		S80				S100				XXS			S140					S160	
355.6	14				S80				S100				S120				S140			
406.4	16						S80					S100				S120				
457	18				S60				S80						S100					S120
508	20					S60						S80						S100		
559	22							S60						S80						S100
610	24									S60						S80				
660	26																			

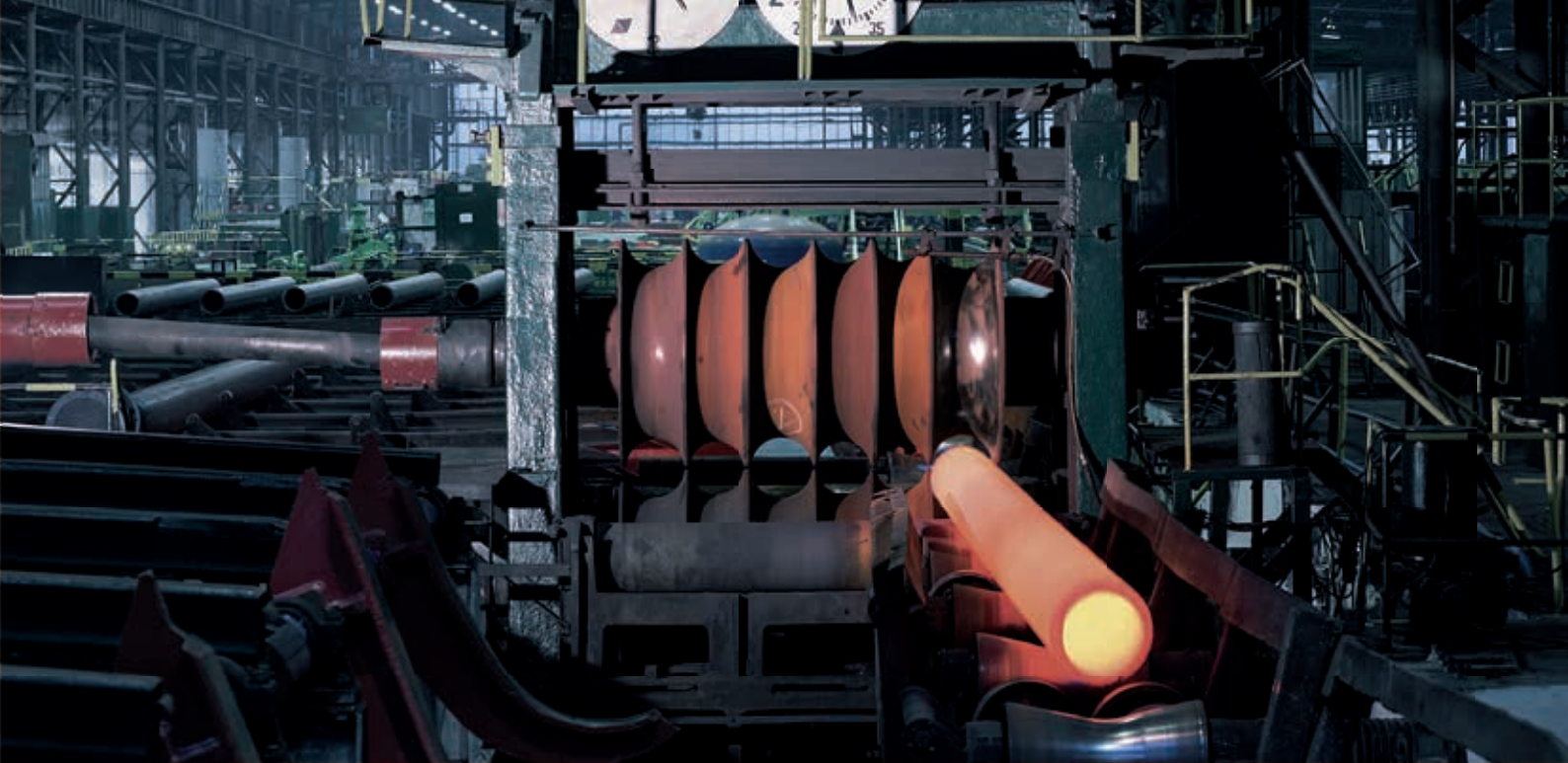
Only for steel grades P1, P2

after agreement

VALID FOR STEEL GRADE P5, P9 AND P91

Outside diameter		WALL THICKNESS														
		inch	.844	.875	1.000	1.031	1.094	1.125	1.219	1.250	1.312	1.406	1.438	1.562	1.594	2.000
mm	NPS	mm	21,44	22,23	25,4	26,19	27,79	28,58	30,96	31,75	33,32	35,71	36,53	39,67	40,49	50,8
273,1	10		S120		XXS			S160								
323,8	12		S100		XXS			S140			S160					
355,6	14						S120			S140		S160				
406,4	16					S100			S120				S140		S160	

ASTM A335 // ASME SA 335	Standard specification for seamless ferritic alloy-steel pipe for high temperature service
ASTM A 999	Specification for General requirements for specialized alloy and stainless steel pipe



1.406	1.438	1.500	1.531	1.562	1.594	1.625	1.693	1.750	1.781	1.812	1.875	1.969	2.000	2.062	2.125	2.344	2.441	2.559	2.677	2.835	2.953
35,71	36,53	38,10	38,89	39,67	40,49	41,28	43,00	44,45	45,24	46,02	47,63	50,01	50,80	52,37	53,98	59,54	62,00	65,00	68,00	72,00	75,00
S160																					
	S140				S160																
				S140					S160												
		S120						S140				S160									
						S120					S140				S160						
			S100							S120				S140		S160					







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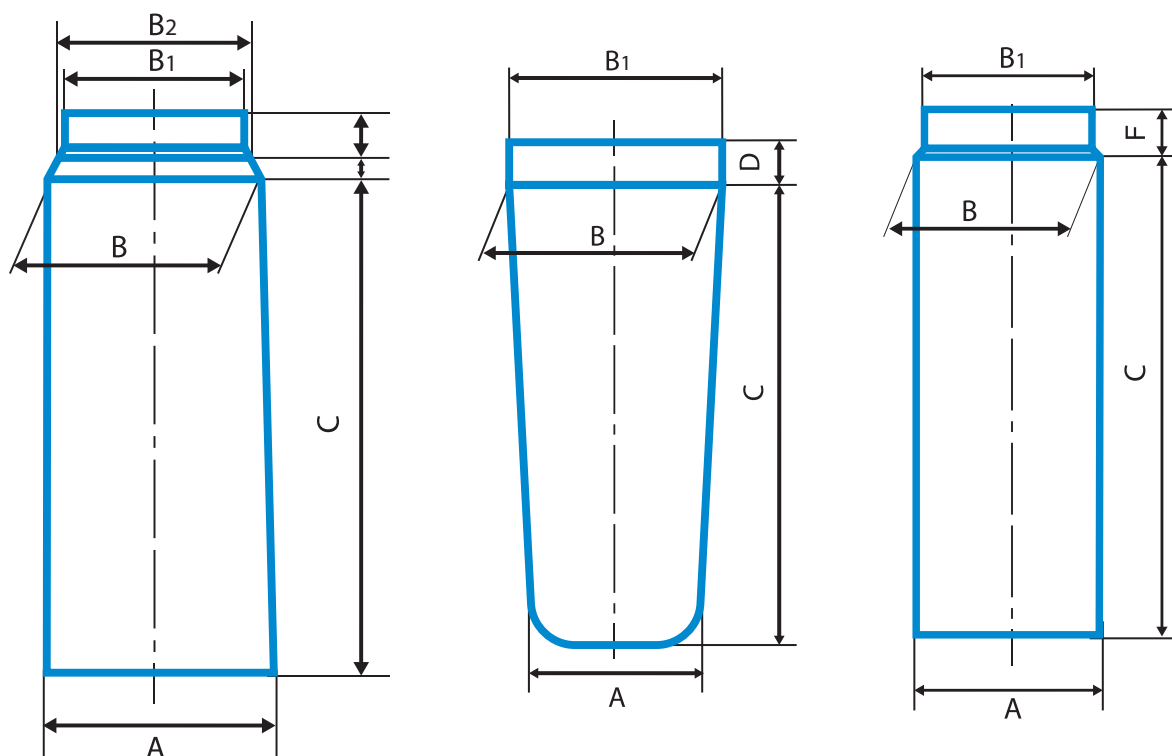


POLDI

Steel ingots supply

INGOT FORMATS - STEEL MILL IN HRADEK POLYGONAL, ROUNDED, SQUARE - BASIC DIMENSIONS

MOULDS	NOMINAL SIZE	A	B	B1	B2	C	D	D1	INGOT LENGTH	INGOT SHAPE	WEIGHT KG/PC
		mm	mm	mm	mm	mm	mm	mm			
K 460	460	465	440	440		1245	150		1395	rounded	1680
520 P	520	520	440	440		945	150		1095	polygonal	1575
KD 460	465	464	440	440		1440	150		1590	rounded	1940
585 P	585	603	554	554		1120	150		1270	polygonal	2460
650 PK	640	650	609	609		1090	150		1240	polygonal	2960
650 P	655	650	609	609		1525	150		1675	polygonal	3660
680 PK	680	680	665	665		1260	150		1410	polygonal	3540
680 P	685	680	665	665		1455	150		1605	polygonal	4050
365 V	365	288	365	365		1590	180		1770	square	1225
K 600	600	597	577	535		1120	160		1280	rounded	2460
KS 600	600	601	577	535		1340	160		1500	rounded	2950
KD 650	650	636	615	535	577	1445	160	70	1675	rounded	3660
K 650	650	632	615	535	577	1140	160	70	1370	rounded	2960
K 680	680	669	650	570	626	1225	160	70	1455	rounded	3540
KD 680	680	672	650	570	626	1420	160	70	1650	rounded	4050



PRODUCTION OF OTHER INGOT SHAPES POSSIBLE



STEEL MILL: PROPERTIES

Furnace type and capacity	EAF/LF/VD - 11 t/h
Source material	scrap
Quantity per heat	45 t
Max quantity of heats per day / week	270 / 1800 t
Min quantity for batch or PO	1 heat = 45 t
Possibility of vacuum degassing	yes VD
Checking method	visual inspection only
Steel killing	by Al
Max dispatched quantity per day and number of days/weeks to earliest possible dispatch	200 t / 10 days

ACHIEVED PARAMETERS AFTER VACUUM DEGASSING:

- deep dehydrogenization of low and medium alloy carbon steel melt to level below 1,5 ppm H₂, measured by HYDRIS device. Acc to requirement it is possible below 1,2 ppm H₂.
- deep desulfurization, S max 50 (30) ppm (analysis by LECO device)
- denitrogenization, N max 70 ppm - melt; N max 90 ppm - ingot
- total oxygen max 15 ppm



List of produced steel

The list of produced steel informative only. It is possible to produce steel acc to entire foreign equivalents, depending on the agreement with the steel mill technician. It is also possible to produce steel with chemical content adjustments acc to agreement.

STEEL GRADE 11		
ČSN	DIN	EN
11 110	10 S 20	10 S 20
11 120		
11 140	35 S 20	35 S 20
11 375	St 37-2	S 235J 0
11 500	St 50-2	E 295
11 523	St 52-3	S 355J 0
11 600	St 60-2	E 335
11 700	St 70-2	E 360

STEEL GRADE 13	
ČSN	DIN
13 180	80 Mn 4
13 240	37 MnSi 5
13 242	42 MnV 7
13 270	60 SiMn 5

STEEL GRADE 14		
ČSN	DIN	EN
14 109	100 Cr 6	100 Cr 6
14 209	100 CrMn 6	100 CrMnSi 6-4
14 140	37 Cr 4	100 CrMnMo 7
14 220	16 MnCr 5	37 Cr(S) 4
14 221	20 MnCr 5	16 MnCr(S) 5
14 240		20 MnCr(S) 5
14 260	54 SiCr 6	
14 331		
14 341		

STEEL GRADE 19	
ČSN	DIN
19 083	C 45 W
19 132	C 70 W 2
19 152	C 80 W 2
19 191	C 105 W 1
19 221	C 110 W
19 312	90 MnCrV 8
19 420	140 Cr 3
19 452	62 SiMnCr 4

STEEL GRADE 12			
ČSN	DIN	EN	GOST
12 020	C 22.8	P 250 GH	
12 022	C 22	C 22 E, R	
12 023	C 15	C 15 E, R	
12 040	CK 35	C 35 E, R	35
12 041	CK 40	C 40 E, R	40
12 050	CK 45	C 45 E, R	45
12 051	CK 50	C 50 E, R	50
12 060	CK 55	C 55 E, R	55
12 061	CK 60	C 60 E, R	60

STEEL GRADE 15			
ČSN	DIN	EN	GOST
15 020		16 Mo 3	
15 121	13 CrMo 44	13 CrMo 4-5	
15 124	20 CrMo 5	18 CrMo(S) 4	
15 130	25 CrMo 4	25 CrMo(S) 4	
15 131	34 CrMo 4	34 CrMo(S) 4	35 XM
15 142	42 CrMo 4	42 CrMo(S) 4	38 XM
15 230			
15 231			
15 240			
15 241	30 CrMoV 9	31 CrMoV 9	
15 260	50 CrV 4	51 CrV 4	
15 320	25 CrMoV 55		
		50 CrMo 4	

STEEL GRADE 16			
ČSN	DIN	EN	UNI
16 220	13 NiCr 6	18 NiCr 5-4	39 NiCrMo 3
16 231	19 CrNi 8		
16 341	36 CrNiMo 4		
16 420	14 NiCr 14	15 NiCr 13	
16 520	14 NiCr 18		BS
	15 CrNi 6	17 CrNi 6-8	817 M40
	17 CrNiMo 6	18 CrNiMo 7-6	
		34 CrNiMo 6	
		30 CrNiMo 8	

STEEL	STATUS	DIN	EN
xx xxx.0	without heat treatment	U	U
xx xxx.1	normalize annealed	N	(+N)
xx xxx.2	annealed (method)		
xx xxx.3	soft annealed	G	(+A)
	annealing with microstructure guarantee	GKZ	(+AC)
xx xxx.4	hardened		
xx xxx.5	normalize annealed & tempered		
xx xxx.6	quench tempered to lower strength	V	(+QT)
xx xxx.7	quench tempered to medium strength	V	(+QT)
xx xxx.8	quench tempered to upper strength	V	(+QT)
xx xxx.9	according to special agreement		

Standard steel for tube production

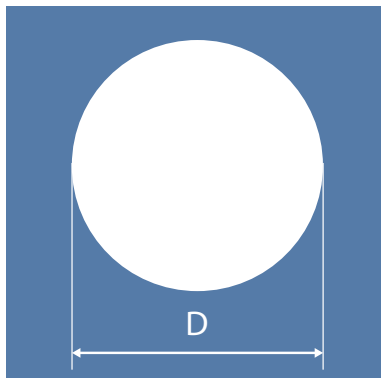
BASIC STEEL GRADE	STEEL GRADE	
	Steel grade	Valid for
P235	P195	EN 10216-1
	P195GH	EN 10216-2
	P235	EN 10216-1
	E235	EN 10297-1
	S235JRH	EN 10210-1
	Rst 37.2	DIN 17 121
St 44.0	St 37.0	DIN 1629
	St 44.0	DIN 1629
S355J2H	St 44.2	DIN 17121
	11 523	ČSN 41 1523
	P355N	EN 10216-3
	P355NH	EN 10216-3
	S355LOH	EN 10210-1
	S355J2H	EN 10210-1
	E355	EN 10297-1
	E355K2	EN 10297-1
	St 52.0	DIN 1629
	St 52.3	DIN 17121
B/C	Grade 6	ASTM A 333
	Grade A	ASTM A 106
	Grade B	ASTM A 106
	Grade C	ASTM A 106
	Grade B	API 5L PSL1
	X 42	API 5L PSL1
	Grade 241	Z245.1-02
	Grade 290	Z245.1-02
P275NL2	P275NL1	EN 10216-3
	P275NL2	EN 10216-3
	E275	EN 10297-1
	E275K2	EN 10297-1
P265	P265	EN 10216-1
	P265GH	EN 10216-2
P355NL	11 523	ČSN 41 1523
	P355N	EN 10216-3
	P355NH	EN 10216-3
	P355NL1	EN10216-3
	P355NL2	EN10216-3
	S355JOH	EN10210-1
	S355J2H	EN10210-1
	E355	EN10297-1
	E355K2	EN10297-1
	S355NH	EN10210-1
	S355NLH	EN10210-1
	St 52.0	DIN 1629
	St 52.3	DIN 17121
St 35.8/P235GH	St 35.8	DIN 17175
	P235GH	EN 10216-2
St 45.8	St 45.8	DIN 17175
B/C/1026	Grade 1026	ASTM A 519
	Grade B	ASTM A 53
	Grade B	ASTM A 106
	Grade C	ASTM A 106
O9G2S	O9G2S	GOST 19281

BASIC STEEL GRADE	STEEL GRADE	
	Steel grade	Valid for
	X52	API 5L PSL1
	X46	API 5L PSL1
	X42	API 5L PSL1
	X52N	API 5L PSL2
	Grade B	ASTM A 106
	Grade C	ASTM A 106
	Grade 6	ASTM A 333
	L360NB	EN 10208-2
	11 523	ČSN 41 1523
	P355N	EN 10216-3
	P355NH	EN 10216-3
	P355NL1	EN10216-3
	P355NL2	EN10216-3
	S355JOH	EN10210-1
	S355J2H	EN10210-1
	E355	EN10297-1
	E355K2	EN10297-1
	S355NH	EN10210-1
	S355NLH	EN10210-1
	St 52.0	DIN 1629
X60	St 52.3	DIN 17121
	S355G1+N	EN 10225
	S355G14+N	EN 10225
	Grade 241	Z245.1-02
	Grade 290	Z245.1-02
	Grade 359	Z245.1-02
	X60	API 5L PSL1
	X56	API 5L PSL1
	X60N	API 5L PSL2
	X56N	API 5L PSL2
P11	S 420 NH	EN10210-1
	S 420 NLH	EN10210-1
P22	10CrMo5-5	EN 10216-2
	P11	ASTM A 335
	15313	ČSN 41 5313
	P22	ASTM A 335
	10CrMo9-10	DIN 17175
15128	10CrMo9-10	EN 10216-2
	11CrMo9-10	EN 10216-2
	15128	ČSN 41 5128
	14MoV63	DIN 17175
16Mo3	14MoV63	EN 10216-2
	15020	ČSN 41 5020
	15Mo3	DIN 17175
	16Mo3	EN 10216-2
15121	15121	ČSN 41 5121
	13CrMo4-4	DIN 17175
	13CrMo4-5	EN 10216-2
	P12	ASTM A 335
P2	P2	ASTM A 335
P1	P1	ASTM A 335



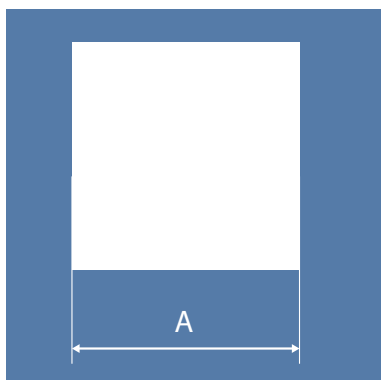


Hot rolled steel



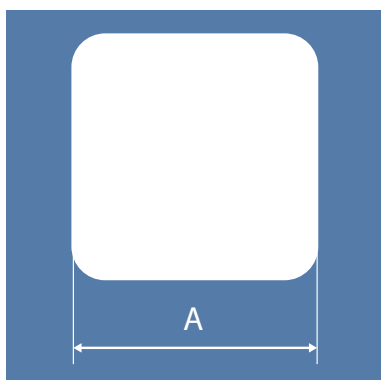
ROUND BARS

DS	ČSN 425510
DS	DIN 1013
DS	ČSN EN 10060
TDC	ČSN 420138, ČSN 420220
TDC	ČSN EN 10083-2, 3
TDC	ČSN EN 10025+ A1
TDC	ČSN EN 10084



SQUARE BARS

DS	ČSN 425520
DS	DIN 1014
DS	ČSN EN 10059
TDC	ČSN 420138
TDC	ČSN 420220
TDC	ČSN EN 10083 - 2, 3
TDC	ČSN EN 10025 + A1
TDC	ČSN EN 10084



BILLETS

DS	ČSN 425121
TDC	ČSN 420188

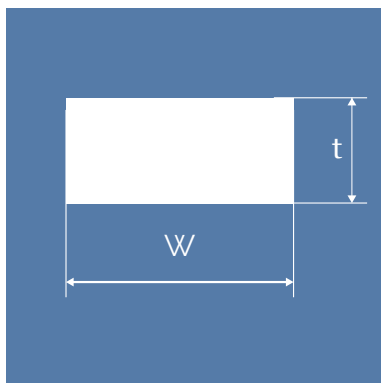
after agreement it is possible to supply also middle sizes
DS - dimensional specification
TDC - technical delivery condition



D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]
16	1.58	41	10.40	66	26.90
17	1.78	42	10.90	67	27.70
18	2.00	43	11.40	68	28.50
19	2.23	44	11.90	70	30.20
20	2.47	45	12.50	71	31.10
21	2.72	46	13.10	73	32.90
22	2.98	47	13.60	75	34.70
23	3.26	48	14.20	76	35.60
24	3.55	49	14.80	78	37.50
25	3.85	50	15.40	80	39.50
26	4.17	51	16.10	82	41.50
27	4.49	52	16.70	83	42.50
28	4.83	53	17.30	85	44.50
29	5.18	54	18.00	88	47.70
30	5.55	55	18.70	90	49.90
31	5.92	56	19.30	95	55.60
32	6.31	57	20.00	100	61.70
33	6.71	58	20.70	105	68.00
34	7.13	59	21.50	110	74.60
35	7.55	60	22.20	115	81.50
36	7.99	61	23.00	120	88.80
37	8.44	62	23.70	125	96.30
38	8.90	63	24.50	130	104.00
39	9.38	64	25.30	135	112.40
40	9.87	65	26.00	140	121.00
				150	139.00

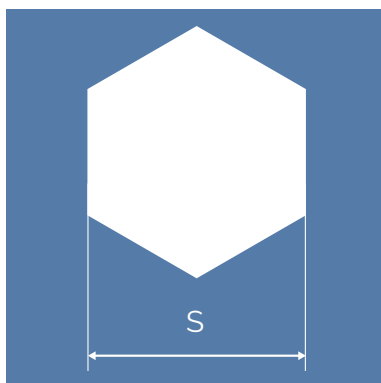
A-SIDE [mm]	WEIGHT [kg/m]	A-SIDE [mm]	WEIGHT [kg/m]	A-SIDE [mm]	WEIGHT [kg/m]
15	1.77	32	8.04	62	30.20
16	2.01	33	9.08	65	33.17
17	2.27	34	9.62	70	38.47
18	2.54	35	9.62	75	44.15
19	2.83	37	10.75	80	50.24
20	3.14	39	11.94	85	56.72
21	3.46	40	12.56	90	63.59
22	3.80	42	13.85	95	70.85
23	4.15	43	14.50	100	78.50
24	4.52	45	15.90	105	86.55
25	4.91	47	17.34	110	94.99
26	5.31	50	19.63	115	103.82
27	5.72	52	21.23	120	113.04
28	6.15	55	23.75	130	133.00
29	6.60	57	25.50	140	154.00
30	7.07	60	28.26		

A-SIDE [mm]	WEIGHT [kg/m]	A-SIDE [mm]	WEIGHT [kg/m]	A-SIDE [mm]	WEIGHT [kg/m]
40	12.3	70	37.8	100	77.0
45	15.7	75	42.0	110	93.0
50	19.1	80	49.0	120	111.0
55	23.4	85	55.0	130	130.0
60	27.6	90	62.0	140	151.0
65	32.7	95	69.0		



FLAT BARS

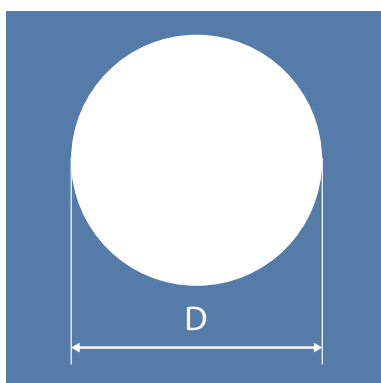
DS	ČSN 425522
DS	DIN 1017
DS	ČSN EN 10058
TDC	ČSN 420138
TDC	ČSN 420220
TDC	ČSN EN 10083 - 2, 3
TDC	ČSN EN 10025 + A1
TDC	ČSN EN 10084



HEXAGONAL BARS

DS	ČSN 425530
DS	DIN 1015
DS	ČSN EN 10061
TDC	ČSN 420138
TDC	ČSN 420220
TDC	ČSN EN 10083 - 2, 3
TDC	ČSN EN 10025 + A1
TDC	ČSN EN 10084

Peeled steel



ROUND BARS H₉ AND H₁₁

DS	ČSN 426515.32
DS	DIN 668, DIN 671
DS	ČSN EN 10278
TDC	ČSN 420134, ČSN 420240
TDC	DIN 1651
TDC	DIN 1652
TDC	ČSN EN 10277





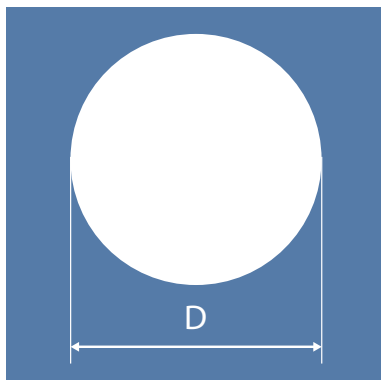
W-WIDTH [mm]	T-THICKNESS [mm]	W-WIDTH [mm]	T-THICKNESS [mm]
22	10 - 16	55	5 - 34
25	8 - 18	60	5 - 40
28	7 - 18	65	5 - 40
30	5 - 20	70	5 - 40
32	5 - 22	80	5 - 40
35	5 - 25	90	5 - 40
40	5 - 30	100	5 - 34
45	5 - 34	110	5 - 34
50	5 - 34		

S-SPANNER JAWS [mm]	WEIGHT [kg/m]	S-SPANNER JAWS [mm]	WEIGHT [kg/m]	S-SPANNER JAWS [mm]	WEIGHT [kg/m]
16	1.74	29	5.72	48	15.66
17	1.96	30	6.12	50	17.00
18	2.20	32	6.96	52	18.38
19	2.45	33	7.40	55	20.57
20	2.72	34	7.86	57	22.09
21	2.87	36	8.81	60	24.48
22	3.29	37	9.30	62	26.13
23	3.60	38	9.82	65	28.72
24	3.92	40	10.68	67	30.52
25	4.25	41	11.34	70	33.31
26	4.60	43	12.57	72	35.24
27	4.96	45	13.77		
28	5.33	46	14.38		

D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]
10	0.62	33	7.13	56	19.33
11	0.75	34	7.55	57	20.00
12	0.89	35	7.99	58	20.70
13	1.04	36	8.90	59	21.45
14	1.21	37	8.44	60	22.20
15	1.39	38	8.90	61	22.95
16	1.58	39	9.37	62	23.70
17	1.78	40	9.86	63	24.47
18	2.00	41	10.33	64	25.23
19	2.23	42	10.88	65	26.05
20	2.47	43	11.40	66	26.91
21	2.72	44	11.94	67	27.73
22	2.98	45	12.49	68	28.51
23	3.26	46	13.05	69	29.32
24	3.55	47	13.57	70	30.21
25	3.85	48	14.21	72	32.28
26	4.17	49	14.73	75	34.68
27	4.49	50	15.41	78	37.50
28	4.83	51	15.98	80	39.46
29	5.55	52	16.67	85	44.55
30	5.92	53	17.22	90	49.94
31	6.31	54	17.99	95	55.64
32	6.71	55	18.65	100	61.55

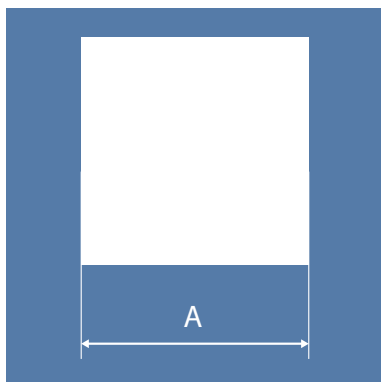


Cold drawn steel



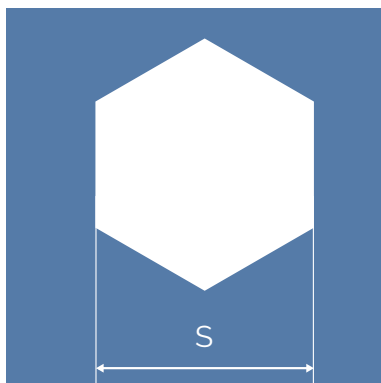
ROUND BARS

DS	ČSN 426510
DS	DIN 668
DS	ČSN EN 10278
TDC	ČSN 420134
TDC	DIN 1651
TDC	DIN 1652
TDC	ČSN EN 10277



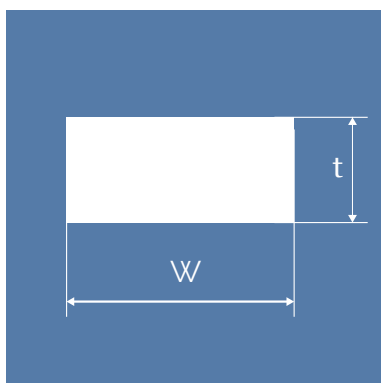
SQUARE BARS

DS	ČSN 426520
DS	DIN 178
DS	ČSN EN 10278
TDC	ČSN 420134
TDC	DIN 1651
TDC	DIN 1652
TDC	ČSN EN 10277



HEXAGONAL BARS

DS	ČSN 426530
DS	DIN 176
DS	ČSN EN 10278
TDC	ČSN 420134
TDC	DIN 1651
TDC	DIN 1652
TDC	ČSN EN 10277



FLAT BARS

DS	ČSN 426530
DS	DIN 176
DS	ČSN EN 10278
TDC	ČSN 420134
TDC	DIN 1651
TDC	DIN 1652
TDC	ČSN EN 10277

After agreement it is possible to supply also middle sizes.



D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]	D-DIAMETER [mm]	WEIGHT [kg/m]
16	1.58	26	4.17	42	10.88
16.5	1.68	27	4.49	44	11.94
17	1.78	28	4.83	45	12.49
17.5	1.89	30	5.55	46	13.05
18	2.00	31	5.92	48	14.21
18.5	2.11	32	6.31	50	15.41
19	2.23	33	6.71	52	16.67
20	2.47	34	7.13	54	17.99
21	2.72	35	7.55	55	18.65
22	2.98	36	7.99	56	19.34
23	3.26	38	8.90	57	20.03
24	3.55	39	9.38	58	20.74
25	3.85	40	9.86	60	22.20

A-SIDE [mm]	WEIGHT [kg/m]	A-SIDE [mm]	WEIGHT [kg/m]
16	2.01	32	8.04
17	2.27	35	9.62
18	2.54	40	12.56
20	3.14	45	15.10
22	3.80	50	19.62
24	4.52	55	23.75
25	4.91	60	28.26
30	7.07		

S-SPANNER JAWS [mm]	WEIGHT [kg/m]	S-SPANNER JAWS [mm]	WEIGHT [kg/m]
16	1.74	32	6.96
17	1.97	34	7.86
18	2.20	36	8.81
19	2.45	37	9.31
20.5	2.85	38	9.82
21	3.00	41	11.43
22	3.29	46	14.39
24	3.92	50	17.00
25.4	4.41	55	20.56
26	4.60	60	24.78
27	4.96	65	28.72
28	5.33	70	33.31
30	6.12		

W-WIDTH [mm]	T-THICKNESS [mm]	W-WIDTH [mm]	T-THICKNESS [mm]
18	10 - 12	45	4 - 25
20	8 - 16	50	4 - 32
22	8 - 16	56	4 - 32
25	8 - 20	63	5 - 32
28	6 - 20	70	5 - 32
32	6 - 25	80	6 - 32
36	5 - 25	90	6 - 32
40	5 - 25	100	8 - 32

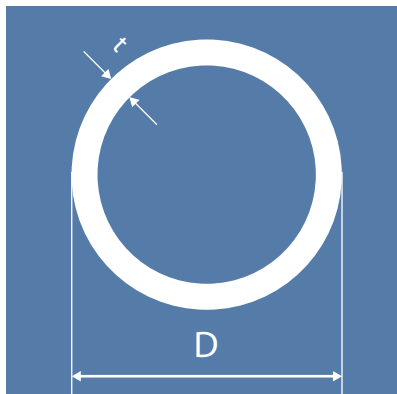
BRIGHT STEEL BARS

PROFILE	CONDITION	SIZE [MM]	TOLERANCE ACC ISO	BAR LENGTH [M]
	drawn	16 - 60	h 11, h9	2.0 - 6.0
	peeled	16 - 100	h 11, h9	2.0 - 6.0
	drawn	16 - 60	h 11, h9	2.0 - 6.0
	drawn	16 - 60	h 11, h9	2.0 - 6.0
	drawn	16 - 60	h 11, h9	2.0 - 6.0





DS AND TDC - CSN EN 10297-1



We manufacture seamless hot extruded tubes acc CSN EN 10297-1. Production range is shown in the table.

Tubes are produced of steel grades St 35; St 37; C 22.8; 100Cr6; 34Cr4; 16MC5; 32CrB4; 50CrV4 and 14NiCr14. After agreement other steel grades can be supplied too. We can also supply hot extruded steel profiles upto circumscribed circle of 130 mm diameter. Usual steel grades: St 37 (S235JR2) or St 52 (S355J2G3), after agreement other steel grades can be supplied too. Seamless tubes of corrosion resistant steel grades acc to EN 10216-5 can also be supplied after agreement.

Outside diameter D and wall thickness t can be agreed gradually by 0.1 mm.

OUT- SIDE DIA- METER	WALL THICKNESS [mm]																			
	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	8,5	9,0	9,5	10,0	10,5	11,0	11,5	12,0	13,0	14,0	16,0	18,0
30,0																				
32,0																				
34,0																				
36,0																				
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