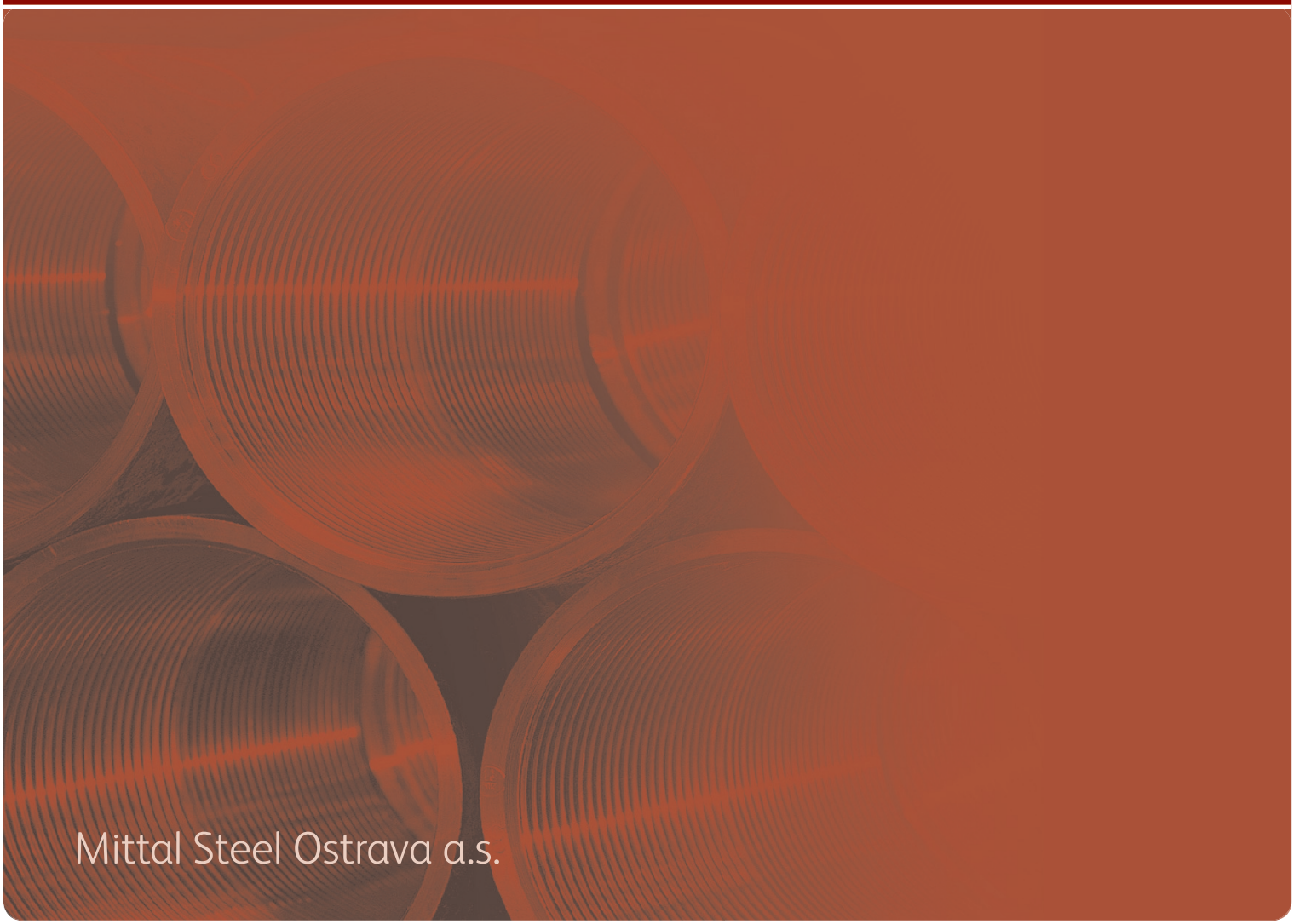
MITTAL

production programme

Tubes and pipes



Mittal Steel Ostrava a.s.

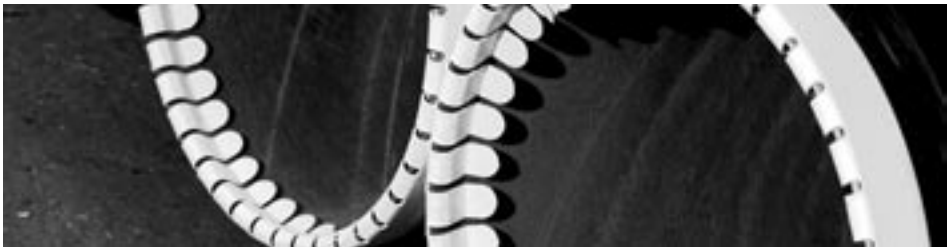
production programme

Tube Plant

Mittal Steel Ostrava a.s.

Mittal Steel Ostrava a.s.

TRADITIONAL PRODUCER OF TOP QUALITY STEEL PRODUCTS



The Tube Plant of Mittal Steel Ostrava a.s. is a prominent producer of seamless pipes in the Czech Republic.
Seamless pipes of diameters from 21.3 mm to 273.1 mm are manufactured at two Stiefel Mills. Spiral weld pipes of diameters from 323.9 mm to 820 mm are manufactured on automatic welding machines.

Tubes and pipes are manufactured in compliance to ISO, EN, API, DIN, ASTM, NF, BS, GOST, CSN and other standards. Mittal Steel Ostrava a.s. has been authorized to use the API monogram on Oil Country Tubular Goods and line pipes continuously since 1957.

MITTAL

contents

certification

The Tube Plant of Mittal Steel Ostrava a.s. manufactures top quality products, which have been certified by a number of reputable foreign and inland institutions.

Plain-end seamless tubes and pipes

Dimensional standards

EN 10220:2002	"Seamless and welded steel tubes - General tables of dimensions and masses per unit length"
ISO 4200:1991	"Plain-end steel tubes, welded and seamless"
CSN 42 5715:1981	"Hot-rolled seamless steel tube"
CSN 42 5716:1981	"Hot-rolled seamless steel tube with small tolerances"
DIN 2448:1981	"Seamless steel tubes"
GOST 8732:1978	"Hot-rolled seamless steel pipes"
ASME B36.10M:2004	"Welded and hot-rolled seamless steel pipes"
KN 45 1103:1997[1]	"Type III casings" - seamless for deep drilling - sizes

Technical delivery regulations for tubes and pipes of carbon steel

CSN 42 0250:1988	"Hot rolled seamless tubes of class 10 to 16 steels"
CSN 42 0165:1990	"Sheets and pipes of ferrite-pearlite steels with guaranteed impact properties at low temperatures"
DIN 1629:1984	"Seamless circular tubes of non-alloy steels with special quality requirements"
DIN 1630:1984	"Seamless circular tubes of non-alloy steels for extra-high requirements"
DIN 17 121:1984	"Seamless structural steel circular tubes for structural engineering purposes"
ASTM A 53:2004 + ASME SA 53:2004	"Seamless and welded black tubes suitable for zinc dipping"
ASTM A 501:2001	"Hot-formed welded and seamless carbon steel structural tubing"
ASTM A 519:2003	"Seamless carbon and alloy steel mechanical tubing"
NF A 49-112:1987	"Plain-end seamless hot rolled steel tubes with guaranteed room temperature properties and with special delivery conditions", all sizes that comply with DIN 2448
GOST 8731:1974	"Hot-rolled seamless steel pipes"
EN 10216-1:2002 + A1:2004	"Seamless steel tubes for pressure purposes" - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties
EN 20224:2002	"Non-alloy steel tubes and fittings for the conveyance of water and other aqueous liquids"
EN 10297-1:2003	"Seamless steel tubes for mechanical and general engineering purposes"

For tubes and pipes of high-grade carbon steel - for boilers

CSN 42 0251:1989	"Seamless steel tubes with guaranteed properties at elevated temperatures"
DIN 17175:1979	"Seamless steel tubes for elevated temperatures" quality grade I
ASTM A 106:2004 + ASME SA 106:2004	"Standard specification for seamless carbon steel pipe for high temperature service"
ASTM A 192:2002[1]	"Standard specification for seamless carbon steel boiler tubes for high-pressure service"
ASTM A 210:2004[1]	"Standard specification for seamless medium-carbon steel boiler and super heater tubes"
ASTM A 333:2004 + ASME SA 333:2001	"Standard specification for seamless and welded steel pipes for low-temperature service"
ASTM A 530:2004 + ASME SA 530M:2001	"Standard specification for general requirements for specialized carbon and alloy steel pipe"
ASTM A 450:2004	"Standard specification for seamless carbon steel pipe for high temperature service"
NF A 49 - 211:1989[1]	"Seamless plain-end tubes of non-alloy steels for the conveyance of liquids at elevated temperatures"
EN 10208-1,2:1997, 1996	"Steel pipes for pipelines for combustible fluids"
EN 10210-1,2:1994, 1997	"Hot finished structural hollow sections of no-alloy and fine grain steels"
EN 10216-2:2002 + A1:2004	"Seamless steel tubes for pressure purposes" - Technical delivery conditions - Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties
EN 10216-3:2002 +A1:2004	" Seamless steel tubes for pressure purposes " Part 3 - Alloy and fine grain steel tubes
KN 45 1108:1997[1]	"Casing type III" - seamless for deep drilling - Technical delivery conditions"

Subject to agreement, the Tube Plant is able to deliver plain-end seamless tubes of both carbon steel and high-grade carbon steel complying with other foreign standards as long as their dimensions correspond to the dimensional range of tubes made in accordance with DIN 2448, ASME B36.10M and CSN 42 5715 or CSN 42 5716.

Tube dimensions[2]

EN 10220:2002 (ISO 4200:1991)	See the relevant chart
CSN 42 5715 (42 5716):1981	See the relevant chart
DIN 2448:1981, EN 10210-1,2:1994,1997	See the relevant chart
ASTM A 53:2004, ASTM A 106:2004, ASTM A 333:2004	See the relevant chart
ASTM A 192:2002[1]	ø 21.3 - 127.0 mm, W.T. 2.3 - 20.0 mm
ASTM A 210:2004[1]	ø 21.3 - 127.0 mm, W.T. 2.3 - 12.7 mm
ASTM 519:2003	ø 21.3 - 273.1 mm, W.T. 2.77 - 18.26 mm
NF A 49 - 112:1987, NF A 49 - 211:1989[1]	See the relevant chart, W.T. max. 20
GOST 8732:1978	See the relevant chart
ASME B36.10 M:2004	ø 21.3 - 273.1 mm, W.T. 2.3 - 20.0 mm

[1] The products in compliance with this standard are subject to prior agreement with 15/TT.
[2] If agreed, unnormalized outside diameters can also be produced.

Steel grades

CSN 42 0250:1988	11 353.0, 11 353.1, 11 453.0, 11 453.1, 11 523.0, 11 523.1[3], 11 550.0, 11 550.1, 11 650.0, 11 650.1
CSN 42 0251:1989	12 021.1, 12 022.1
CSN 42 0165:1990	11 369.1, 11 503.1[1]
DIN 1629:1984	St 37.0, St 44.0, St 52.0
DIN 1630:1984	St 37.4, St 44.4, St 52.4
DIN 17121:1984[4]	RSt 37-2, St 37-3, St 44-2, St 44-3, St 52-3
DIN 17175:1979 - Grade I	St 35.8, St 45.8
GOST 8731:1974	10, 20, St2, St4
ASTM A 53:2004, ASTM A 106:2004	A, B, C
ASTM A 333:2004	Gr. 1, Gr. 6
ASTM A 192:2002[1]	A
ASTM A 210:2002[1]	A1
ASTM A 501:2001	without marking
ASTM A 519:2003	MT 1010, MT 1015, MT 1020, 1010, 1012, 1015, 1017, 1020, 1518
NF A 49-112:1987	TU E 220A, TU E 235A
NF A 49-211:1989[1]	TU E 220, TU E 250, TU E 275 with each grade 3 variations are possible: - B (notch toughness testing at +20°C) - B1 (notch toughness testing at 0°C) - B2 (notch toughness testing at -20°C)
EN 10208-1,2:1997[1], 1996[1]	L210GA, L235GA, L245GA, L290GA, L360GA, L245NB, L290NB[1], L360NB
EN 10210-1,2:1994, 1997	S235JRH, S275JOH, S275J2H, S355JOH, S355J2H, S275 NH[1], S355NH[1]
EN 10216-1,2,3:2002 + A1:2004	P195TR1, P195TR2, P235TR1, P235TR2, P265TR2, P195GH, P235GH, P265GH
EN 10297-1:2003	E235, E275, E315, E355, P355N, P355NH[1], E275K2[1], E355K2[1]

Lengths

Plain-end tubes of carbon or high-grade carbon steels are delivered in the following lengths:
Production lengths - 4 - 14 m, length is determined by the producer with respect to the technological potential
Approximate lengths - nominal length is chosen by the customer within the range of production lengths with the maximum tolerance of ±500 mm (in compliance with DIN 1629, DIN 17 121 and DIN 17 175).
Exact lengths - nominal length is chosen by the customer on the basis of the agreement with the producer.

Max. length of tubes:	< ø 60.3 mm	9.5 m
	≥ ø 60.3 m	12.5 m in compliance with the technological potential

Pipe finish and end workmanship

Pipes are delivered with the following types of finish:
- scaled outside and inside
- with outside and/or inside zinc coating according to DIN EN 10240:1998 (diameters up to 114.3 mm only and maximum lenght 7.1 m) - subject to prior agreement
- with outside protective paint for short-term protection

Pipes are delivered with the ends cut off perpendicularly to the pipe axis and de-burred. Other types of finish are subject to agreement with the producer.

Pipes are also delivered with the following types of insulation:
All combinations of the outside and inside finish including surface free of protection can be delivered.

Tube diameter (mm)	Outside insulation	Inside insulation	Lengths	Producer of insulation
57.0 - 152.4	Extruded polyethylene coating with standard and reinforced thickness (DIN 30670:1991)		8 - 12.5 m	External supplier
159.0 - 273.1	Extruded polyethylene coating with standard and reinforced thickness (DIN 30670:1991 - N-n, N-v, S-n, S-v)[2]		8 - 18 m	Mittal Steel Ostrava a.s.
219.0 - 273.1	Concrete-plastic coating according to KN 42 0025:2003, event. FZM-N standard, FZM-S special (for the protection of pipes with PE coating)		6 - 14 m	Mittal Steel Ostrava a.s.
88.9 - 273.1		Cement mortar thickness 5 - 13 mm (DIN 2614:1990 - II-N)[1]	7 - 13 m	Mittal Steel Ostrava a.s.
108.0 - 273.1		Bitumen or other varnish overcoat[3]		Mittal Steel Ostrava a.s.
159.0 - 273.1	Protective bitumen varnish painting, bitumen coating reinforced by 1 or 2 layers of fiberglass matt and PVC band acc. to KN 420023:1994 or CSN 420022:1977		8 - 12.5 m	Mittal Steel Ostrava a.s.

[1] This type of insulation should be delivered off the winter period (i.e. approx. from 1st of April to 31st of November).
[2] Wall thickness > 12 mm by the particular O.D. is subject to agreement.
[3] Subject to agreement

Seamless tubes can also be delivered with the following types of coating:
Tubes of diameter ≥ 159 mm outside protective bitumen varnish painting, bitumen coating reinforced by 1 or 2 layers of fiberglass matt and PVC band according to KN 42 0023:1994 or CSN 42 0022:1977.

Bundling

Pipes are tied by wire or tape whereas the number of ties is in compliance with the customer's requirement.
Subject to agreement, the pipes can also be delivered in hexagonal bundles.

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[1] The products in compliance with this standard are subject to prior agreement with 15/TT.
[2] Can be delivered as normalized if agreed.
[3] Can be delivered as normalized if agreed. Diameters 159 mm and greater with max. wall thickness 10 mm can only be delivered.

Dimensional range, weight and maximum length according to EN 10220:2002 (ISO 4200:1991), EN 10216:2002 + A1:2004

Outside diameter (mm)	Wall thickness (mm)										
	2.3 [1]	2.6	2.9	3.2	3.6	4	4.5	5	5.4	5.6	6.3
	Weight (kg/m)/max. lengths (m)										
21.3	1.08/9.5	1.20/9.5	1.32/9.5	1.43/9.5	1.57/9.5	1.71/9.5					
22	1.12/9.5	1.24/9.5	1.37/9.5	1.48/9.5	1.63/9.5	1.78/9.5					
25	1.29/9.5	1.44/9.5	1.58/9.5	1.72/9.5	1.90/9.5	2.07/9.5					
25.4[1]	1.31/9.5	1.46 /9.5	1.61 /9.5	1.75 /9.5	1.94 /9.5	2.11 /9.5					
26.9	1.40/9.5	1.56/9.5	1.72/9.5	1.87/9.5	2.07/9.5	2.26/9.5	2.49/9.5				
30 [1]		1.76 /9.5	1.91 /9.5	2.11 /9.5	2.34 /9.5	2.56 /9.5	2.83 /9.5				
31.8		1.87/9.5	2.07/9.5	2.26/9.5	2.50/9.5	2.74/9.5	3.03/15				
33.7		1.99/9.5	2.20/9.5	2.41/9.5	2.67/9.5	2.93/9.5	3.24/9.5	3.54/9.5			
35		2.08/9.5	2.30/9.5	2.51/9.5	2.79/9.5	3.06/9.5	3.38/9.5	3.70/9.5			
38		2.27/9.5	2.51/9.5	2.75/9.5	3.05/9.5	3.35/9.5	3.72/9.5	4.07/9.5			
40 [1]		2.40/9.5	2.65/9.5	2.90/9.5	3.23/9.5	3.55/9.5	3.94/9.5	4.32/9.5			
42.4		2.55/9.5	2.82/9.5	3.09/9.5	3.44/9.5	3.79/9.5	4.21/9.5	4.61/9.5	4.94/9.5[1]	5.09/9.5[1]	5.61/9.5[1]
44.5 [1]		2.69/9.5	2.98/9.5	3.26/9.5	3.63/9.5	4.00/9.5	4.44/9.5	4.87/9.5	5.22/9.5[1]	5.38/9.5[1]	5.94/9.5[1]
48.3		2.93/9.5	3.25/9.5	3.56/9.5	3.97/9.5	4.37/9.5	4.86/9.5	5.34/9.5	5.72/9.5[1]	5.91/9.5[1]	6.53/9.5[1]
51 [1]			3.44/9.5	3.77/9.5	4.21/9.5	4.64/9.5	5.16/9.5	5.67/9.5	6.08/9.5[1]	6.28/9.5[1]	6.96/9.5[1]
54 [1]			3.65 /9.5	4.01 /9.5	4.47 /9.5	4.93 /9.5	5.49 /9.5	6.04 /9.5	6.47/9.5[1]	6.68/9.5[1]	7.41/9.5[1]
57			3.87/9.5	4.25/9.5	4.74/9.5	5.23/9.5	5.83/9.5	6.41/9.5	6.87/9.5[1]	7.10/9.5[1]	7.89/9.5[1]
60.3			4.11/10	4.51/10	5.03/12	5.56/12	6.19/12	6.82/12	7.31/12	7.55/12	8.39/12
63.5 [1]			4.33/9.0	4.76/9.0	5.32/11.5	5.87/11.5	6.55/12	7.21/12	7.74/12	8.0/12	8.89/12
70 [1]			4.80/8.5	5.27/10	5.90/10	6.51/10	7.27/12	8.01/12	8.60/12	8.89/12	9.90/12
73			5.01/8.5	5.51/12	6.16/12	6.81/12	7.60/12	8.38/12	9.00/12	9.00/12	9.00/12
76.1			5.24/12.5	5.75/12.5	6.44/12.5	7.11/12.5	7.95/12.5	8.77/12.5	9.42/12.5	9.74/12.5	10.8/12.5
82.5 [1]				6.26/12.5	7.00/12.5	7.74/12.5	8.66/12.5	9.56/12.5	10.3/12.5	10.6/12.5	11.8/12.5
88.9				6.76/12.5	7.57/12.5	8.38/12.5	9.37/12.5	10.3/12.5	11.1/12.5	11.5/12.5	12.8/12.5
101.6					8.7/12	9.63/12	10.8/12	11.9/12	12.8/12	13.3/12	14.8/12
108					9.27/11.5	10.3/11.5	11.5/11.5	12.7/11.5	13.7/11.5	14.1/11.5	15.8/11.5
114.3					9.83/11.5	10.9/11.5	12.2/11.5	13.5/12	14.5/12	15.0/12	16.8/12.0
127						12.1/12	13.6/12	15.0/12	16.2/12	16.8/12	18.8/12
133						12.7/12	14.3/12	15.8/12	17.0/12	17.6/12	19.7/12
139.7						13.4/11.5	15.0/11.5	16.6/11.5	17.9/11.5	18.5/11.5	20.7/11.5
141.3							15.2/12	16.8/12	18.1/12	18.7/12	21.0/12
152.4							16.4/12.5	18.2/12.5	19.6/12	20.3/12	22.7/12
159							17.1/12.5	19.0/12.5	20.5/12.5	21.2/12.5	23.7/12.5
168.3							18.2/12.5	20.1/12.5	21.7/12.5	22.5/12.5	25.2/12.5
177.8								21.3/12.5	23.0/12.5	23.8/12.5	26.6/12.5
193.7									25.1/12	26.0/12.5	29.1/12.5
219.1											33.1/12.5
244.5											37.0/12
273.0											41.5/11.5

[1] Ordering of the tubes is subject to prior agreement.
Grade in compliance with EN 10208-2, L415NB - diameters 159 mm and greater with max. wall thickness 10 mm can only be delivered.

Dimensional range, weight and maximum length according to EN 10220:2002 (ISO 4200:1991 continuation), EN 10216:2002 + A1:2004

Outside diameter (mm)	Wall thickness (mm)											
	7.1	8	8.8	10	11	12.5	14.2	16	17.5	20	22.2[1]	25[1]
	Weight (kg/m)/max. lengths (m)											
60.3	9.32/12	10.3/12	11.2/12									
63.5[1]	9.88/12	11.0/12	11.89/12									
70.0[1]	11.0/12	12.8/12	13.3/12									
73.0	11.5/12	12.8/12	13.95/11									
76.1	12.1/12.5	13.4/12	14.6/12	16.3/12								
82.5[1]	13.2/12.5	14.7/12	16.0/12	17.9/12								
88.9	14.3/12.5	16.0/12	17.4/12	19.5/12	21.1/11.5	23.6/10.5	26.2/8[1]					
101.6	16.5/12	18.5/12	20.1/12	22.6/11	24.6/10	27.5/8.5						
108	17.7/11.5	19.7/11.5	21.5/11.5	24.2/10	26.3/9.5	29.4/8.5						
114.3	18.8/12	21.0/12	22.9/12	25.7/12	28.0/12	31.4/12	35.1/11	38.8/10[1]	41.8/9[1]	46.5/8[1]		
127	21.0/12	23.5/12	25.7/12	28.9/12	31.5/12	35.3/11	39.5/9.5	43.8/8.5[1]	47.3/8[1]	52.8/9[1]		
133	22.0/12	24.7/12	27.0/12	30.3/12	33.1/11.5	37.1/10.5	41.6/9	46.2/8[1]	49.9/9.5[1]	55.7/6.5[1]		
139.7	23.2/12	26.0/12	28.4/12	32.0/10	34.9/10	39.2/11	43.9/10	48.8/9[1]	52.7/8[1]	59.0/7[1]		
141.3	23.5/12	26.3/12	28.8/12	32.4/12	35.3/12	39.7/11	44.5/10	49.4/8.5[1]	53.4/8[1]	59.8/7[1]		
152.4	25.4/12	28.5/12	31.2/12	35.1/12	38.4/11.5	43.1/10.5	48.4/9.5	53.8/8	58.2/7	65.3/6.5	71.3/6	
159	26.6/12.5	29.8/12.5	32.6/12.5	36.7/12	40.1/12	45.2/12	50.7/11	56.4/10	61.1/9	68.6/8	74.9/7	82.6/6.5
168.3	28.2/12.5	31.6/12.5	34.6/12.5	39.0/12	42.7/12	48.0/12	54.0/10.5	60.1/9.5	65.1/8.5	73.1/7.5	80.0/7	88.4/6.5
177.8	29.9/12.5	33.5/12.5	36.7/12.5	41.4/12	45.2/12	51.0/12	57.3/11	63.8/9.5	69.2/8.5	77.8/7.5	85.2/7	94.2/6
193.7	32.7/12.5	36.6/12.5	40.1/12.5	45.3/12	49.6/12	55.9/12	62.9/12	70.1/11.5	76.0/11	85.7/9.5	93.9/8.5	104/7.5
219.1	37.1/12.5	41.6/12.5	45.6/12.5	51.6/12	56.5/12	63.7/12	71.8/11.5	80.1/10.5	87.0/9.5	98.2/8	108/7	120/6.5
244.5	41.6/12	46.7/12	51.2/12	57.8/12	63.3/12	71.5/11.5	80.6/10	90.2/8.5	98.0/8	111/7.5	122/7	135/6
273	46.6/12	52.3/12	57.3/12	64.9/12	71.1/12	80.3/11	90.6/9.5	101/8.0	110/7.5	125/6.5	137/6	

[1] Ordering of the tubes is subject to prior agreement.
Grade in compliance with EN 10208-2, L415NB - diameters 159 mm and greater with max. wall thickness 10 mm can only be delivered.

Dimensional range, weight and maximum length according to CSN 42 5715:1981 a CSN 42 5716:1981

Outside diameter (mm)	Wall thickness (mm)									
	2.6	2.9	3.2	3.6	4	4.5	5	5.6	6.3	7
	Weight (kg/m)/max. lengths (m)									
21.3	1.20/9.5	1.32/9.5	1.43/9.5	1.57/9.5	1.71/9.5					
22 [1]	1.24/9.5	1.37/9.5	1.48/9.5	1.63/9.5	1.78/9.5					
25 [1]	1.44/9.5	1.58/9.5	1.72/9.5	1.90/9.5	2.07/9.5					
26.9	1.56/9.5	1.72/9.5	1.87/9.5	2.07/9.5	2.26/9.5	2.49/9.5				
28	1.63/9.5	1.80/9.5	1.96/9.5	2.17/9.5	2.37/9.5	2.61/9.5				
31.8 [1]	1.87/9.5	2.07/9.5	2.26/9.5	2.50/9.5	2.74/9.5	3.03/9.5				
33.7	1.99/9.5	2.20/9.5	2.41/9.5	2.67/9.5	2.93/9.5	3.24/9.5	3.54/9.5			
35 [1]	2.08/9.5	2.30/9.5	2.51/9.5	2.79/9.5	3.06/9.5	3.39/9.5	3.70/9.5			
38	2.27/9.5	2.51/9.5	2.75/9.5	3.05/9.5	3.35/9.5	3.72/9.5	4.07/9.5			
40 [1]	2.40/9.5	2.65/9.5	2.90/9.5	3.23/9.5	3.55/9.5	3.94/9.5	4.32/9.5			
42.4	2.55/9.5	2.83/9.5	3.09/9.5	3.45/9.5	3.79/9.5	4.21/9.5	4.61/9.5	5.09/9.5 [1]	5.61/9.5 [1]	6.12/9.5 [1]
44.5 [1]	2.69/9.5	2.98/9.5	3.26/9.5	3.63/9.5	4.00/9.5	4.44/9.5	4.87/9.5	5.38/9.5 [1]	5.94/9.5 [1]	6.48/9.5 [1]
48.3	2.93/9.5	3.25/9.5	3.56/9.5	3.97/9.5	4.37/9.5	4.86/9.5	5.34/9.5	5.71/9.5 [1]	6.53/9.5 [1]	7.14/9.5 [1]
51 [1]		3.44/9.5	3.77/9.5	4.21/9.5	4.64/9.5	5.16/9.5	5.67/9.5	6.28/9.5 [1]	6.96/9.5 [1]	7.61/9.5 [1]
57		3.87/9.5	4.25/9.5	4.74/9.5	5.23/9.5	5.83/9.5	6.41/9.5	7.10/9.5 [1]	7.89/9.5 [1]	9.65/9.5 [1]
60.3		4.11/10	4.51/10	5.03/12	5.55/12	6.19/12	6.82/12	7.55/12	8.39/12	9.2/12
63.5 [1]		4.33/9	4.76/9	5.32/11.5	5.87/11.5	6.55/12	7.21/12	8/12	8.89/12	9.75/12
70 [1]		4.80/8.5 [2]	5.27/12	5.90/12	6.51/12	7.27/12	8.02/12	8.89/12	9.90/12	10.89/12
76		5.24/12.5 [2]	5.75/12.5	6.43/12.5	7.10/12.5	7.94/12.5	8.76/12.5	9.72/12.5	10.8/12.5	11.9/12.5
82.5 [1]			6.26/12.5 [2]	7.01/12.5	7.74/12.5	8.66/12.5	9.56/12.5	10.6/12.5	11.8/12.5	13.0/12.5
89			6.78/12.5 [2]	7.58/12.5	8.39/12.5	9.38/12.5	10.4/12.5	11.5/12.5	12.9/12.5	14.2/12.5
102				8.74/12	9.67/12	10.8/12	12/12	13.3/12	14.9/12	16.4/12
108				9.27/11.5 [2]	10.3/11.5	11.5/11.5	12.7/11.5	14.1/11.5	15.8/11.5	17.4/11.5
114				9.82/11.5 [2]	10.9/11.5	12.2/11.5	13.4/12	15/12	16.7/12	18.5/12
127					12.1/12	13.6/12	15/12	16.8/12	18.8/12	20.7/12
133					12.7/12 [2]	14.3/12	15.8/12	17.6/12	19.7/12	21.8/12
140					13.44/11.5 [2]	15.0/11.5	16.7/11.5	18.6/11.5	20.8/11.5	23/12
152						16.4/12.5	18.1/12.5	20.2/12	22.6/12	25/12
159						17.2/12.5	19/12.5	21.2/12.5	23.7/12.5	26.2/12.5
168						18.2/12.5	20.1/12.5	22.4/12.5	25.1/12.5	27.8/12.5
178							21.3/12.5	23.8/12.5	26.7/12.5	29.5/12.5
194								26/12.5	29.2/12.5	32.3/12.5
219									33.1/12.5	36.6/12.5
245									37.1/12	41.1/12
273									41.5/11.5	45.9/12

[1] Ordering of the tubes is subject to prior agreement.
[2] The wall thickness is not included in the CSN, but it can be produced.

Dimensional range, weight and maximum length according to CSN 42 5715:1981 a CSN 42 5716:1981 (continuation)

Outside diameter (mm)	Wall thickness (mm)										
	8	9	10	11	12.5	14	16	18	20	22[1]	25[1]
	Weight (kg/m)/max. lengths (m)										
60.3	10.3/12	11.4/12									
63.5[1]	11/12	12.1/12									
70[1]	12.2/12	13.5/12									
76	13.4/12	14.9/12	16.3/12								
82.5[1]	14.7/12	16.3/11	17.9/12								
89	16/12	17.8/12	19.5/12	21.2/11.5	23.6/10.5	25.9/8[1]					
102	18.5/12	20.6/12	22.7/11	24.7/10	27.6/9						
108	19.7/11.5	22/11.5	24.2/10	26.3/9.5	29.4/8.5						
114	20.9/12	23.3/12	25.7/12	27.9/12	31.3/12	34.5/11	38.7/10[1]	42.6/9[1]	46.4/8[1]		
127	23.5/12	26.2/12	28.9/12	31.5/12	35.3/11	39.0/9.5	43.8/8.5[1]	48.4/8[1]	52.8/7[1]		
133	24.7/12	27.5/12	30.3/12	33.1/11.5	37.2/10.5	41.1/9	46.2/8	51.1/7	55.7/6.5[1]		
140	26/12	29.1/12	32.1/12	35/12	39.3/11	43.5/10	48.9/8.5[1]	54.2/7.5[1]	59.2/7[1]		
152	28.4/12	31.7/12	35/12	38.3/11.5	43/10.5	47.7/9.5	53.7/8	59.5/7	65.1/6.5	70.5/6	
159	29.8/12.5	33.3/12.5	36.8/12	40.2/12	45.2/12	50.1/11	56.4/10	62.2/9	68.6/8	74.3/7	82.6/6.5
168	31.6/12.5	35.3/12.5	39/12	42.6/12	47.9/12	53.2/10.5	60/9.5	66.6/8.5	73/7.5	79.2/7	88.2/6.5
178	33.5/12.5	37.5/12.5	41.4/12	45.3/12	51/12	56.6/11	63.9/9.5	71/8.5	77.9/7.5	84.6/6.5	94.3/6
194	36.7/12.5	41.1/12.5	45.4/12	49.6/12	56/12	62.2/12	70.2/11.5	78.1/11	85.8/9.5	93.3/8.5	104/6.5
219	41.6/12.5	46.6/12.5	51.5/12	56.4/12	63.7/12	70.8/11.5	80.1/10.5	89.2/9	98.2/8	107/7	120/6.5
245	46.8/12	52.4/12	58/12	63.5/12	71.7/11.5	79.8/10	90.4/8.5	101/8	111/7.5	121/7	136/6
273	52.3/12	58.6/12	64.9/12	71.1/12	80.3/11	89.4/9.5	101/8	113/7.5	125/6.5	136/6	

[1] Ordering of the tubes is subject to prior agreement.

Dimensional range, weight and maximum length according to DIN 2448:1981, NF A 49 - 112:1987, EN 10210-1, 2:1994, 1997

Outside diameter (mm)	Wall thickness (mm)										
	2.3 [1]	2.6	2.9	3.2	3.6	4	4.5	5	5.6	6 [3]	6.3
	Weight (kg/m)/max. lengths (m)										
21.3	1.08/9.5	1.2/9.5	1.32/9.5	1.43/9.5	1.57/9.5	1.71/9.5					
25 [2]	1.29/9.5	1.44/9.5	1.58/9.5	1.72/9.5	1.9/9.5	2.07/9.5					
26.9	1.4/9.5	1.56/9.5	1.72/9.5	1.87/9.5	2.07/9.5	2.26/9.5	2.49/9.5				
31.8 [1]		1.87/9.5	2.07/9.5	2.26/9.5	2.5/9.5	2.74/9.5	3.03/9.5				
33.7		1.99/9.5	2.2/9.5	2.41/9.5	2.67/9.5	2.93/9.5	3.24/9.5	3.54/9.5			
38		2.27/9.5	2.51/9.5	2.75/9.5	3.05/9.5	3.35/9.5	3.72/9.5	4.07/9.5			
42.4		2.55/9.5	2.82/9.5	3.09/9.5	3.44/9.5	3.79/9.5	4.21/9.5	4.61/9.5	5.09/9.5 [1]	5.39/9.5 [1]	5.61/9.5 [1]
44.5 [1]		2.69/9.5	2.98/9.5	3.26/9.5	3.63/9.5	4.00/9.5	4.44/9.5	4.87/9.5	5.38/9.5 [1]	5.71/9.5 [1]	5.94/9.5 [1]
48.3		2.93/9.5	3.25/9.5	3.56/9.5	3.97/9.5	4.37/9.5	4.86/9.5	5.34/9.5	5.91/9.5 [1]	6.27/9.5 [1]	6.53/9.5 [1]
51 [1]			3.44/9.5	3.77/9.5	4.21/9.5	4.64/9.5	5.16/9.5	5.67/9.5	6.28/9.5 [1]	6.67/9.5 [1]	6.96/9.5 [1]
57			3.87/9.5	4.25/9.5	4.74/9.5	5.23/9.5	5.83/9.5	6.41/9.5	7.10/9.5 [1]	7.56/9.5 [1]	7.89/9.5 [1]
60.3			4.11/9	4.51/10	5.03/12	5.55/12	6.19/12	6.82/12	7.55/12	8.05/12	8.39/12
63.5 [1]			4.33/9.5	4.76/9.5	5.32/10	5.87/10.5	6.55/11.5	7.21/11.5	8/11.5	8.52/11.5	8.89/11.5
70 [1]			4.80/8.5	5.27/12	5.90/12	6.51/12	7.27/12	8.02/12	8.89/12	9.48/12	9.90/12
73 [2]			5.01/8.5	5.51/12	6.16/12	6.81/12	7.6/12	8.38/12	9.31/12	9.93/12	10.4/12
76.1			5.24/12.5	5.75/12.5	6.44/12.5	7.11/12.5	7.95/12.5	8.77/12.5	9.74/12.5	10.39/12.5	10.8/12.5
82.5 [1, 2]				6.26/12.5	7.00/12.5	7.74/12.5	8.66/12.5	9.56/12.5	10.6/12.5	11.34/12.5	11.8/12.5
88.9				6.76/12.5	7.57/12.5	8.38/12.5	9.37/12.5	10.37/12.5	11.5/12.5	12.29/12.5	12.8/12.5
101.6					8.7/12	9.63/12	10.8/12	11.9/12	13.3/12	14.17/12	14.8/12
108					9.27/11.5	10.3/11.5	11.5/11.5	12.7/11.5	14.1/11.5	15.12/11.5	15.8/11.5
114.3					9.83/11.5	10.9/11.5	12.2/11.5	13.5/12	15/12	16.05/12	16.8/12
127						12.1/12	13.6/12	15/12	16.8/12	17.93/12	18.8/12
133						12.7/12	14.3/12	15.8/12	17.6/12	18.82/12	19.7/12
139.7						13.4/11.5	15/11.5	16.6/11.5	18.5/11.5	19.81/11.5	20.7/11.5
152.4 [2]							16.4/12.5	18.2/12.5	20.3/12	21.70/12	22.7/12
159							17.1/12.5	19/12.5	21.2/12.5	22.67/12.5	23.7/12.5
168.3							18.2/12.5	20.1/12.5	22.5/12.5	24.05/12.5	25.2/12.5
177.8 [2]								21.3/12.5	23.8/12.5	25.46/12.5	26.6/12.5
193.7									26/12.5	27.82/12.5	29.1/12.5
219.1											33.1/12.5
244.5											37/12
273											41.5/11.5 [1]

[1] Ordering of the tubes is subject to prior agreement.
[2] Ordering of the tubes except for the NF A 49 - 112 size range is subject to prior agreement.
[3] The wall thickness according to EN 10210 only.
Grade in compliance with EN 10208-2, L415NB - diameters 159 mm and greater with max. wall thickness 10 mm can only be delivered.

Dimensional range, weight and maximum length according to DIN 2448:1981, NF A 49 - 112:1987, EN 10210-1, 2:1994, 1997 (continuation)

Outside diameter (mm)	Wall thickness (mm)												
	7.1	8	8.8	10	11	12 [3]	12.5	14.2	16	17.5	20	22.2 [1]	25 [1]
	Weight (kg/m)/max. lengths (m)												
60.3	9.32/12	10.3/12	11.2/12										
63.5 [1]	9.88/12	10.9/12	11.89/12										
73 [2]	11.5/12	12.8/12	13.95/11										
76.1	12.1/12.5	13.4/12	14.6/12	16.3/12									
82.5 [1, 2]	13.2/12.5	14.7/12	16.0/12	17.9/12									
88.9	14.3/12.5	16/12	17.4/12	19.5/12	21.1/11.5	22.79/11	23.6/10.5	26.2/8 [1]					
101.6	16.5/12	18.5/12	20.1/12	22.6/11	24.6/10	26.56/9.2	27.5/9						
108	17.7/11.5	19.7/11.5	21.5/11.5	24.2/10	26.3/9.5	28.45/8.7	29.4/8.5						
114.3	18.8/12	21/12	22.9/11	25.7/12	28/9.12	30.32/12	31.4/12	35.1/11	38.8/10 [1]	41.8/9 [1]	46.5/8 [1]		
127	21/12	23.5/12	25.7/12	28.9/12	31.5/12	34.09/11.2	35.3/11	39.5/9.5	43.8/6.5 [1]	47.3/8 [1]	52.8/7 [1]		
133	22/12	24.7/12	27/12	30.3/12	33.1/11.5	35.86/10.8	37.2/10.5	41.6/9	46.2/8 [1]	49.9/7.5 [1]	55.7/6.5 [1]		
139.7	23.2/12	26/12	28.4/12	32/12	34.9/12	37.85/11	39.2/11	44.0/10	48.8/8.5 [1]	52.7/8 [1]	59.0/7 [1]		
152.4 [2]	25.4/12	28.5/12	31.2/12	35.1/12	38.4/11.5	41.61/10.5	43.1/10.5	48.4/9.5	53.8/8	58.2/7	65.3/6.5	71.3/6	
159	26.6/12.5	29.8/12.5	32.6/12.5	36.7/12	40.1/12	43.57/12	45.2/12	50.7/11	56.4/10	61.1/9	68.6/8	74.9/7	82.6/6.5
168.3	28.2/12.5	31.6/12.5	34.6/12.5	39/12	42.7/12	46.33/12	48/12	54/10.5	60.1/9.5	65.1/8.5	73.1/7.5	80.0/7	88.4/6.5
177.8 [2]	29.9/12.5	33.5/12.5	36.7/12.5	41.4/12	45.2/12	49.14/12	51/12	57.3/11	63.8/9.5	69.2/8.5	77.8/7.5	85.2/7	94.2/6
193.7	32.7/12.5	36.6/12.5	40.1/12.5	45.3/12	49.6/12	53.86/12	55.9/12	62.9/12	70.1/11.5	76/11	85.7/9.5	93.9/8.5	104/7.5
219.1	37.1/12.5	41.6/12.5	45.6/12.5	51.6/12	56.5/12	61.38/12	63.7/12	71.8/11.5	80.1/10.5	87/9.5	98.2/8	108/7	120/6.5
244.5	41.6/12	46.7/12	51.2/12	57.8/12	63.3/12	68.91/11.5	71.5/11.5	80.6/10	90.2/8.5	98/8	111/7.5	122/7	135/6
273	46.6/12	52.3/12	57.3/12	64.9/12	71.1/12	77.36/11	80.3/11	90.6/9.5	101/8	110/7.8	125/6.5	137/6	

[1] Ordering of the tubes is subject to prior agreement.
[2] Ordering of the tubes except for the NF A 49 - 112 size range is subject to prior agreement.
[3] The wall thickness according to EN 10210 only.
Grade in compliance with EN 10208-2, L415NB - diameters 159 mm and greater with max. wall thickness 10 mm can only be delivered.

Dimensional range, weight and maximum length according to ASTM A 53:2004, ASTM A 106:2004, ASTM A 333:2004

Size	Outside diameter		Wall thickness		Weight		Weight class	Schedule No.	Max. length	
NPS	in	mm	in	mm	lb/ft	kg/m			Ft	m
1/2	0.840	21.3	0.109	2.77	0.85	1.27	STD	40	31.17	9.5
			0.147	3.73	1.09	1.62	XS	80	31.17	9.5
3/4	1.050	26.7	0.113	2.87	1.13	1.69	STD	40	31.17	9.5
			0.154	3.91	1.48	2.20	XS	80	31.17	9.5
1	1.315	33.4	0.133	3.38	1.68	2.50	STD	40	31.17	9.5
			0.179	4.55	2.17	3.24	XS	80	31.17	9.5
1 ¼	1.660	42.2	0.140	3.56	2.27	3.39	STD	40	31.17	9.5
			0.191	4.85	3.00	4.47	XS	80	31.17	9.5
1 ½	1.900	48.3	0.145	3.68	2.72	4.05	STD	40	31.17	9.5
			0.200	5.08	3.63	5.41	XS	80	31.17	9.5
2	2.375	60.3	0.154	3.91	3.66	5.44	STD	40	37.73	12.0
			0.218	5.54	5.03	7.48	XS	80	37.73	12.0
2 ½	2.875	73.0	0.203	5.16	5.80	8.63	STD	40	39.37	12.0
			0.276	7.01	7.67	11.41	XS	80	39.37	12.0
3	3.500	88.9	0.125	3.18	4.51	6.72	...	...	39.37	12.0
			0.156	3.96	5.58	8.29	...	...	39.37	12.0
			0.188	4.78	6.66	9.92	...	...	39.37	12.0
			0.216	5.49	7.58	11.29	STD	40	41.01	12.5
			0.250	6.35	8.69	12.93	...	...	41.01	12.5
			0.281	7.14	9.67	14.40	...	...	41.01	12.5
			0.300	7.62	10.26	15.27	XS	80	41.01	12.5
			0.438	11.13	14.34	21.35	...	160	36.09	11.5
3 ½	4.000	101.6	0.125	3.18	5.18	7.72	...	...	37.73	11.5
			0.156	3.96	6.41	9.53	...	...	39.37	12.0
			0.188	4.78	7.66	11.41	...	...	39.37	12.0
			0.226	5.74	9.12	13.57	STD	40	39.37	12.0
			0.250	6.35	10.02	14.92	...	...	39.37	12.0
			0.281	7.14	11.17	16.63	...	...	39.37	12.0
			0.318	8.08	12.52	18.63	XS	80	39.37	12.0
4	4.500	114.3	0.156	3.96	7.24	10.78	...	...	37.73	11.5
			0.188	4.78	8.67	12.91	...	...	37.73	11.5
			0.219	5.56	10.02	14.91	...	...	39.37	12.0
			0.237	6.02	10.80	16.07	STD	40	41.01	12.5
			0.250	6.35	11.36	16.90	...	...	41.01	12.5
			0.281	7.14	12.67	18.87	...	...	41.01	12.5
			0.312	7.92	13.97	20.78	...	...	41.01	12.5
			0.337	8.56	15.00	22.32	XS	80	41.01	12.5
			0.438	11.13	19.02	28.32	...	120	41.01	12.5

Dimensional range, weight and maximum length according to ASTM A 53:2004, ASTM A 106:2004, ASTM A 333:2004 (continuation)

Size	Outside diameter		Wall thickness		Weight		Weight class	Schedule No.	Max. length	
NPS	in	mm	in	mm	lb/ft	kg/m			ft	m
5	5.563	141.3	0.156	3.96	9.02	13.41	...	...	37.73	11.5
			0.188	4.78	10.80	16.09	...	...	39.37	12.0
			0.219	5.56	12.51	18.61	...	...	39.37	12.0
			0.258	6.55	14.63	21.77	STD	40	39.37	12.0
			0.281	7.14	15.87	23.62	...	...	39.37	12.0
			0.312	7.92	17.51	26.05	...	...	37.73	12.0
			0.344	8.74	19.19	28.57	...	...	37.73	12.0
			0.375	9.52	20.80	30.94	XS	80	36.09	12.0
			0.500	12.70	27.04	40.28	...	120	36.09	11.0
6	6.625	168.3	0.188	4.78	12.94	19.27	...	...	39.37	12.0
			0.219	5.56	15.00	22.31	...	...	39.37	12.0
			0.250	6.35	17.04	25.36	...	...	39.37	12.0
			0.280	7.11	18.99	28.26	STD	40	39.37	12.0
			0.312	7.92	21.06	31.32	...	...	39.37	12.0
			0.344	8.74	23.10	34.39	...	...	39.37	12.0
			0.375	9.52	25.05	37.28	...	...	39.37	12.0
			0.432	10.97	28.60	42.56	XS	80	39.37	12.0
			0.500	12.70	32.74	48.73	…	…	36.09	11.0
			0.562	14.27	36.43	54.20	...	120	32.80	10.0
			0.719	18.26	45.39	67.56	...	160	26.25	8.0
8	8.625	219.1	0.250	6.35	22.38	33.31	...	20	39.37	12.0
			0.277	7.04	24.72	36.81	...	30	39.37	12.0
			0.312	7.92	27.73	41.24	...	...	39.37	12.0
			0.322	8.18	28.58	42.55	STD	40	39.37	12.0
			0.344	8.74	30.45	45.34	...	...	39.37	12.0
			0.375	9.52	33.07	49.20	...	...	39.37	12.0
			0.406	10.31	35.67	53.08	...	60	39.37	12.0
			0.438	11.13	38.33	57.08	...	...	39.37	12.0
			0.500	12.70	43.43	64.64	XS	80	39.37	12.0
			0.562	15.09	51.00	75.92	...	100	36.09	11.0
			0.719	18.26	60.77	90.44	...	120	31.17	9.0
10	10.750	273.1	0.250	6.35	28.06	42.09	…	20	39.37	12.0
			0.279	7.09	31.23	46.49	...	...	39.37	12.0
			0.307	7.80	34.27	51.01	...	30	39.37	12.0
			0.344	8.74	38.27	56.96	...	...	39.37	12.0
			0.365	9.27	40.52	60.29	STD	40	39.37	12.0
			0.438	11.13	48.28	71.87	...	...	39.37	12.0
			0.500	12.70	54.79	81.52	XS	60	36.09	10.5
			0.594	15.09	64.49	95.97	...	80	31.17	8.5
			0.719	18.26	77.10	114.70	...	100	23.95	7.0

Dimensional range, weight and maximum length according to GOST 8732:1978

Outside diameter (mm)	Wall thickness (mm)										
	2.5	2.8	3	3.5	4	4.5	5	5.5	6	7	8
	Weight (kg/m)/max. lengths (m)										
25	1.39/9.5	1.53/9.5	1.63/9.5	1.86/9.5	2.07/9.5						
28	1.57/9.5	1.74/9.5	1.85/9.5	2.11/9.5	2.37/9.5	2.61/9.5					
32	1.82/9.5	2.02/9.5	2.15/9.5	2.46/9.5	2.76/9.5	3.05/9.5					
38	2.19/9.5	2.43/9.5	2.59/9.5	2.98/9.5	3.35/9.5	3.72/9.5	4.07/9.5				
42		2.71/9.5	2.89/9.5	3.32/9.5	3.75/9.5	4.16/9.5	4.56/9.5	4.95/9.5[1]	5.33/9.5[1]		
45		2.91/9.5	3.11/9.5	3.58/9.5	4.04/9.5	4.49/9.5	4.93/9.5	5.36/9.5[1]	5.77/9.5[1]		
57			4.00/10	4.62/10	5.23/10	5.83/10	6.41/10	6.99/9.5[1]	7.55/9.5[1]		
60			4.22/10	4.88/12	5.52/12	6.16/12	6.78/12	7.39/12	7.99/12	9.15/12	10.26/12
63.5			4.48/9	5.18/11.5	5.87/11.5	6.55/12	7.21/12	7.87/12	8.51/12	9.75/12	10.95/12
73			5.18/8.5	6.00/12	6.81/12	7.60/12	8.39/12	9.16/12	9.91/12	11.39/12	12.82/12
76			5.40/12.5	6.26/12.5	7.10/12.5	7.94/12.5	8.76/12.5	9.56/12.5	10.36/12.5	11.91/12.5	13.42/12
89				7.38/12.5	8.39/12.5	9.38/12.5	10.36/12.5	11.33/12.5	12.28/12.5	14.16/12.5	15.98/12
102				8.50/12	9.67/12	10.82/12	11.96/12	13.09/12	14.21/12	16.40/12	18.55/12
108					10.26/11.5	11.49/11.5	12.70/11.5	13.90/11.5	15.09/11.5	17.44/11.5	19.73/11.5
114					10.85/11.5	12.15/11.5	13.44/12	14.72/12	15.98/12	18.47/12	20.91/12
127					12.13/12	13.60/12	15.04/12	16.48/12	17.90/12	20.72/12	23.48/12
133					12.7/12	14.26/12	15.78/12	17.29/12	18.79/12	21.75/12	24.66/12
140						15.04/11.5	16.65/11.5	18.24/11.5	19.83/12.5	22.96/12	26.04/12
146						15.70/12	17.39/12	19.06/12	20.72/11	24.00/12	27.23/11.5
152						16.37/12.5	18.13/12.5	19.87/12[1]	21.60/12[1]	25.03/12[1]	28.41/12[1]
159						17.15/12.5	18.99/12.5	20.82/12.5	22.64/12.5	26.24/12.5	29.79/12.5
168							20.10/12.5	22.04/12.5	23.97/12.5	27.79/12.5	31.57/12.5
194								25.57/12.5	27.82/12.5	32.28/12.5	36.70/12.5
219									31.52/12	36.60/12.5	41.63/12.5
245										41.09/12	46.76/12
273										45.92/12	52.28/12

[1] Ordering of the tubes is subject to prior agreement.

Dimensional range, weight and maximum length according to GOST 8732:1978 (continuation)

Outside diameter (mm)	Wall thickness (mm)								
	9	10	11	12	14	16	17	18	20
	Weight (kg/m)/max. lengths (m)								
76	14.87/11	16.3/12							
89	17.76/12	19.48/12	21.16/11.5	22.82/11					
102	20.64/12	22.69/11	24.69/10	26.67/9					
108	21.97/11.5	24.17/10	26.31/9.5	28.45/8.5					
114	23.31/12	25.65/12	27.94/12	30.23/11.5					
127	26.19/12	28.85/12	31.47/12	34.08/12					
133	27.52/12	30.33/12	33.10/12	35.86/10.5					
140	29.08/12	32.06/12	35.00/12	37.88/11					
146 [1]	30.41/11.5	33.54/11.5	36.62/11	39.66/10					
152	31.74/12[1]	35.02/12 [1]	38.25/11.5[1]	41.43/10.5	47.65/9.5	53.66/8	56.60/7	59.48/6.5	65.11/6
159	33.29/12.5	36.75/12	40.15/12	43.50/12	50.06/11	56.43/10	59.53/9	62.59/9	68.56/8
168	35.29/12.5	38.97/12	42.59/12	46.17/12	53.17/10.5	59.98/9.5	63.31/8.5	66.59/8.5	73.00/7.5
194	41.06/12.5	45.38/12	49.64/12	53.86/12	62.15/12	70.24/11.5	74.21/11	78.13/11	85.82/7.5
219	46.61/12.5	51.54/12	56.43/12	61.26/12	70.78/11.5	80.10/10.5	84.69/9.5	89.23/9	98.15/8
245	52.38/12	57.95/12	63.48/12	68.95/11.5	79.76/10	90.36/8.5	95.59/8	100.77/8	110.98/7.5
273	58.60/12	64.86/12	71.07/12[1]	77.24/11[1]	89.42/9.5	101.41/8[1]	107.33/7.5 [1]	113.20/7.5 [1]	124.79/6.5[1]

[1] Ordering of the tubes is subject to prior agreement.

Seamless tubes suitable for screwing (threaded tubes)

Dimensional standards

CSN 42 5710:1976	"Steel tubes suitable for screwing - medium series"
CSN 42 5711:1976	"Steel tubes suitable for screwing - heavy series"
DIN 2440:1978	"Steel tubes, medium weight suitable for screwing"
DIN 2441:1978	"Steel tubes, heavy weight suitable for screwing"
NF A 49-115:1978	"Hot-rolled seamless steel tubes suitable for threading"
UNI 8863:1987[1]	"Seamless and welded carbon steel tubes, suitable for screwing" (threads according to UNI ISO 7/1)
EN 10255:2004	"Non-alloyed steel tubes suitable for screwing"

Dimensional range

According to CSN 42 5710:1976, DIN 2440:1978, CSN 42 5711:1976, DIN 2441:1978

Size		Outside diameter	Wall thickness			
DN	NPS	mm	CSN 42 5710 DIN 2440		CSN 42 5711 DIN 2441	
			mm	Kg/m	mm	Kg/m
15	1/2	21.3	2.65	1.22	3.25	1.45
20	3/4	26.9	2.65	1.58	3.25	1.90
25	1	33.7	3.25	2.44	4.05	2.96
32	1 ¼	42.4	3.25	3.14	4.05	3.83
40	1 ½	48.3	3.25	3.61	4.05	4.42
50	2	60.3	3.65	5.10	4.50	6.19
65	2 ½	76.1	3.65	6.51	4.50	7.95
80	3	88.9	4.05	8.47	4.85	10.05
90	3 ½	101.6	4.05	9.72	4.85	11.57
100	4	114.3	4.50	12.19	5.40	14.50
125	5	139.7	4.85	16.13	5.40	17.89

According to NF A 49-115:1978, EN 10255:2004

Size		Outside diameter	Wall thickness			
DN	NPS	mm	Middle series		Heavy series	
			mm	Kg/m	mm	Kg/m
15	1/2	21.3	2.6	1.20	3.2	1.43
20	3/4	26.9	2.6	1.56	3.2	1.87
25	1	33.7	3.2	2.41	4.0	2.93
32	1 ¼	42.4	3.2	3.09	4.0	3.79
40	1 ½	48.3	3.2	3.56	4.0	4.37
50	2	60.3	3.6	5.03	4.5	6.19
65	2 ½	76.1	3.6	6.44	4.5	7.95
80	3	88.9	4.0	7.57	4.9 (5.0)	10.15 (10.35)
90	3 ½	101.6	4.0	9.63	4.9	11.69
100	4	114.3	4.5	12.19	5.4	14.50
125	5	139.7	4.5 (5.0)	15.00 (16.61)	5.4	17.89

The data in brackets are the sizes according to EN 10255.

According to UNI 8863:1987

Light series

Size			Wall thickness (mm)	Weight Kg/m
DN	(")	(mm)		
15	1/2	21.3	2.3	1.08
20	3/4	26.9	2.3	1.40
25	1	33.7	2.9	2.20
32	1 ¼	42.4	2.9	2.82
40	1 ½	48.3	2.9	3.25
50	2	60.3	3.2	4.51
65	2 ½	76.1	3.2	5.75
80	3	88.9	3.6	7.57
100	4	114.3	4.0	10.88

Middle series

Size			Wall thickness (mm)	Weight Kg/m
DN	(")	(mm)		
15	1/2	21.3	2.6	1.20
20	3/4	26.9	2.6	1.56
25	1	33.7	3.2	2.41
32	1 ¼	42.4	3.2	3.09
40	1 ½	48.3	3.2	3.56
50	2	60.3	3.6	5.03
65	2 ½	76.1	3.6	6.44
80	3	88.9	4.0	8.38
100	4	114.3	4.5	12.19
125	5	139.7	5.0	16.61

Heavy series

Size			Wall thickness (mm)	Weight Kg/m
DN	(")	(mm)		
15	1/2	21.3	3.2	1.43
20	3/4	26.9	3.2	1.87
25	1	33.7	4.0	2.93
32	1 ¼	42.4	4.0	3.79
40	1½	48.3	4.0	4.37
50	2	60.3	4.5	6.19
65	2 ½	76.1	4.5	7.95
80	3	88.9	5.0	10.35
100	4	114.3	5.4	14.50
125	5	139.7	5.4	17.89

Wall thickness tolerance: -12.5 % of NWT/ +10 % of tube weight (applicable to all series).

Steel grades

Seamless tubes suitable for screwing are delivered in compliance with CSN 42 5710:1976 and CSN 42 5711 in grades 11 353.0, 11 353.1 and in compliance with DIN 2240:1978 and DIN 2441:1978 in grade St 33 (DIN 17100:1980). Tubes manufactured in compliance with NF A 49 - 115:1978 are delivered in grade TU 34-1, in compliance with UNI 8863:1987 in grade Fe 330, and in compliance with EN 10255:2004 in grade S195T.

Lengths

Tubes are delivered in short lengths. Precise lengths are subject to prior agreement with the producer.

Pipe finish and end workmanship

Tubes suitable for screwing are delivered with the surface in conformity to the customer's requirements:

- scaled inside and outside
- with outside and/or inside zinc coating[1]
- with outside protective paint for short-term protection

Tubes are delivered with plain ends only.

Bundling and method of delivery

The method is the same as that of the plain-end tubes of corresponding lengths.

[1] Subject to agreement (with external maker)

Flanged pipes

Flanged pipes are manufactured in conformity to the following standards:

With double bordering and loose flanges for PN 10, 16, 25, 40 according to KN 42 5792:1995. The pipes used for manufacture of flanged pipes in accordance with KN comply with CSN 42 5715:1981 and CSN 42 0250:1988.

Dimensions and weights of pipe for PN 10, 16, 25, 40 (KN 42 5792:1995)

Tube					Flange					Screw holes			Weight	
PN	DN	$D_{4 x t}$	D_3	b = 2t	D	D_1	D_2	a	z	d	Number	Thread	Plain-end pipe kg/m	2 flanges 2 borders » kg
10 --- 16	80	89 × 3.6	113 ÷ 135	7.2	94	200 (195)	160	18	3	18	8 (4)	M16	7.58	7.72 (7.56)
10 --- 16	100	108 × 4	135 ÷ 155	8	113	220 (215)	180	18	3	18	8	M16	10.3	9.26 (8.78)
10 --- 16	150	159 × 4.5	191 ÷ 212	9	164	285 (280)	240	18	3	22 (23)	8	M20	17.2	14.64 (13.94)
10 --- 16	200	219 × 6.3	245 ÷ 268	12.6	225	340 (335)	295	20	3	22 (23)	8 --- 12	M20	33.1	24.48 (23.48) 24.44 (23.48)
25 --- 40	80	89 × 3.6	113 ÷ 135	7.2	94	200 (195)	160	24	3	18	8	M16	7.58	10.05 (9.47)
25 --- 40	100	108 × 4	135 ÷ 155	8	113	235 (230)	190	24	3	22 (23)	8	M20	10.3	13.68 (12.88)
25 --- 40	150	159 × 4.5	191 ÷ 212	9	164	300	250	30	3	26 (27)	8	M24	17.2	25.58 (25.43)
25	200	219 × 6.3	278	12.6	225	360	310	30	3	26 (27)	12	M24	33.1	35.7 (35.46)

The meaning of D1, D2, D3, etc. is given in the above mentioned standard KN 42 5792.

Material data

Pipes: both types of flanged pipes are made of steel grade 11 353.0 or .1
Loose flanges: delivered either forged in steel grade 11 373, 11 375 or cast steel.

Finish

Flanged pipes with double bordering on both ends are delivered with black surface.
Another type of finish is subject to agreement.

Flanged pipes are delivered without connection screws and packing.

Length

Flanged pipes are delivered in:
- limited lengths - most frequently delivered in 4 - 6 m
- approximate lengths with tolerance of ±500 mm or in the range of 1000 mm
- exact lengths (exceptional requirement by the customer) with tolerance of +100/-0 mm

Surface

Flanged pipes with double bordering are delivered with scaled surface. Another type of surface finish is subject to prior agreement.

Oil Country Tubular Goods (OCTG)

Grade Range

Casing and tubing are delivered according to API Spec 5CT, drill pipe according to API Spec 5D, and line pipe according to API Spec 5L.

Type	API Specification	Version of API Specification	Grade
Casing	Spec 5CT	2nd edition, 1989	C75-2
		7th edition, 2001	H40, J55, K55, N80-1[2], N80-Q[2] M65[1], L80-1, C95 P110 Q125[1] High Collapse[5] NH L80 HC, NH C95 HC, NH P110 HC
Tubing	Spec 5CT	7th edition, 2001	H40, J55, N80-1[2], N80-Q[2] L80-1, C95[1, 4] P110[1]
Drill Pipe	Spec 5D	5th edition 2002	E75, X95, G105
Line Pipe (seamless)[6]	Spec 5L	43rd edition, 2004	PSL 1: A, B, X42, X46, X52[1], X56[1], X60[1, 7]
			PSL 2[3]: B, X42, X46, X52[1], X56[1], X60[1, 7]

[1] Deliveries of the grades are subject to prior agreement.
[2] Delivered by the producer's option or by agreement with the customer
[3] Only grades B and X42 in sizes 114.3 and higher
[4] Without monogram API (C95 is not covered by API Spec 5CT for tubing, but can be delivered if agreed by the producer.)
[5] Subject to agreement, resistance to outside pressure collapsing incl. High Collapse testing can be guaranteed - see the relevant table.
[6] Line Pipe with spiral weld - see the following chapter "Spiral-weld pipes"
[7] Only diameters 6 $^{5}/_{8}$" and greater, wall thickness see the detailed table of dimensions for Line Pipe.

The size-wise specifications of oil country tubular goods of the above grades are stated in the dimension tables.

Casing according to API Spec 5CT (8th edition, 2005)

Dimensional range, weight, grade

Outside diameter		Wall thickness		Nominal weight of threaded pipe with coupling		Max. length	Grade [3]	Type of thread[4]
in	mm	in	mm	lb/ft	kg/m	range		
4 1/2	114.30	0.205	5.21	9.50	14.14	3	H, J, K	short
		0.224	5.69	10.50	15.63	3	J, K	short, buttress
		0.250	6.35	11.60	17.26	3	J, K, N, L, C, P	short, long, buttress
		0.290	7.37	13.50 [1]	20.09	3	N, L, C, P	long, buttress
		0.337	8.56	15.10 [1]	22.47	3	P	long, buttress
5	127.00	0.220	5.59	11.50	17.11	3	J, K	short
		0.253	6.43	13.00	19.35	3	J, K	short, long, buttress, HSC[2]
		0.296	7.52	15.00 [1]	22.32	3	J, K, L, N, C, P	short, long, buttress, HSC[2]
		0.362	9.19	18.00 [1]	26.79	3	N, L, C, P	long, buttress, HSC[2]
5 1/2	139.70	0.244	6.20	14.00	20.83	3	H, J, K	short
		0.275	6.99	15.50 [1]	23.07	3	J, K	short, long, buttress, HSC
		0.304	7.72	17.00 [1]	25.30	3	J, K, N, L, C, P	short, long, buttress, HSC
		0.361	9.17	20.00 [1]	29.76	3	N, L, C, P	long, buttress, HSC
		0.415	10.54	23.00 [1]	34.23	3	N, L, C, P	long, buttress, HSC
6 5/8	168.28	0.288	7.32	20.00 [1]	29.76	3	H, J, K	short, long, buttress, HSC[2]
		0.352	8.94	24.00 [1]	35.72	3	J, K, N, L, C, P	short, long, buttress, HSC[2]
		0.417	10.59	28.00 [1]	41.67	3	N, L, C, P	long, buttress, HSC[2]
		0.475	12.07	32.00 [1]	47.62	3	N, L, C, P	long, buttress, HSC[2]
7	177.80	0.272	6.91	20.00	29.76	3	H, J, K	short
		0.317	8.05	23.00 [1]	34.23	3	N, L, J, K, C	short, long, buttress, HSC
		0.362	9.19	26.00 [1]	38.69	3	J, K, N, L, C, P	short, long, buttress, HSC
		0.408	10.36	29.00 [1]	43.16	3	N, L, C, P	long, buttress, HSC
		0.453	11.51	32.00 [1]	47.62	3	N, L, C, P	long, buttress, HSC
		0.498	12.65	35.00 [1]	52.09	3	N, L, C, P	long, buttress, HSC
7 5/8	193.68	0.300	7.62	24.00	35.72	3	H	short
		0.328	8.33	26.40	39.29	3	J, K, N, L, C	short, long, buttress, HSC[2]
		0.375	9.53	29.70 [1]	44.20	3	N, L, C, P	long, buttress, HSC[2]
		0.430	10.92	33.70 [1]	50.15	3	N, L, C, P	long, buttress, HSC[2]
		0.500	12.70	39.00 [1]	58.04	3	N, L, C, P	long, buttress, HSC[2]
8 5/8	219.08	0.304	7.72	28.00	41.67	3	H	short
		0.352	8.94	32.00 [1]	47.62	3	H, J, K	short, long, buttress, HSC[2]
		0.400	10.16	36.00 [1]	53.57	3	J, K, N, L, C	short, long, buttress, HSC[2]
		0.450	11.43	40.00 [1]	59.53	3	N, L, C, P	long, buttress, HSC[2]
		0.500	12.70	44.00 [1]	65.48	2	N, L, C, P	long, buttress, HSC[2]
9 5/8	244.48	0.352	8.94	36.00	53.57	3	H, J, K	short, long, buttress, HSC[2]
		0.395	10.03	40.00 [1]	59.53	3	J, K, N, L, C	short, long, buttress, HSC[2]
		0.435	11.05	43.50 [1]	64.74	3	N, L, C, P	long, buttress, HSC[2]
		0.472	11.99	47.00 [1]	69.94	3	N, L, C, P	long, buttress, HSC[2]
		0.545	13.84	53.50 [2]	79.61	3	N, L, C, P	long, buttress, HSC[2]
10 3/4	273.05	0.350	8.89	40.50	60.27	3	J, K	short, buttress

[1] Subject to agreement, the pipes can also be delivered with a gastight connection.
[2] Delivery is subject to prior agreement.
[3] Subject to agreement, grade M65 according to 7th edition of API Spec 5CT can also be delivered.
[4] With all types of buttress thead also "Special Clearence" (SC) workmanship

Subject to agreement, High Collapse testing can be conducted for the grades stated in the following table.
Subject to agreement, casing according to GOST 632:1980, O. D. 5 ¾", wall thickness 6.5, 7.0, 7.7, 8.5, 9.5, 10.7 mm can be delivered.

High Collapse - Casing according to API Spec 5CT (8th edition, 2005)

Dimensional range, weight, grade

Nominal outside diameter		Nominal wall thickness		Nominal weight	Proportion	"Design" of collapse pressure					
						NH L80 HC		NH C95 HC		NH P110 HC	
in	mm	in	mm	lb/ft	D/t	psi	MPa	psi	MPa	psi	MPa
4 ½	114.30	0.205	5.21	9.50	21.94	4 860	33.5	5 340	36.8	5 490	37.9
	114.30	0.224	5.69	10.50	20.09	5 960	41.1	6 650	45.9	6 960	48.0
	114.30	0.250	6.35	11.60	18.00	7 350	50.6	8 390	57.8	9 050	62.4
	114.30	0.290	7.37	13.50	15.51	9 160	63.2	10 690	73.7	11 970	82.5
	114.30	0.337	8.56	15.10	13.35	11 040	76.1	13 000	89.6	14 820	102.2
5	127.00	0.220	5.59	11.50	22.72	4 450	30.7	4 870	33.6	4 980	34.3
	127.00	0.253	6.43	13.00	19.75	6 180	42.6	6 920	47.7	7 260	50.1
	127.00	0.296	7.52	15.00	16.89	8 130	56.0	9 390	64.7	10 310	71.1
	127.00	0.362	9.19	18.00	13.82	10 600	73.1	12 460	85.9	14 160	97.6
5 ½	139.70	0.244	6.20	14.00	22.53	4 550	31.4	4 980	34.3	5 100	35.2
	139.70	0.275	6.98	15.50	20.01	6 010	41.4	6 710	46.3	7 020	48.4
	139.70	0.304	7.72	17.00	18.10	7 280	50.2	8 310	57.3	8 940	61.7
	139.70	0.361	9.17	20.00	15.23	9 380	64.7	10 960	75.6	12 310	84.9
	139.70	0.415	10.54	23.00	13.25	11 140	76.8	13 110	90.4	14 960	103.1
6 5/8	168.28	0.288	7.32	20.00	22.99	4 320	29.8	4 710	32.5	4 820	33.2
	168.28	0.352	8.94	24.00	18.82	6 790	46.8	7 680	52.9	8 170	56.4
	168.28	0.417	10.59	28.00	15.89	8 870	61.1	10 320	71.2	11 500	79.3
	168.28	0.475	12.06	32.00	13.95	10 480	72.2	12 310	84.9	13 980	96.4
7	177.80	0.272	6.91	20.00	25.73	3 180	21.9	3 440	23.7	3 480	24.0
	177.80	0.317	8.05	23.00	22.09	4 780	33.0	5 250	36.2	5 390	37.2
	177.80	0.362	9.19	26.00	19.35	6 440	44.4	7 240	49.9	7 650	52.7
	177.80	0.408	10.36	29.00	17.16	7 930	54.7	9 140	63.0	9 990	68.9
	177.80	0.453	11.51	32.00	15.45	9 210	63.5	10 750	74.1	12 050	83.1
	177.80	0.498	12.65	35.00	14.06	10 380	71.6	12 190	84.1	13 840	95.4
7 5/8	193.68	0.300	7.62	24.00	25.42	3 290	22.7	3 560	24.5	3 610	24.9
	193.68	0.328	8.33	26.40	23.25	4 190	28.9	4 570	31.5	4 670	32.2
	193.68	0.375	9.52	29.70	20.34	5 800	40.0	6 460	44.5	6 730	46.4
	193.68	0.430	10.92	33.70	17.74	7 530	51.9	8 620	59.5	9 340	64.4
	193.68	0.500	12.70	39.00	15.25	9 370	64.6	10 950	75.5	12 290	84.8
8 5/8	219.08	0.304	7.72	28.00	28.38	2 400	16.6	2 580	17.8	2 610	18.0
	219.08	0.352	8.94	32.00	24.51	3 640	25.1	3 950	27.2	4 010	27.7
	219.08	0.400	10.16	36.00	21.56	5 070	35.0	5 590	38.5	5 760	39.7
	219.08	0.450	11.43	40.00	19.17	6 560	45.2	7 390	51.0	7 830	54.0
	219.08	0.500	12.70	44.00	17.25	7 870	54.3	9 060	62.5	9 890	68.2
9 5/8	244.48	0.352	8.94	36.00	27.35	2 670	18.4	2 880	19.9	2 910	20.1
	244.48	0.395	10.03	40.00	24.37	3 690	25.5	4 010	27.6	4 070	28.1
	244.48	0.435	11.05	43.50	22.12	4 760	32.8	5 220	36.0	5 370	37.0
	244.48	0.472	11.99	47.00	20.39	5 770	39.8	6 420	44.3	6 690	46.1
	244.48	0.550	13.84	53.50	17.66	7 580	52.2	8 690	59.9	9 420	65.0

Note : psi x 0.006894757 = MPa

Tubing according to API Spec 5CT (8th edition, 2005)

Dimensional range, weight, grade

Outside diameter		Wall thickness		Nominal weight of threaded pipe with coupling		Max. length	Grade	End workmanship [5]
in	mm	in	mm	lb/ft	kg/m	range		
1.9 [2]	48.26	0.145	3.68	2.75	4.09	2	J	non upset
		0.200	5.08	3.65	5.43	2	J	external upset
2 3/8	60.32	0.167	4.24	4.00 [1]	5.95	2, 3	J	non upset
		0.190	4.83	4.60	6.85	2, 3	J	non upset
		0.190	4.83	4.70	6.99	2, 3	J	external upset
2 7/8	73.02	0.217	5.51	6.40 [1]	9.52	2, 3	J, N[3], P, L	non upset
		0.217	5.51	6.50	9.67	2, 3	J, N[3], L	external upset
3 1/2	88.90	0.216	5.49	7.70 [1]	11.46	2, 3	J, N[3], L	non upset
		0.254	6.45	9.20 [1]	13.69	2, 3	J, N[3], L, P	non upset
		0.254	6.45	9.30	13.84	2, 3	J, N[3], L	external upset
		0.289	7.34	10.20 [1]	15.18	2, 3	J, N[3], L	non upset
		0.375	9.52	12.70 [1]	18.90	2, 3	N[3], L, P	non upset
		0.375	9.52	12.95	19.27	2, 3	N[3], L	external upset
4	101.60 [2]	0.226	5.74	9.50 [1]	14.14	2, 3	J, N[3], L	non upset
		0.262	6.65	11.00	16.37	2, 3	J, N[3], L	external upset
		0.330	8.38	13.20 [1]	19.64	2, 3	L[4]	non upset
		0.415	10.54	16.10 [1]	23.96	2	L[4]	non upset
4 1/2	114.30	0.271	6.88	12.60 [1]	18.75	2, 3	J, N[3], L	non upset
		0.271	6.88	12.75	18.97	2, 3	J, N[3], L	external upset

[1] Subject to agreement, the pipes can also be delivered with a gastight connection.
[2] Delivery is subject to prior agreement.
[3] Delivered as grade N80-1 or N80-Q by the producer's option or by agreement with the customer.
[4] Plain ends only.
[5] With all types of external upset ends with joints of outside diameter 2 3/8" - 3 1/2" also "Special Clearence" (SC) workmanship

Drill Pipe according to API Spec 5D, 5th edition, 2002

Dimensional range, weight, grade

Outside diameter		Wall thickness		Weight of pipe		Max. length	Grade	End workmanship[4]
in	mm	in	mm	lb/ft	kg/m	range		
2 3/8 [1]	60.3	0.280	7.11	6.65	9.90	2	E, X, G	EU
2 7/8 [1]	73.0	0.362	9.19	10.40	15.49	2	E, X, G	EU
3 1/2	88.9	0.254 0.368 0.449	6.45[1] 9.35[1] 11.40	9.50 13.30 15.50	14.14 19.81 23.09	2 2 2	E E, X, G E[1], X[2], G[2]	EU nebo IEU
4	101.6	0.330	8.38	14.00	20.83	2	G	EU
4 1/2	114.3	0.337 0.430	8.56 10.92[2]	16.60 20.00	22.32 29.76	2	G	EU nebo IEU
5	127.0	0.362 0.500	9.19 12.70[3]	19.50 25.60	29.05 30.10	2	E, X, G	IEU

[1] External upset only - subject to prior agreement
[2] External & internal upset only - subject to prior agreement
[3] Grade G105 only - subject to prior agreement
[4] EU = External Upset, IEU = Internal & External Upset

Note: Drill pipes with weld-on tool joints according to API Spec 7 (38th edition, 1994) are delivered in outside diameters 3 ½" and 5" only.

Line Pipe according to API Spec 5L (43th edition, 2004)
Dimensional range, weight, grade

Nominal size	Size NPS (ASTM)	Outside diameter		Wall thickness			Schedule No. (equivalent ASTM)	Weight of plain-end tube		Max. production length	
in	in	in	mm	in	mm	mm (ASTM)		lb/ft	kg/m	ft	m
1/2	1/2	0.840	21.3	0.109	2.80	2.77	40	0.85	1.28	34.17	9.5
				0.147	3.70	3.73	80	1.09	1.61	34.17	9.5
3/4	3/4	1.050	26.7	0.113	2.90	2.87	40	1.13	1.70	34.17	9.5
				0.154	3.9	3.91	80	1.48	2.19	34.17	9.5
1	1	1.315	33.4	0.133	3.4	3.38	40	1.68	2.52	34.17	9.5
				0.179	4.5	4.55	80	2.17	3.21	34.17	9.5
1 1/4	1 1/4	1.660	42.2	0.140	3.6	3.56	40	2.27	3.43	34.17	9.5
				0.191	4.9	4.85	80	3.00	4.51	34.17	9.5
1 1/2	1 1/2	1.900	48.3	0.145	3.7	3.68	40	2.72	4.07	34.17	9.5
				0.200	5.1	5.08	80	3.63	5.43	34.17	9.5
2 3/8	2	2. 375	60.3	0.125	3.2	3.18	…	3.01	4.51	29.53	9.0
				0.141	3.6	3.58	…	3.37	5.03	32.81	10.0
				0.154	3.9	3.91	40	3.66	5.42	37.73	12.0
				0.172	4.4	4.37	…	4.05	6.07	37.73	12.0
				0.188	4.8	4.78	…	4.40	6.57	37.73	12.0
				0.218	5.5	5.54	80	5.03	7.43	37.73	12.0
				0.250	6.4	6.35	…	5.68	8.51	37.73	12.0
				0.281	7.1	7.14	…	6.29	9.31	37.73	12.0
2 7/8	2 1/2	2.875	73.0	0.125	3.2	3.18	…	3.67	5.51	37.73	12.0
				0.141	3.6	3.58	…	4.12	6.16	37.73	12.0
				0.156	4.0	3.96	…	4.53	6.81	37.73	12.0
				0.172	4.4	4.37	…	4.97	7.44	37.73	12.0
				0.188	4.8	4.78	…	5.40	8.07	37.73	12.0
				0.203	5.2	5.16	40	5.80	8.69	39.37	12.0
				0.216	5.5	5.49	…	6.14	9.16	39.37	12.0
				0.250	6.4	6.35	…	7.02	10.51	39.37	12.0
				0.276	7.0	7.01	80	7.67	11.39	39.37	12.0
3 1/2	3	3.500	88.9	0.125	3.2	3.18	…	4.51	6.76	39.37	12.0
				0.141	3.6	3.58	…	5.06	7.57	39.37	12.0
				0.156	4.0	3.96	…	5.58	8.37	39.37	12.0
				0.172	4.4	4.37	…	6.12	9.17	39.37	12.0
				0.188	4.8	4.78	…	6.66	9.95	39.37	12.0
				0.216	5.5	5.49	40	7.58	11.31	41.01	12.5
				0.250	6.4	6.35	…	8.69	13.02	41.01	12.5
				0.281	7.1	7.14	…	9.67	14.32	41.01	12.5
				0.300	7.6	7.62	80	10.26	15.24	41.01	12.5
4	3 1/2	4.000	101.6	0.141	3.6	3.58	…	5.82	8.70	37.73	11.5
				0.156	4.0	3.96	…	6.41	9.63	39.37	12.0
				0.172	4.4	4.37	…	7.04	10.55	39.37	12.0
				0.188	4.8	4.78	…	7.66	11.46	39.37	12.0
				0.226	5.7	5.74	40	9.12	13.48	39.37	12.0
				0.250	6.4	6.35	…	10.02	15.02	39.37	12.0
				0.281	7.1	7.14	…	11.17	16.55	39.37	12.0
				0.318	8.1	8.08	80	12.52	18.68	39.37	12.0

Line Pipe according to API Spec 5L (43th edition, 2004)
Dimensional range, weight, grade (continuation)

Nominal size	Size NPS (ASTM)	Outside diameter		Wall thickness			Schedule No. (equivalent ASTM)	Weight of plain-end tube		Max. production length	
in	in	in	mm	in	mm	mm (ASTM)		lb/ft	kg/m	ft	m
4 1/2	4	4.500	114.3	0.141	3.6	3.58	…	6.57	9.83	37.73	11.5
				0.156	4.0	3.96	…	7.24	10.88	37.73	11.5
				0.172	4.4	4.37	…	7.96	11.92	37.73	11.5
				0.188	4.8	4.78	…	8.67	12.96	37.73	11.5
				0.203	5.2	5.16	…	9.32	13.99	37.73	11.5
				0.219	5.6	5.56	…	10.02	15.01	39.37	12.0
				0.237	6.0	6.02	40	10.80	16.02	41.01	12.5
				0.250	6.4	6.35	…	11.36	17.03	41.01	12.5
				0.281	7.1	7.14	…	12.67	18.77	41.01	12.5
				0.312	7.9	7.92	…	13.97	20.73	41.01	12.5
				0.337	8.6	8.56	80	15.00	22.42	41.01	12.5
				0.438	11.1	11.13	120	19.02	28.25	41.01	12.5
5 9/16	5	5.563	141.3	0.156	4.0	3.96	…	9.02	13.54	36.08	11.0
				0.188	4.8	4.78	…	10.80	16.16	39.37	12.0
				0.219	5.6	5.56	…	12.51	18.74	39.37	12.0
				0.258	6.6	6.55	40	14.63	21.92	39.37	12.0
				0.281	7.1	7.14	…	15.87	23.50	39.37	12.0
				0.312	7.9	7.92	…	17.51	25.99	37.73	12.0
				0.344	8.7	8.74	…	19.19	28.45	37.73	12.0
				0.375	9.5	9.52	80	20.80	30.88	36.08	12.0
				0.500	12.7	12.70	120	27.06	40.28	36.09	11.0
6 5/8	6	6.63	168.32	0.188	4.8	4.78	…	12.94	19.35	39.37	12.0
				0.203	5.2	5.16	…	13.94	20.91	39.37	12.0
				0.219	5.6	5.56	…	15.00	22.47	39.37	12.0
				0.250	6.4	6.35	…	17.04	25.55	39.37	12.0
				0.280	7.1	7.11	40	18.99	28.22	39.37	12.0
				0.312	7.9	7.92	…	21.06	31.25	39.37	12.0
				0.344	8.7	8.74	…	23.10	34.24	39.37	12.0
				0.375	9.5	9.53	…	25.05	37.20	39.37	12.0
				0.432	11.0	10.97	80	28.60	42.67	39.37	12.0
				0.500	12.7	12.70	…	32.74	48.73	39.37	12.0
				0.562	14.3	14.27	120	36.43	54.31	32.80	10.0
				0.625	15.9	–	…	40.09	59.76	29.53	9.0
				0.719	18.3	18.26	160	45.39	67.69	26.25	8.0
8 5/8	8	8.63	219.13	0.250	6.4	6.35	20	22.38	33.57	39.37	12.0
				0.277	7.0	7.04	30	24.72	36.61	39.37	12.0
				0.312	7.9	7.92	…	27.73	41.14	39.37	12.0
				0.322	8.2	8.18	40	28.58	42.65	39.37	12.0
				0.344	8.7	8.74	…	30.45	45.14	39.37	12.0
				0.375	9.5	9.53	…	33.07	49.10	39.37	12.0
				0.438	11.1	11.13	…	38.33	56.94	39.37	12.0
				0.500	12.7	12.70	80	43.43	64.64	39.37	12.0
				0.562	14.3	14.27	…	48.44	72.22	37.73	11.5
				0.625	15.9	–	…	53.45	79.67	34.45	10.5
				0.719	18.3	18.26	120	60.77	90.62	31.17	9.0
10 3/4	10	10.75	2734	0.250[1]	6.4[1]	6.35[1]	20	28.06	42.09	39.37	12.0
				0.279	7.1	7.09	…	31.23	46.57	39.37	12.0
				0.307	7.8	7.80	30	34.27	51.03	39.37	12.0
				0.344	8.7	8.74	…	38.27	56.72	39.37	12.0
				0.365	9.3	9.27	40	40.52	60.50	39.37	12.0
				0.438	11.1	11.13	…	48.28	71.72	39.37	12.0
				0.500	12.7	12.70	60	54.79	81.55	36.09	10.5
				0.562	14.3	–	…	61.21	91.26	31.17	9.0
				0.625	15.9	–	…	67.65	100.85	26.25	8.0
				0.719	18.3	18.26	100	77.10	114.99	23.95	7.0

[1] Grade X60 with wall thickness 4.8 mm - 14.3 mm only
[2] Grade X60 with wall thickness 6.4 mm - 14.3 mm only
[3] Grade X60 with wall thickness 7.1 mm - 14.3 mm only

End workmanship, threads, couplings

Casing:
Delivered with threaded ends and galvanized or phosphated couplings.
The threads are: short round, long round, buttress, and gastight connection HSC, see the relevant table in the "Type of thread" column.
H grade pipes are delivered only with a short round thread. Tubes according to API Spec 5CT, the latest edition, are delivered with long round or buttress thread. Deliveries of casing with gastight connection are subject to prior agreement.

Tubing:
Delivered with round threads and galvanized or phosphated couplings or with "Teflon" rings.
Pipe threads and couplings are protected against damage during transport and handling.
In-bulk couplings 1.9" ÷ 10 ¾" according to API Spec 5CT, latest edition.
In-bulk couplings 2 ³/₈" ÷ 10 ¾" according to HSC in all offered grades.

Pup Joints:
Delivered according to API Spec 5CT, latest edition, the quantity is subject to prior agreement.
Reducing pieces of diameters 1.9" ÷ 10 ¾ " and the type of thread are subject to prior agreement.
Pipe ends machined outside & inside in compliance with the customer's documentation - up to O.D. 5 ½" and up to 250 mm from end of tube; for tubes over 5 ½" to O.D. 10 ¾" up to 400 mm from end of tube.

Drill pipe:
Delivered with upset ends and weld-on tool joints. The dimensions and type of weld-on tool joints are subject to prior agreement with the producer and the specification shall be included in the purchase order.
Any other type of end workmanship is subject to prior agreement with the producer.

Line Pipe:
Delivered with plain ends. External and internal end edges are de-burred. Pipes of outside diameter up to ø 1.9" (ø 48.3 mm) are delivered with ends cut off perpendicularly to the pipe axis. Pipes of outside diameter ø 2 ³/₈" (ø 60.3 mm) and above are delivered with either perpendicularly cut off ends or ends bevelled at an angle of 30° +5° -0° (API Spec 5L + ASTM A 106 bevel) or bevelled in conformity to other standards (ASME B16.25) .

Lengths

Casing:

Range 2	25 – 34 ft	7.62 – 10.36 m
Range 3	34 ft and above	10.36 m and above

Tubing:

Range 1	20 – 24 (28) ft	6.10 – 7.32 (8.53) m
Range 2	28 – 32 ft	8.53 – 9.75 m
Range 3	38 – 42 ft	11.58 – 12.80 m

Drill pipe:

Range 12	18 – 22 ft	5.49 – 6.70 m
Range 2	27 – 30 ft	8.23 – 9.14 m

Line pipe[3] :

ø < 60.3 mm:

A) "nominal length" 6 m (20 ft)	5.0 – 6.86 m, with average length - delivery min. 5.23 m
B) other lengths subject to agreement	

ø ≥ 60.3 mm:

A) "nominal length" 6 m (20 ft)	6.0 – 12.5 m, with average length - delivery min. 10.67 m
B) "nominal length" 12 m (40 ft)	
C) other lengths subject to agreement	

Surface protection
Unless stated otherwise in the purchase order, pipes are delivered with external short-term anticorrosive surface protection. Subject to agreement, the pipes can also be provided with the PE coating acc. to DIN 30670:1991 (ø ≥ 60.3 mm in lengths > 8 m, ø ≥ 168.3 mm in lengths > 6 m).

Bundling
Subject to agreement, the pipes can also be delivered in hexagonal bundles.

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[1] Subject to agreement with 15/T
[2] Ordering of the tubes is subject to prior agreement.
[3] The whole size range of the Line Pipe can be delivered in exact lengths - tolerance min. +100/-0 mm (±50 mm).

Spiral weld pipes

Dimensional standards

EN 10220:2002	"Seamless and welded steel tubes - General tables of dimensions and masses per unit length"
ISO 4200:1989	"Plain-end steel tubes, welded and seamless"
CSN 42 5738:1979	"Spiral weld steel pipes"
DIN 2458:1981	"Welded steel tubes"
EN 10219-2:1997	"Cold formed welded structural hollow sections of non-alloy and fine grain steels"
API Spec 5L:2004	"Specification for Line Pipe"
GOST 8696:1974	"Electrically welded steel pipes with spiral seam"
PN 79/H-74244:1979	"Welded steel pipes for transportation of media".

Technical delivery regulations

CSN 42 0144:1979	"Spiral weld steel"
DIN 1615:1984	"Welded circular tubes of non-alloy steels without special quality requirements"
DIN 1626:1984	"Welded circular tubes of non-alloy steels with special quality requirements"
CSN EN 10208-1:2000	"Steel tubes for pipeline for combustible liquids" - part 1: Requirements according to class A
CSN EN 10208-2:1999	"Steel tubes for pipeline for combustible liquids" - part 2: Requirements according to class B
DIN 17120:1984	"Welded circular tubes of non-alloy steels for steel constructions"
DIN 17172:1978	"Steel tubes for pipeline for transport of combustible liquids and gases"
DIN 1628:1984	"Welded circular tubes of non-alloy steels with very high quality requirements"
CSN EN 10217-1:2003/A1:2005	"Welded steel pipes for pressure purposes"
CSN EN 10217-5:2005/A1:2005	"Submerged arc welded non-alloy and alloy steel tubes with specified elevated temperature properties"
EN 10219-1:1997	"Cold formed welded structural hollow sections of non-alloy and fine grain steels"
API Spec 5L:2004	"Specification for Line Pipe"
GOST 8696:1974	"Electrically welded steel pipes with spiral seam"
PN 79/H-74244:1979	"Welded steel pipes for transportation of media"

Dimensional range, weight according to EN 10220:2002, (ISO 4200:1989), EN 10208:1996

Outside diameter mm	Wall thickness (mm)									
	5	5.4	5.6	6.3	7.1	8	8.8	10	11 [1]	12.5[1,2]
	Weight (kg/m)									
323.9	39.3	42.4	44.0	49.3	55.5	62.3				
355.6	43.2	46.6	48.3	54.3	61.0	68.4				
406.4	49.5	53.4	55.4	62.2	69.9	78.6	86.3	97.8	107	121
457	55.7	60.1	62.3	70.0	78.8	88.6	97.3	110	121	137
508	62.0	66.9	69.4	77.9	87.7	98.6	108	123	135	153
(559)		73.7	76.4	85.9	94.6	109	119	135	149	169
610				93.8	106	119	130	148	162	184
(660)					114	129	141	160	176	200
711					123	139	152	173	190	215
762						149	163	185	204	231
813							175	198	218	247

[1] Ordering is subject to prior agreement
[2] The size is not normalized

Dimensional range, weight according to CSN 42 5738:1979 and PN 79/H-4244:1979

Outside diameter mm	Wall thickness (mm)							
	5	6	7	8	9	10	11	12
	Weight (kg/m)							
324	40.1	48.0	55.0	63.5				
377	46.8	56.0	65.1	74.2				
426	52.9	63.3	73.7	84.0	94.3	104.5	114.7	124.8
530	65.9	79.0	92.1	105.0	117.8	130.7	143.5	156.2
630		94.1	109.6	125.1	140.5	155.8	171.1	186.4
720			125.4	143.1	160.8	178.4	196.0	213.5
820					183.4	203.5	223.7	243.7

[1] Ordering is subject to prior agreement

Dimensional range, weight according to DIN 2458:1981

Outside diameter mm	Wall thickness (mm)							
	5.6	6.3	7.1	8	8.8	10	11	12.5
	Weight (kg/m)							
323.9	44.0	49.3	55.5	62.3				
355.6	48.3	54.3	61.0	68.4				
406.4	55.4	62.2	69.9	78.6	86.3	97.8	107	121
457	62.3	70.0	78.8	88.6	97.3	110	121	137
508	69.4	77.9	87.7	98.6	108	123	135	153
(559)	76.4	85.9	94.6	109	119	135	149	169
610		93.8	106	119	130	148	162	184
(660)			114	129	141	160	176	200
711			123	139	152	173	190	215
762				149	163	185	204	231
813					175	198	218	247

[1] Ordering is subject to prior agreement
Note: Subject to agreement, unnormalized diameters 368, 419.1, 462 and 521 mm are also produced.

Dimensional range, weight according to API Spec 5L (43rd edition 2004)

Outside diameter		Wall thickness (in/mm)								
		0.219/5.6	0.250/6.4	0.281/7.1	0.312/7.9	0.344/8.7	0.375/9.5	0.406/10.3	0.438/11.1 [1]	0.469/11.9 [1]
in	mm	Weight (lb.ft^{-1} / kg.m^{-1})								
12 ¾	323.9	29.31/43.96	33.38/50.11	37.42/55.47	41.45/61.56					
14	355.6	32.23/48.33	36.71/55.11	41.17/61.02	45.61/67.74					
16	406.4	36.91/55.35	42.05/63.13	47.17/69.91	52.27/77.63	50.17/85.32	54.57/92.96	67.62/100.63	72.80/108.20	
18	457	41.59/62.34	47.39/71.12	53.18/78.77	58.94/87.49	64.87/96.18	70.59/104.84	76.29/113.53	82.15/122.05	
20	508	46.27/69.38	52.73/79.16	59.18/87.70	65.60/97.43	72.21/107.12	78.60/116.78	84.96/123.41	91.51/136.01	97.83/145.58
22	559		58.07/87.21	65.18/96.63	72.27/107.36	79.56/118.06	86.61/128.73	93.63/139.37	100.86/149.97	107.85/160.55
24	610		63.41/95.26	71.18/105.56	78.93/117.30	86.91/129.00	94.62/140.68	102.31/152.32	110.22/163.93	117.86/175.40
26	660			77.18/114.31	85.60/127.04	94.26/139.73	102.63/152.39	110.98/165.02	119.57/177.62	127.88/190.19
28	711			83.19/123.24	92.26/136.97	101.61/150.67	110.64/164.34	119.65/177.98	128.93/191.58	137.90/205.15
30	762[1]				98.93/147.37	108.95/162.31	118.65/176.76	128.32/191.17	138.29/206.01	147.92/220.36
32	813[1]					116.30/173.26	126.66/188.69	136.99/204.09	147.64/219.95	157.94/235.29

[1] Ordering is subject to prior agreement

Dimensional range, weight according to GOST 8696:1974

Outside diameter mm	Wall thickness (mm)						
	6.0	7.0	8.0	9.0	10.0	11.0 [1]	12.0 [1]
	Weight (kg/m)						
325	47.91						
377	55.71						
426	63.08	73.41	83.70				
480[1]	71.18	82.87	94.51				
530	78.69	91.63	104.5	117.4			
630		109.1	124.5	139.9	155.2		
720		124.9	142.6	160.2	177.7	195.2	212.6
820				182.7	202.7	222.7	242.7

[1] Ordering is subject to prior agreement

Steel grades

CSN 42 5738:1979	11 375, 11 378, 11 425, 11 523
DIN 1615:1984 (1626, 1628)	St 33 (St 37.0, St 37.4, St 44.0, St 44.4, St 52.0, St 52.4)
CSN EN 10208-1:2000	L210GA, L235GA, L245GA, L290GA, L360GA
CSN EN 10208-2:1999	L245NB, L245MB, L290NB, L360NB, L290MB, L360MB, L415MB, L450MB, L485MB
CSN EN 10217-1:2003/A1:2005	P195TR1, P235TR1, P265TR1, P195TR2, P235TR2, P265TR2
CSN EN 10217-5:2005/A1:2005	P235GH TC1, P265GH TC1
EN 10219-1:1997	S235JRH, S275JOH, S275J2H, S355JOH, S355J2H
CSN EN 10025:1990 + appendix A1:1993	S235JR, S235JRG2, S235JRG3, S275JR, S275J2G3, S355J2G3
DIN 17120:1984	RSt 37-2, RSt 37-3, RSt 44-2, RSt 44-3, St 52-3
DIN 17172:1972	StE 290.7, StE 360.7, StE 290.7 TM, StE 320.7 TM, StE 360.7 TM, StE 385.7 TM, StE 415.7 TM, StE 445.7TM, StE 480.7TM
API Spec 5L:2000	A-PSL1, B-PSL1, B-PSL2, X42-PSL1, X42-PSL2, X46-PSL1, X46-PSL2, X52-PSL1, X52-PSL2, X56-PSL1, X56-PSL2, X60-PSL1, X60-PSL2, X65-PSL1, X65-PSL2, X70-PSL1, X70-PSL2
GOST 8696:1974	VSt 3 sp
PN 79/H-74244:1979	G235, G295, G355

Limitation of wall thickness depending on tube outside diameter, grade and test pressure:

Diameter	Minimum thickness for all grades	Maximum thickness for individual grades					
		St 37.0 L235GA	St 44.0 L245NB	St 52.0 L360MB	L415MB	L450MB	L485MB
323.9	5.6	8.00	8.00	8.00	7.10	7.10	7.10
355.6	5.6	8.00	8.00	8.00	8.00	8.00	8.00
377.0	5.6	8.00	8.00	8.00	8.00	8.00	8.00
406.4	5.6	12.50	11.00	11.00	10.00	10.00	8.80
426.0	5.6	12.50	12.50	11.00	10.00	10.00	10.00
457.0	5.6	12.50	12.50	11.00	11.00	11.00	10.00
508.0	5.6	12.50	12.50	12.50	12.50	11.00	11.00
530.0	5.6	12.50	12.50	12.50	12.50	12.50	11.00
559.0	5.6	12.50	12.50	12.50	12.50	12.50	12.50
610.0	5.6	12.50	12.50	12.50	12.50	12.50	12.50
630.0	6.3	12.50	12.50	12.50	12.50	12.50	11.0/12.5[1]
660.0	6.3	12.50	12.50	12.50	11.0/12.5[1]	11.0/12.5[1]	10.0/12.5[1]
711.0	6.3	12.50	12.50	12.50	11.0/12.5[1]	10.0/12.5[1]	8.8/12.5[1]
720.0	7.1	12.50	12.50	12.50	11.0/12.5[1]	10.0/12.5[1]	10.0/12.5[1]
762.0	8.0	12.50	12.50	12.50	11.0/12.5[1]	10.0/12.5[1]	8.8/12.5[1]
813.0	8.0	12.50	12.50	11.0/12.54	10.0/12.5[1]	8.8/12.5[1]	8.8/12.5[1]
820.0	8.0	12.50	12.50	11.0/12.5[1]	10.0/12.5[1]	8.8/12.5[1]	8.0/12.5[1]

Diameter	Minimum thickness for all grades	Maximum thickness for individual grades				
		B	X52	X60	X65	X70
323.9	5.6	7.90	7.90	7.10	7.10	7.10
355.6	5.6	7.90	7.90	7.90	7.90	7.90
406.4	5.6	11.90	11.10	10.30	9.50	9.50
457.0	5.6	12.70	11.90	11.10	11.10	10.30
508.0	5.6	12.70	12.70	11.90	11.90	11.10
559.0	5.6	12.70	12.70	12.70	12.70	11.90
610.0	5.6	12.70	12.70	12.70	12.70	12.70
660.0	6.3	12.70	12.70	12.70	12.70	11.9/12.7[1]
711.0	6.3	12.70	12.70	12.70	11.9/12.7[1]	11.1/12.7[1]
762.0	8.0	12.70	12.70	11.9/12.7[1]	10.9/12.7[1]	9.5/12.7[1]
813.0	8.0	12.70	11.9/12.7[1]	11.1/12.7[1]	9.5/12.7[1]	9.5/12.7[1]

Lengths

The pipes are delivered in lengths 8 ÷ 12.3 m for wagon transport, in lengths 8 ÷ 13.5 m for truck transport, in fixed lengths (e.g. 12 m ±500 mm or in exact lengths with tolerance of +50/-0 mm (+25/-0 mm subject to agreement).
With special requirements the min. pipe length is 6 m and max. length 18 m. Pipes of ≤ 8 m length where water pressure testing is required are manufactured in double lengths and flame-cut after the testing, i.e. one end is bevelled and the other is perpendicular.

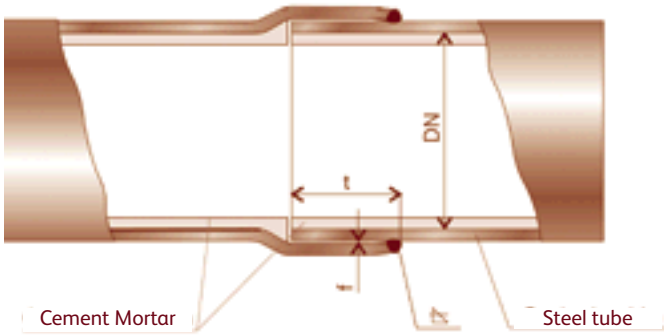
End workmanship

a) perpendicularly flame-cut ends with lengths tolerance of +50/-0 mm
b) perpendicularly cut-off end
c) bevelled ends for welding in conformity to the relevant standards (e.g. DIN 2559/22)

[1] The first number in the fraction = max. wall thickness with test pressure in accordance with the requirements by API or EN / The other number in the fraction = max. wall thickness with the maximum possible test pressure allowed by the test press if the limitation is agreed by the customer.

Socket pipes

The pipes are delivered according to DIN 2460 and provided with outside polyethylene coating according to DIN 30 670-N-n and internal protection (cement mortar) according to DIN 2614. For the joints outside surface insulation by means of e.g. a heat-shrinkable collar is sufficient, no additional internal surface treatment is required.



Steel grades

	Max. thickness
St 37.0	8,0
St 44.0	6,3

The pipes are manufactured and tested in conformity to DIN 2458/DIN 1626.

Nominal bore	Outside diameter	Wall thickness[1]	Weight per meter	Depth of overlapping t	Clearance of connection f	Nominal pipeline pressure PN (by the steel used)	
DN	(mm)	(mm)	(kg/m)	(mm)	(mm)	St 37.0	St 52.0
300	323.9	5.6	44.0	105	2	32	50
350	355.6	5.6	48.3	115	2.5	32	40
400	406.4	5.6	55.4	120	2.5	32	40
500	508	5.6	69.4	130	3	25	40
600	610	6.3	93.8	130	3	25	32
700	711	6.3	109	130	3	20	32
800	813	7.1	141	130	3	20	32

Surface protection

The pipes are delivered with a natural black surface or with the following types of the anticorrosive protection:
All combinations of the outside and inside finish including surface free of protection can be delivered

Diameter (mm)	Outside insulation	Colour modification of outside coating	Inside insulation	Length	Producer of insulation
323.9 – 820	Extruded polyethylene coating with standard and reinforced thickness (DIN 30670:1991 - N-n, N-v, S-n, S-v)[2]	black yellow[3] blue[3]		6 – 18 m	Mittal Steel Ostrava a.s.
	Concrete-plastic coating according to KN 42 0025:2003, FZM-N standard, FZM-S special (for the protection of pipes with PE coating)	natural yellow[3] blue[3]		6 – 14 m	Mittal Steel Ostrava a.s.
			Cement mortar thickness 5 - 13 mm (DIN 2614:1990 - II-N)[1]	6 – 13 m	Mittal Steel Ostrava a.s.
	Protective bitumen varnish painting, bitumen coating reinforced by 1 or 2 layers of fiberglass matt and PVC band according to KN 42 0023:1994 or CSN 42 0022:1977			6 – 18 m	Mittal Steel Ostrava a.s.
			Bitumen protective varnish ALIT or others	6 – 18 m	Mittal Steel Ostrava a.s.

[1] This type of insulation should be delivered off the winter period (i.e. approx. from 1st of April to 31st of November).
[2] Wall thickness > 12 mm by the particular O.D. is subject to agreement.
[3] Subject to agreement

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[1] For max. wall thickness see the „Limitation of wall thickness depending on tube outside diameter etc." on the previous page.

Tubular products

Traction line poles

are produced from two seamless tubes of different diameters and lengths connected by welding in conformity to technical delivery conditions:
"Traction line poles" – TP NH 129/96 or to more demanding conditions TP NH 173/99TP[1].
T – Poles are produced from materials – see the chart below.

Dimensions and weights

T – Poles diameter 168 mm see TP NH 173/99 Annex A
T – Poles diameter 219 mm see TP NH 173/99 Annex B
T – Poles diameter 245 mm see TP NH 173/99 Annex C

Strength group	Steel grades according to standards					
	CSN	DIN	EN	NFA	GOST	API + ASTM
Group 1 Re ≥ 245 MPa	11 353.0 (.1) 11 369.1 12 021.1	St 37.0 RSt 37-2, St 37-3, St 34.4 St 35.8	S235JRH L245NB	TUE 220 A TUE 235 A, B TUE 250 B	St 4 20	B Gr. 6
Group 2 Re ≥ 275 MPa	11 453.0 (.1) 12 022.1	St 44.0, St 44.4 St 44-2, St 44-3 St 45.8	S275J0H S275J2H	TUE 275 B	St 5 09G2S	H 40 X 42 X 46
Group 3 Re ≥ 355 MPa	11 523.0 (.1)	St 52.0, St 52.4 St 52-3	S355J0H S355J2H	-	-	X 52

[1] The assortment may be ordered only by prior agreement.

Technical specifications of T - pole, diameter 168 mm

Type of pole	Max. deflection [mm]	Tension at top (peak) [N]	Min. weight [kg]	Length of upper part [mm]	W.t. of upper part [mm]	Diameter of tube, upper part [mm]	Length of lower part [mm]	W.t. of lower part [mm]	Diameter of tube, lower part [mm]	Total length L [mm]
T 168/8	238[1] 259[2] 318[3]	6120[1] 6074[2] 5816[3]	250[1] 232[2] 180[3]	3 000	min. 7[1] min. 7[2] min. 5[3]	152	5 000	min. 9[1] min. 8[2] min. 6.3[3]	168	8 000
T 168/8.5	259[1] 282[2] 346[3]	5653[1] 5598[2] 5323[3]	268[1] 248[2] 192[3]	3 000	min. 7[1] min. 7[2] min. 5[3]	152	5 500	min. 9[1] min. 8[2] min. 6.3[3]	168	8 500
T 168/9	310[1] 341[2] 413[3]	5018[1] 4966[2] 4736[3]	248[1] 227[2] 180[3]	3 500	min. 6[1] min. 6[2] min. 4.5[3]	152	5 500	min. 8[1] min. 7[2] min. 5.6[3]	168	9 000
T 168/9.5	337[1] 371[2] 448[3]	4727[1] 4688[2] 4423[3]	264[1] 241[2] 191[3]	3 500	min. 6[1] min. 6[2] min. 4.5[3]	152	6 000	min. 8[1] min. 7[2] min. 5.6[3]	168	9 500
T 168/10	408[1] 439[2] 484[3]	4230[1] 4190[2] 4090[3]	238[1] 222[2] 200[3]	4 000	min. 5[1] min. 5[2] min. 4.5[3]	152	6 000	min. 7[1] min. 6.3[2] min. 5.6[3]	168	10 000
T 168/10.5	443[1] 477[2] 572[3]	4055[1] 4010[2] 3863[3]	252[1] 235[2] 195[3]	4 000	min. 5[1] min. 5[2] min. 4.5[3]	152	6 500	min. 7[1] min. 6.3[2] min. 5[3]	168	10 500
T 168/11	483[1] 518[2] 618[3]	3838[1] 3795[2] 3646[3]	262[1] 244[2] 203[3]	4 500	min. 5[1] min. 5[2] min. 4.5[3]	152	6 500	min. 7[1] min. 6.3[2] min. 5[3]	168	11 000
T 168/11.5	564[1] 607[2] 665[3]	3598[1] 3615[2] 3504[3]	248[1] 238[2] 214[3]	4 500	min. 4.5[1] min. 5[2] min. 4.5[3]	152	7 000	min. 6.3[1] min. 5.6[2] min. 5[3]	168	11 500
T 168/12	614[1] 665[2] 778[3]	3450[1] 3402[2] 3328[3]	257[1] 239[2] 208[3]	5 000	min. 4.5[1] min. 4.5[2] min. 4.5[3]	152	7 000	min. 6.3[1] min. 5.6[2] min. 4.5[3]	168	12 000
T 168/12.5	665[1] 720[2] 842[3]	3384[1] 3330[2] 3244[3]	269[1] 249[2] 217[3]	5 000	min. 4.5[1] min. 4.5[2] min. 4.5[3]	152	7 500	min. 6.3[1] min. 5.6[2] min. 4.5[3]	168	12 500
T 168/13	722[1] 765[2] 907[3]	3275[1] 3179[2] 3142[3]	278[1] 241[2] 226[3]	5 500	min. 4.5[1] min. 4.5[2] min. 4.5[3]	152	7 500	min. 6.3[1] min. 5.6[2] min. 4.5[3]	168	13 000
T 168/13.5	782[1] 912[2] 983[3]	3244[1] 3138[2] 3096[3]	290[1] 250[2] 234[3]	5 500	min. 4.5[1] min. 4.5[2] min. 4.5[3]	152	8 000	min. 6.3[1] min. 5[2] min. 4.5[3]	168	13 500
T 168/14	841[1] 986[2] 1016[3]	3261[1] 3070[2] 3031[3]	308[1] 258[2] 242[3]	6 000	min. 5[1] min. 4.5[2] min. 4.5[3]	152	8 000	min. 6.3[1] min. 5[2] min. 4.5[3]	168	14 000

[1] Tension of top is calculated for minimum sizes of tubes and value of flexural moment at stuck according to SÚ DOP Praha
[2] Strength group Re ≥ 245 MPa
[3] Strength group Re ≥ 275 MPa
[4] Strength group Re ≥ 355 Mpa

Technical specifications of T - pole, diameter 219 mm

Type of pole	Max. deflection [mm]	Tension at top (peak) [N]	Min. weight [kg]	Length of upper part [mm]	W.t. of upper part [mm]	Diameter of tube, upper part [mm]	Length of lower part [mm]	W.t. of lower part [mm]	Diameter of tube, lower part [mm]	Total length L [mm]
T 219/8	189[1] 205[2] 244[3]	12070[1] 11914[2] 11693[3]	387[1] 351[2] 290[3]	3 000	min. 9[1] min. 8[2] min. 7[3]	168	5 000	min. 11[1] min. 10[2] min. 8[3]	219	8 000
T 219/8.5	205[1] 222[2] 268[3]	11129[1] 10960[2] 10645[3]	415[1] 377[2] 303[3]	3 000	min. 9[1] min. 8[2] min. 6.3[3v]	168	5 500	min. 11[1] min. 10[2] min. 8[3]	219	8 500
T 219/9	239[1] 262[2] 317[3]	9698[1] 9518[2] 9300[3]	392[1] 353[2] 288[3]	3 500	min. 8[1] min. 7[2] min. 6.3[3]	168	5 500	min. 10[1] min. 9[2] min. 7[3]	219	9 000
T 219/9.5	278[1] 307[2] 342[3]	9043[1] 8850[2] 8689[3]	390[1] 346[2] 307[3]	3 500	min. 8[1] min. 7[2] min. 6.3[3]	168	6 000	min. 9[1] min. 8[2] min. 7[3]	219	9 500
T 219/10	304[1] 329[2] 408[3]	8076[1] 8000[2] 7610[3]	390[1] 360[2] 278[3]	4 000	min. 7[1] min. 7[2] min. 5[3]	168	6 000	min. 9[1] min. 8[2] min. 6.3[3]	219	10 000
T 219/10.5	354[1] 393[2] 437[3]	7614[1] 7437[2] 7202[3]	380[1] 338[2] 294[3]	4 000	min. 7[1] min. 6.3[2] min. 5[3]	168	6 500	min. 8[1] min. 7[2] min. 6.3[3]	219	10 500
T 219/11	387[1] 430[2] 488[3]	7153[1] 6970[2] 6646[3]	394[1] 350[2] 295[3]	4 500	min. 7[1] min. 6.3[2] min. 4.5[3]	168	6 500	min. 8[1] min. 7[2] min. 6.3[3]	219	11 000
T 219/11.5	414[1] 453[2] 511[3]	6693[1] 6600[2] 6265[3]	403[1] 367[2] 312[3]	4 500	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	7 000	min. 8[1] min. 7[2] min. 6.3[3]	219	11 500
T 219/12	484[1] 519[2] 549[3]	6176[1] 6112[2] 5819[3]	381[1] 355[2] 321[3]	5 000	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	7 000	min. 7[1] min. 6.3[2] min. 6.3[3]	219	12 000
T 219/12.5	520[1] 558[2] 586[3]	6016[1] 5946[2] 5649[3]	399[1] 373[2] 338[3]	5 000	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	7 500	min. 7[1] min. 6.3[2] min. 6.3[3]	219	12 500
T 219/13	558[1] 596[2] 631[3]	5717[1] 5649[2] 5328[3]	411[1] 385[2] 347[3]	5 500	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	7 500	min. 7[1] min. 6.3[2] min. 6.3[3]	219	13 000
T 219/13.5	598[1] 640[2] 673[3]	5622[1] 5546[2] 5221[3]	430[1] 401[2] 363[3]	5 500	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	8 000	min. 7[1] min. 6.3[2] min. 6.3[3]	219	13 500
T 219/14	643[1] 683[2] 726[3]	5409[1] 5337[2] 4987[3]	442[1] 414[2] 371[3]	6 000	min. 6.3[1] min. 6.3[2] min. 4.5[3]	168	8 000	min. 7[1] min. 6.3[2] min. 6.3[3]	219	14 000

[1] Tension of top is calculated for minimum sizes of tubes and value of flexural moment at stuck according to SÚ DOP Praha
[2] Strength group Re ≥ 245 MPa
[3] Strength group Re ≥ 275 MPa
[4] Strength group Re ≥ 355 Mpa

Technical specifications of T - pole, diameter 245 mm

Type of pole	Max. deflection [mm]	Tension at top (peak) [N]	Min. weight [kg]	Length of upper part [mm]	W.t. of upper part [mm]	Diameter of tube, upper part [mm]	Length of lower part [mm]	W.t. of lower part [mm]	Diameter of tube, lower part [mm]	Total length L [mm]
T 245/8	157[1] 172[2] 208[3]	18275[1] 18048[2] 17620[3]	551[1] 496[2] 398[3]	3 000	min. 10[1] min. 9[2] min. 7[3]	219	5 000	min. 14[1] min. 12.5[2] min. 10[3]	245	8 000
T 245/8.5	184[1] 231[2] 242[3]	16497[1] 16117[2] 15822[3]	546[1] 471[2] 396[3]	3 000	min. 10[1] min. 8[2] min. 7[3]	219	5 500	min. 12.5[1] min. 11[2] min. 9[3]	245	8 500
T 245/9	198[1] 241[2] 260[3]	14812[1] 14176[2] 14102[3]	572[1] 445[2] 414[3]	3 500	min. 10[1] min. 7[2] min. 7[3]	219	5 500	min. 12.5[1] min. 10[2] min. 9[3]	245	9 000
T 245/9.5	235[1] 258[2] 308[3]	13483[1] 13093[2] 12807[3]	542[1] 473[2] 395[3]	3 500	min. 9[1] min. 7[2] min. 6.3[3]	219	6 000	min. 11[1] min. 10[2] min. 8[3]	245	9 500
T 245/10	270[1] 303[2] 330[3]	12282[1] 11739[2] 11655[3]	531[1] 444[2] 411[3]	4 000	min. 9[1] min. 6.3[2] min. 6.3[3]	219	6 000	min. 10[1] min. 9[2] min. 8[3]	245	10 000
T 245/10.5	289[1] 322[2] 390[3]	11555[1] 10993[2] 10799[3]	560[1] 471[2] 398[3]	4 000	min. 9[1] min. 6.3[2] min. 6.3[3]	219	6 500	min. 10[1] min. 9[2] min. 7[3]	245	10 500
T 245/11	313[1] 376[2] 415[3]	10603[1] 10095[2] 10002[3]	561[1] 451[2] 414[3]	4 500	min. 8[1] min. 6.3[2] min. 6.3[3]	219	6 500	min. 10[1] min. 8[2] min. 7[3]	245	11 000
T 245/11.5	360[1] 401[2] 443[3]	10024[1] 9590[2] 9486[3]	551[1] 474[2] 435[3]	4 500	min. 8[1] min. 6.3[2] min. 6.3[3]	219	7 000	min. 9[1] min. 8[2] min. 7[3]	245	11 500
T 245/12	390[1] 428[2] 510[3]	9264[1] 9016[2] 8845[3]	547[1] 491[2] 423[3]	5 000	min. 7[1] min. 6.3[2] min. 6.3[3]	219	7 000	min. 9[1] min. 8[2] min. 6.3[3]	245	12 000
T 245/12.5	416[1] 457[2] 545[3]	8938[1] 8676[2] 8483[3]	573[1] 514[2] 442[3]	5 000	min. 7[1] min. 6.3[2] min. 6.3[3]	219	7 500	min. 9[1] min. 8[2] min. 6.3[3]	245	12 500
T 245/13	488[1] 536[2] 579[3]	8265[1] 8157[2] 8081[3]	530[1] 487[2] 458[3]	5 500	min. 6.3[1] min. 6.3[2] min. 6.3[3]	219	7 500	min. 8[1] min. 7[2] min. 6.3[3]	245	13 000
T 245/13.5	520[1] 571[2] 617[3]	8035[1] 7915[2] 7831[3]	553[1] 508[2] 476[3]	5 500	min. 6.3[1] min. 6.3[2] min. 6.3[3]	219	8 000	min. 8[1] min. 7[2] min. 6.3[3]	245	13 500
T 245/14	556[1] 609[2] 656[3]	7739[1] 7623[2] 7542[3]	570[1] 524[2] 493[3]	6 000	min. 6.3[1] min. 6.3[2] min. 6.3[3]	219	8 000	min. 8[1] min. 7[2] min. 6.3[3]	245	14 000

[1] Tension of top is calculated for minimum sizes of tubes and value of flexural moment at stuck according to SÚ DOP Praha
[2] Strength group Re ≥ 245 MPa
[3] Strength group Re ≥ 275 MPa
[4] Strength group Re ≥ 355 Mpa

Bent tubular products

Dimensions and material

Pipe bending is conducted in compliance with the customer's requirements in the following materials and size range:

Pipe diameter:	ø 22 mm ÷ ø 127 (ø 133)[1] mm
Wall thickness:	3.5 mm ÷ 8 mm
Material:	in accordance with DIN from St 35 to St 52

[1] Only for bent radius 9 000 mm and larger.

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