

Tolerances - Excerpts from API Specifications

Pipe Specification		API 5L				API 5LU		
Outside Diameter	Pipe Body	1.900 in. and smaller 2-3/8 in. through 18 in.	+ 0.016 in. - 0.031 in. + 0.75% -0.75%			Less than 20 in. 20 in. and larger	+ 0.75% - 0.75% + 1.00% - 1.00%	
		20 in. through 36 in. Non-expanded Cold-expanded	+ 1.00% - 1.00% + 0.75% - 0.25%					
		Larger than 36 in. Non-expanded Cold-expanded*2	+ 1.00% - 1.00% + 1/4 in. - 1/8 in.					
	Pipe Ends*1	10-3/4 in. and smaller	+ 1/15 in. - 1/64 in. (measured with ring gage)			10-3/4 in. and smaller	+ 1/16 in. - 1/64 in. (measured with ring gage)	
12-3/4 in. through 20 in.		+ 3/32 in. - 1/32 in. (measured with ring gage)			12-3/4 in. through 20 in.	+ 3/32 in. - 1/32 in. (measured with ring gage)		
Larger than 20 in. (22 in. and larger)		+ 3/32 in. - 1/32 in. (measured with diameter tape)			Larger than 20 in.	+ 3/32 in. - 1/32 in. (measured with diameter tape)		
Wall Thickness		Welded Pipe: 2.875 in. OD and smaller 3-1/2 in. OD 4 in. through 18 in. OD 20 in. OD and larger	Grade A, B		X42 through X70		Welded Pipe: 18 in. OD and smaller 20 in. OD and larger	+ 15.0% - 12.5% + 19.5% - 8.0%
			+ 20.0% - 12.5%		+ 15.0% - 12.5%			
			+ 18.0% - 12.5%		+ 15.0% - 12.5%			
			+ 15.0% - 12.5%		+ 15.0% - 12.5%			
		Seamless Pipe: 2.875 in. OD and smaller 3-1/2 in. OD 4 in. through 18 in. OD 29 in. OD and larger	Grade A, B		X42 through X70		Seamless Pipe: 18 in. OD and smaller 20 in. OD and larger	+ 15.0% - 12.5% + 17.5% - 10.0%
			+ 20.0% - 12.5%		+ 15.0% - 12.5%			
			+ 18.0% - 12.5%		+ 15.0% - 12.5%			
			+ 15.0% - 12.5%		+ 15.0% - 12.5%			
Weight	Single Length	Standard Weight	+ 10.0% - 3.5%			Regular Weight	+ 10.0% - 3.5%	
		Regular Weight						
		Extra Strong Weight						
	Double Extra Strong Weight							
Special Plain End Weight	+ 10.0% - 5.0%			Special Light Weight	+ 10.0% - 5.0%			
	Carload Lots	- 1.75%				- 1.75%		
Straightness		For pipe 4-1/2 in. OD and larger Max. 0.2%				Max. 0.2%		
Out of Roundness (for pipe larger than 20 in. OD)		Max. OD - specified OD ≤ 1% x specified OD Specified OD - min. OD ≤ 1% x specified OD				Max. OD - specified OD ≤ 1% x specified OD Specified OD - min. OD ≤ 1% x specified OD		
Pipe End Preparation		For pipe 2/38 in. OD and larger Bevel Angle 30°, 5° -0° Root Face 1/16 in. ± 1/32 in. Squareness for 10-3/4 in. OD and larger max 1/16 in.				Bevel Angle 30°, 5° -0° Root Face 1/15 in. ± 1/32 in. Squareness 10-3/4 in. OD and larger max. 1/16 in.		

Note:

*1 Pipe and tolerances are applicable 4 in. from either end.

*2 Not applicable to pipe hydrostatically tested to pressures in excess of standard test pressures.

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Tensile and Chemical Requirements (Excerpts from API Specifications, 1983 Edition)

Application	Grade		Tensile Requirements							
			Yield Strength			Tensile Strength			Elongation	
			psi	MPa	kg/mm ²	psi	MPa	kg/mm ²	% min	
			min	min	min	min	min	min		
Line Pipe	API 5L	Grade A	30,000	207	21.1	48,000	331	33.7	e = 625,000 $\frac{A^{0.2}}{U^{0.9}}$ *2	
	API 5L	Grade B	35,000	241	24.6	60,000	413	42.2		
	API 5L	Grade X42	42,000	289	29.5	60,000	413	42.2		
	API 5L	Grade X46	46,000	317	32.3	63,000	434	44.3		
	API 5L	Grade X52	52,000	358	36.6	(1) 66,000 *1 (2) 72,000	(1) 455 (2) 496	46.4 50.6		
	API 5L	Grade X56 *6	56,000	386	39.2	(1) 71,000 *1 (2) 75,000	(1) 489 (2) 517	49.9 52.7		
	API 5L	Grade X60 *3 *6	60,000	413	42.2	(1) 75,000 *1 (2) 78,000	(1) 517 (2) 537	52.7 54.8		
	API 5L	Grade X65 *6 *8 *11	65,000	448	45.7	(1) 77,000 *1 (2) 80,000	(1) 530 (2) 551	54.1 56.2		
	API 5L	Grade X70 *6 *11	70,000	482	49.2	82,000	565	57.6		
	API 5LU	Grade X80	80,000	551	56.2	*4 95,000/125,000	655/862	66.8/87.8		
	API 5LU	Grade X100	100,000	689	80.3	*4 110,000/135,000	758/931	77.3/94.9		

*1 (1) Wall thickness > 0.375 in., OD ≥ 20 in.

Any wall thickness, OD < 20 in.

(2) Wall thickness ≤ 0.375 in., OD ≥ 20 in.

*2 The minimum elongation in 2 in. (50.8mm) shall be determined by the following formula:

$$e = 625,000 \frac{A^{0.2}}{U^{0.9}}$$

where:

e = minimum elongation in 2 in. (50.8mm) in percent rounded to the nearest 1/2 %.

A = cross sectional area of the tensile test specimen in square inches, based on specified outside diameter or nominal specimen width and specified wall thickness rounded to the nearest 0.01 sq. in., or 0.75 sq. in., whichever is smaller.

U = specified tensile strength, psi

*3 The minimum tensile strength for grade X60 electric-resistance welded pipe in all sizes and wall thickness shall be 75,000 psi (52.7 kg/mm²).

*4 Tensile strength means min. value/max. value

*5 Figures in parentheses are values for seamless pipe. Upper line value means non-expanded. Lowerline value means cold-expanded.

In grades X42 through X65, for each reduction of 0.01% below the maximum carbon content, an increase of 0.05% manganese above the specified maximum is permissible, up to a maximum of 1.45% for X52 and lower and up to a maximum of 1.60% for grades higher than X52.

*6 Other chemical analyses may be furnished by agreement between purchaser and manufacturer.

*7 Either columbium, vanadium, titanium, or a combination thereof, shall be used at the discretion of the manufacturer.

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Chemical Requirements for Ladle Analyses, %							
C ^{*5}	Si	Mn ^{*5}	P	S	Cb	V	Ti
max	max	max	max	max	min	min	min
0.21 (0.22)		0.90	0.04	0.05			
0.26 (0.27)		1.15	0.04	0.05			
0.28 (0.29) ^{*13}		1.25	0.04	0.05			
0.30 (0.31) 0.28 (0.29) ^{*13}		1.35 1.25	0.04	0.05			
0.30 (0.31) 0.28 (0.29) ^{*13}		1.35 1.25	0.04	0.05			
0.26		1.35	0.04	0.05	0.005 ^{*7}	0.02 ^{*7}	0.03 ^{*7}
0.26		1.35	0.04	0.05	0.005 ^{*7}	0.02 ^{*7}	0.03 ^{*7}
0.26		1.40	0.04	0.05	0.005 ^{*9}	0.02 ^{*9}	
0.23 ^{*10}		1.60 ^{*10}	0.04	0.05			
0.26 ^{*12}	0.35	1.40 ^{*12}	0.04	0.05			
0.26 ^{*12}	0.35	1.40 ^{*12}	0.04	0.05			

*8 For grades X65 in. sizes 16 in. and larger with wall thickness 0.500 in. and less, the chemical composition shall be as shown or as agreed upon between the purchaser and manufacturer. For other sizes and wall thickness, the chemical composition shall be as agreed upon between the purchaser and manufacturer. (Applicable to welded pipe only.)

*9 Either columbium or vanadium or a combination of both shall be used at the discretion of the manufacturer.

*10 For each reduction of 0.01% below the specified maximum carbon content, an increase of 0.05% manganese above the specified maximum is permissible.

*11 For seamless pipe of grades X65 and X70, the chemical composition shall be agreed upon between the purchaser and manufacturer.

*12 For each reduction of 0.01% below the specified maximum carbon content, an increase of 0.05% manganese above the specified maximum is permissible, up to a maximum of 1.50%.

*13 For cold-expanded seamless pipe in size 20 in., and larger, the maximum carbon content shall be 0.28%.

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6.1 API Pipes

Tolerances - Excerpts from API Specifications

Mechanical Values					Chemical Analysis							
Material	Tensile Strength	Yield Strength	Elongation	C	Si	Mn	P	S	Mo	Cr	Ni	Div
	N/mm ²	Min.	% min.	%	%	%	% max.	% max.	%	%	%	%
A53-Grade A	min. 330	205	Variable	max. 0.25	-	max. 0.95	0.050	0.80				
A53-Grade B	min. 415	240	Variable	max. 0.30	-	max. 1.20	0.050	0.60				
A106-Grade A	min. 330	205	35	max. 0.25	min. 0.10	0.27-0.93	0.048	0.058				
A106-Grade B	min. 415	240	30	max. 0.30	min. 0.10	0.29-1.06	0.048	0.058				
A179	Hardness Rb. Max. 72			0.06-0.18	-	0.27-0.63	0.048	0.058				
A-333-Grade 1	min. 379	207	35	max. 0.30	-	0.40-1.06	0.050	0.60				
A333-Grade 6	min. 414	241	30	max. 0.30	min. 0.10	0.29-1.06	0.048	0.058				
A333-Grade 3	min. 448	241	30	max. 0.19	0.18-0.37	0.31-0.64	0.050	0.050			3.18-3.82	
A335-Grade P1	min. 379	207	30	0.10-0.20	0.10-0.50	0.30-0.80	0.045	0.045	0.44-0.65			
A335-Grade P5	min. 414	207	30	max. 0.15	max. 0.50	0.30-0.60	0.030	0.030	0.44-0.55	4.00-6.00		
A335-Grade P11	min. 414	207	30	max. 0.15	0.50-1.00	0.30-0.60	0.030	0.030	0.44-0.65	1.00-1.50		
A335-Grade P12	min. 414	207	30	max. 0.15	max. 0.50	0.30-0.60	0.045	0.045	0.44-0.65	0.80-1.25		
A335-Grade P22	min. 414	207	30	max. 0.15	max. 0.50	0.30-0.60	0.030	0.030	0.87-1.13	1.90-2.60		
API-5L-Grade A	min. 331	207	Variable	max. 0.22	-	max. 0.90	0.040	0.050				
API-5L-Grade B	min. 413	241	Variable	max. 0.27	-	max. 1.15	0.040	0.050				
API-5L-Grade X42	min. 413	289	Variable	max. 0.29	-	max. 1.25	0.040	0.050				
API-5L-Grade X46	min. 434	317	Variable	max. 0.29	-	max. 1.35	0.040	0.050				
API-5L-Grade X52	min. 455	358	Variable	max. 0.31	-	max. 1.35	0.040	0.050				
API-5L-Grade X56	min. 489	386	Variable	max. 0.26	-	max. 1.35	0.040	0.050				
API-5L-Grade X60	min. 517	413	Variable	max. 0.26	-	max. 1.35	0.040	0.050				
BS3059/1-320	320-480	195	25	max. 0.16	-	min. 0.30	0.050	0.050				
BS3059/2-360	360-500	215	24	max. 0.17	max. 0.35	0.40-0.80	0.045	0.045				
BS3601-ERW320	320-440	195	25	max. 0.16	-	0.30-0.70	0.050	0.050				
BS3601-ERW360	360-480	215	24	max. 0.17	max. 0.35	0.40-0.80	0.045	0.045				
BS3602-ERW/SAW410	410-530	235	22	max. 0.21	max. 0.35	0.40-1.20	0.050	0.050				
BS3601-S360	360-480	215	24	max. 0.17	max. 0.35	0.40-0.80	0.050	0.050				
BS3601-S410	410-530	235	22	max. 0.21	max. 0.35	0.40-1.20	0.050	0.050				
BS3602/1-360	360-500	215	24	max. 0.17	max. 0.35	0.40-0.80	0.045	0.045				
BS3602/1-410	410-550	245	22	max. 0.21	max. 0.35	0.40-1.20	0.045	0.045				
BS3602/1-490Nb	490-630	340	20	max. 0.23	max. 0.35	0.80-1.50	0.045	0.045				NB 0.01-0.10
BS3602/2-410	410-550	245	24	max. 0.20	max. 0.35	0.50-1.30	0.040	0.040				
BS3603-410	410-530	235	22	max. 0.20	max. 0.35	0.60-1.20	0.045	0.045				
BS3603-503	440-590	245	16	max. 0.15	0.15-0.35	0.30-0.80	0.025	0.020			3.25-3.75	
BS3604-620	440-590	290	22	0.10-0.18	0.10-0.35	0.40-0.70	0.050	0.050	0.45-0.65	0.70-1.10		
BS3604-622	440-640	275	20	0.08-0.15	max. 0.50	0.40-0.70	0.040	0.040	0.90-1.20	2.00-2.50		
BS3604-625	450-600	170	20	max. 0.15	max. 0.50	0.30-0.60	0.040	0.040	0.45-0.65	4.00-6.00		
BS4360-50D	490-640	355	20	max. 0.20	max. 0.40	max. 1.40	0.040	0.040				Nb 0.003-0.10 V0.0003-0.1

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Technical Standards			Comparable Qualities					
Material	Specification Standard	Dimensional Standard	ASTM	API	BS	DIN	EURO Standard EU25-72	DIV
A53	A53	ANSI-B 36.10		API-5L-Gr. A	3601-320/360	St. 37.0	Fe 310	
A53	A53	ANSI-B 36.10		API-5L-Gr. B	3601-410	St. 44.0	Fe 360B / 430B	BS4360-43 B/C
A106 / A530	A106 / A530	ANSI-B 36.10		API-5L-Gr. A	3602-S360	St. 35.8		
A106 / A530	A106 / A530	ANSI-B 36.10		API-5L-Gr. B	3602-S410	St. 45.8		
A179 / A450	A179 / A450	ANSI-B 36.10			3059-320-360	St. 35.8		
A333 / A530	A333 / A530	ANSI-B 36.10			360 1HFS27LT50	TT St. 35N		
A333 / A530	A333 / A530	ANSI-B 36.10			360 3HFS503LT100	TT St. 35V		
A333 / A530	A333 / A530					10 Ni 14		
A335 / A530	A335 / A530	ANSI-B 36.10				15 Mo 3/16 Mo 5		
A335 / A530	A335 / A530	ANSI-B 36.10			3604-625	12 Cr Mo 19.5		
A335 / A530	A335 / A530	ANSI-B 36.10			3604-620-440-460	13 Cr Mo 44		
A335 / A530	A335 / A530	ANSI-B 36.10			3604-620-440-460	13 Cr Mo 44		
A335 / A530	A335 / A530	ANSI-B 36.10			3604-620-440	10 Cr Mo 910		
API-5L	API-5L	API-5L	A53 Gr. A		3601-320/360	St. 37.0	Fe 310	St. E 210.7
API-5L	API-5L	API-5L	A53 Gr. B		3601-410-4360-43 B/C	St. 44.0	Fe 360B / 430B	St. E 240.7
API-5L	API-5L	API-5L			4360-43 B/C	St. E 290.7	Fe 430B	
API-5L	API-5L	API-5L				St. E 320.7		
API-5L	API-5L	API-5L			4360-50 B/C/D	St. E 360.7	Fe 510 B/C/D	St. E 355
API-5L	API-5L	API-5L				St. E 385.7		
API-5L	API-5L	API-5L				St. E 415.7		
BS3059 Part 1	BS3059 Part 1	BS3059 Part 1	A179			St. 35.8 / St. 37.8		
BS3059 Part 2	BS3059 Part 2	BS3059 Part 2	A179			St. 35.8 / St. 37.8		
BS3601	BS3601	BS1600 / BS3600	A53 Gr. A	5L-Gr. A		St. 33	Fe 310	
BS3601	BS3601	BS1600 / BS3600	A53 Gr. B	5L-Gr. B		St. 37.0 / St. 37.2	Fe 360B / 430B	A672-B60
BS3601	BS3601	BS1600 / BS3600	A53 Gr. B	5L-Gr. B	4360-43 B/C	St. 44.0 / St. 44.3	Fe 430 B/C	A672-B65 / C65
BS3601	BS3601	BS1600 / BS3600	A106 Gr. B	5L-Gr. B		St. 37.0 / St. 37.2	Fe 430B	
BS3601	BS3601	BS1600 / BS3600	A106 Gr. B	5L-Gr. B		St. 44.0 / St. 44.3		
BS3602 PART 1	BS3602 PART 1	BS1600 / BS3600	A106 Gr. B	5L-Gr. B		St. 35.8 / St. 37.8		
BS3602 PART 1	BS3602 PART 1	BS1600 / BS3600	A106 Gr. B	5L-Gr. B		St. 45.8		
BS3602 PART 1	BS3602 PART 1	BS1600 / BS3600		5L-Gr. X52	4360-50 B/C/D	St. 52 / St. 52.3	Fe 510 B/C/D	
BS3602 PART 2	BS3602 PART 2	BS1600 / BS3600	A672 B65 / C65	5L-Gr. B	4360-43 B/C	St. E 240.7	Fe 430 B/C	
BS3603	BS3603	BS1600 / BS3600	A333 Gr. 6			TT St. 35V		
BS3603	BS3603	BS1600 / BS3600	A333 Gr. 3			10 Ni 14		
BS3604	BS3604	BS1600 / BS3600	A335 P12			13 Cr Mo 44		
BS3604	BS3604	BS1600 / BS3600	A335 P22			10 Cr Mo 910		
BS3604	BS3604	BS1600 / BS3600	A335 P5			12 Cr Mo 195		
BS4360	BS4360	BS1600	A671 CC70	5L-X52		St. 52-3	Fe 510D	St. E 555



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6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure										
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX						
Nominal Size	in.	mm	Sch No.	in.	mm				A		B		X42	X46	X52	X56	X60	X65	X70
									Std.	Alt.	Std.	Alt.							
1/8	0.405	10.3	40	0.068	1.73	0.24	0.36	-	700	-	700	-	-	-	-	-	-	-	-
			80	0.096	2.41	0.31	0.45	-	850	-	850	-	-	-	-	-	-	-	-
1/4	0.540	13.7	40	0.088	2.24	0.42	0.63	-	700	-	700	-	-	-	-	-	-	-	-
			80	0.119	3.02	0.54	0.80	-	850	-	850	-	-	-	-	-	-	-	-
3/8	0.675	17.1	40	0.091	2.31	0.57	0.85	-	700	-	700	-	-	-	-	-	-	-	-
			80	0.126	3.20	0.74	1.10	-	850	-	850	-	-	-	-	-	-	-	-
1/2	0.840	21.3	40	0.109	2.77	0.85	1.27	-	700	-	700	-	-	-	-	-	-	-	-
			80	0.147	3.73	1.09	1.62	-	850	-	850	-	-	-	-	-	-	-	-
			(XXS)	0.294	7.47	1.71	2.55	-	1000	-	1000	-	-	-	-	-	-	-	-
			40	0.113	2.87	1.13	1.68	-	700	-	700	-	-	-	-	-	-	-	-
3/4	1.050	26.7	80	0.154	3.91	1.47	2.19	-	850	-	850	-	-	-	-	-	-	-	-
			(XXS)	0.308	7.82	2.44	3.63	-	1000	-	1000	-	-	-	-	-	-	-	-
			40	0.133	3.38	1.68	2.50	0.76	700	-	700	-	-	-	-	-	-	-	-
			80	0.179	4.55	2.17	3.23	0.99	850	-	850	-	-	-	-	-	-	-	-
1	1.315	33.4	160	0.250	6.35	2.84	4.23	1.29	-	-	-	-	-	-	-	-	-	-	-
			(XXS)	0.358	9.09	3.66	5.45	1.66	1000	-	1000	-	-	-	-	-	-	-	-
			40	0.140	3.56	2.27	3.38	1.03	1200	-	1300	-	-	-	-	-	-	-	-
			80	0.191	4.85	3.00	4.47	1.36	1800	-	1900	-	-	-	-	-	-	-	-
1 1/4	1.660	42.2	160	0.250	6.35	3.76	5.60	1.71	-	-	-	-	-	-	-	-	-	-	-
			(XXS)	0.382	9.70	5.21	7.76	2.37	2200	-	2300	-	-	-	-	-	-	-	-
			40	0.145	3.68	2.72	4.05	1.23	1200	-	1300	-	-	-	-	-	-	-	-
			80	0.200	5.08	3.63	5.41	1.65	1800	-	1900	-	-	-	-	-	-	-	-
1 1/2	1.900	48.3	160	0.281	7.14	4.86	7.24	2.21	-	-	-	-	-	-	-	-	-	-	-
			(XXS)	0.400	10.16	6.41	9.55	2.91	2200	-	2300	-	-	-	-	-	-	-	-
			40	0.109	2.77	2.64	3.93	1.20	-	-	-	-	2310	2530	2860	3000	3000	3000	3000
			80	0.125	3.18	3.00	4.47	1.36	-	-	-	-	2650	2910	3000	3000	3000	3000	3000
2	2 3/8	60.3	40	0.141	3.58	3.36	5.00	1.53	-	-	-	-	2990	3000	3000	3000	3000	3000	3000
				0.154	3.91	3.65	5.44	1.66	2330	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.172	4.37	4.05	6.03	1.84	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.188	4.78	4.39	6.54	1.99	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.218	5.54	5.02	7.48	2.28	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.250	6.35	5.67	8.45	2.57	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
			80	0.271	7.14	6.28	9.35	2.85	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.344	8.74	7.46	11.11	3.39	-	-	-	-	-	-	-	-	-	-	-
				0.436	11.07	9.03	13.45	4.10	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.083	2.11	2.03	3.02	0.92	1260	-	1470	-	1760	1930	2180	2350	2520	2730	2940
				0.109	2.77	2.64	3.93	1.20	-	-	-	-	2310	2530	2860	3000	3000	3000	3000
				0.125	3.18	3.00	4.47	1.36	-	-	-	-	2650	2910	3000	3000	3000	3000	3000
2 1/2	2 7/8	73.0	40	0.141	3.58	4.12	6.14	1.87	-	-	-	-	2470	2710	3000	3000	3000	3000	3000
				0.156	3.96	4.53	6.75	2.06	1950	-	2280	-	2730	3000	3000	3000	3000	3000	3000
				0.172	4.37	4.97	7.40	2.26	2150	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.188	4.78	5.40	8.04	2.45	2350	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.203	5.16	5.79	8.62	2.63	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.216	5.49	6.13	9.13	2.78	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
			80	0.250	6.35	7.01	10.44	3.18	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.276	7.01	7.66	11.41	3.48	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.375	9.52	10.01	14.91	4.54	-	-	-	-	-	-	-	-	-	-	-
				0.552	14.02	13.69	20.39	6.22	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.083	2.11	3.03	4.51	1.38	850	-	1000	-	1200	1310	1480	1590	1710	1850	1990
				0.109	2.77	3.95	5.88	1.79	-	-	-	-	1570	1720	1940	2090	2240	2430	2620
3	3 1/2	88.9	40	0.125	3.18	4.51	6.72	2.05	1290	-	1500	-	1800	1970	2230	2400	2570	2790	3000
				0.141	3.58	5.06	7.54	2.30	-	-	-	-	2030	2220	2510	2710	2900	3000	3000
				0.156	3.96	5.57	8.30	2.53	1600	-	1870	-	2250	2460	2780	3000	3000	3000	3000
				0.172	4.37	6.11	9.10	2.77	1770	-	2060	-	2480	2710	3000	3000	3000	3000	3000
				0.188	4.78	6.65	9.91	3.02	1930	-	2260	-	2710	2970	3000	3000	3000	3000	3000
				0.216	5.49	7.58	11.29	3.44	2220	-	2500	-	3000	3000	3000	3000	3000	3000	3000
			80	0.250	6.35	8.68	12.93	3.94	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.281	7.14	9.66	14.39	4.39	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.300	7.62	10.25	15.27	4.65	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
				0.438	11.13	14.32	21.33	6.50	-	-	-	-	-	-	-	-	-	-	-
				0.600	15.24	18.58	27.67	8.44	2500	-	2500	-	3000	3000	3000	3000	3000	3000	3000
3 1/2	4	101.6	40	0.083	2.11	3.47	5.17	1.58	750	-	870	-	1050	1150	1290	1390	1490	1620	1740
				0.109	2.77	4.53	6.75	2.06	980	-	1140	-	1370	1500	1700	1830	1960	2130	2290
				0.125	3.18	5.17	7.70	2.35	1120	-	1310	-	1580	1720	1950	2100	2250	2440	2630
				0.141	3.58	5.81	8.65	2.64	1270	-	1480	-	1700	1950	2200	2370	2540	2750	2960
				0.156	3.96	6.40	9.53	2.91	1400	-	1640	-	1970	2150	2430	2620	2810	3000	3000
				0.172	4.37	7.03	10.47	3.19	1550	-	1810	-	2170	2370	2680	2890	3000	3000	3000
			80	0.188	4.78	7.65	11.39	3.47	1690	-	1970	-	2370	2590	2930	3000	3000	3000	3000
				0.226	5.74	9.11	13.57	4.14	2030	-	2370	-	2850	3000	3000	3000	3000		



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure								
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX				
									A		B		X42	X46	X52	X56	
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.					
4	4 1/2	114.3	40	0.083	2.11	3.92	5.84	1.78	660	-	770	-	930	1020	1150	1240	
				0.109	2.77	5.11	7.61	2.32	870	-	1020	-	-	-	-	-	
				0.125	3.18	5.84	8.70	2.65	1000	-	1170	-	1400	1530	1730	1870	
				0.141	3.58	6.56	9.77	2.98	1130	-	1320	-	1580	1730	1960	2110	
				0.156	3.96	7.24	10.78	3.29	1250	-	1460	-	1750	1910	2160	2330	
				0.172	4.37	7.95	11.84	3.61	1380	-	1610	-	1930	2110	2390	2570	
				0.188	4.78	8.66	12.90	3.93	1500	-	1750	-	2110	2310	2610	2810	
				0.203	5.16	9.32	13.88	4.23	1620	-	1890	-	2270	2490	2810	3000	
				0.219	5.56	10.01	14.91	4.54	1750	-	2040	-	2450	2690	3000	3000	
				0.237	6.02	10.79	16.07	4.90	1900	-	2210	-	2650	2910	3000	3000	
				0.250	6.35	11.35	16.91	5.15	2000	-	2330	-	2800	3000	3000	3000	
				60	0.281	7.14	12.66	18.86	5.75	2250	-	2620	-	3000	3000	3000	3000
					0.312	7.92	13.96	20.79	6.34	2500	-	2800	-	3000	3000	3000	3000
				80	0.337	8.56	14.98	22.31	6.80	2700	-	2800	-	3000	3000	3000	3000
					0.438	11.13	19.00	28.30	8.63	2800	-	2800	-	3000	3000	3000	3000
				120	0.531	13.49	22.51	33.53	10.22	2800	-	2800	-	3000	3000	3000	3000
					0.674	17.12	27.54	41.02	12.50	2800	-	2800	-	3000	3000	3000	3000
				5	5 9/16	141.3	40	0.083	2.11	4.86	7.24	2.21	540	-	630	-	-
0.125	3.18	7.26	10.81					3.30	810	-	940	-	-	-	-	-	
0.156	3.96	9.01	13.42					4.09	1010	-	1180	-	-	-	-	-	
0.188	4.78	10.79	16.07					4.90	1220	-	1420	-	-	-	-	-	
0.219	5.56	12.50	18.62					5.68	1420	-	1650	-	-	-	-	-	
0.258	6.55	14.62	21.76					6.63	1670	-	1950	-	-	-	-	-	
0.281	7.14	15.85	23.61					7.20	1820	-	2120	-	-	-	-	-	
0.312	7.92	17.50	26.05					7.94	2020	-	2360	-	-	-	-	-	
0.344	8.74	19.17	28.55					8.70	2230	-	2600	-	-	-	-	-	
0.375	9.52	20.78	30.94					9.43	2430	-	2800	-	-	-	-	-	
60	0.500	12.70	27.03					40.26	12.27	2800	-	2800	-	-	-	-	-
	0.625	15.88	32.96					49.08	14.96	2800	-	2800	-	-	-	-	-
80	0.750	19.05	38.55					57.41	17.50	2800	-	2800	-	-	-	-	-
	0.083	2.11	5.80					8.64	2.63	450	560	530	660	790	860	980	1050
6	6 5/8	168.3	30	0.109	2.77	7.59	11.31	3.45	590	740	690	860	1040	1140	1280	1380	
				0.125	3.18	8.68	12.93	3.94	680	850	790	990	1190	1300	1470	1580	
				0.141	3.58	9.76	14.54	4.43	770	960	890	1120	1340	1470	1660	1790	
				0.156	3.96	10.78	16.06	4.89	850	1060	990	1240	1480	1620	1840	1980	
				0.173	4.37	11.85	17.65	5.38	930	1170	1090	1360	1640	1790	2030	2180	
				0.188	4.78	12.92	19.24	5.87	1020	1280	1290	1490	1790	1960	2210	2380	
				0.203	5.16	13.92	20.73	6.32	1100	1380	1390	1610	1930	2110	2390	2579	
				0.219	5.56	14.98	22.31	6.80	1190	1490	1580	1740	2080	2280	2580	2780	
				0.250	6.35	17.02	25.35	7.73	1360	1700	1790	1980	2380	2600	2940	3000	
				40	0.280	7.11	18.97	28.26	8.61	1520	1900	1980	2220	2660	2920	3000	3000
					0.312	7.92	21.04	31.34	9.55	1700	2120	2180	2470	2970	3000	3000	3000
				80	0.344	8.74	23.08	34.38	10.48	1870	2340	2380	2730	3000	3000	3000	3000
					0.375	9.52	25.03	37.28	11.36	2040	2550	2740	2800	3000	3000	3000	3000
				120	0.432	10.97	28.57	42.56	12.97	2350	2800	2800	2800	3000	3000	3000	3000
					0.500	12.70	32.71	48.72	14.85	2720	2800	2800	2800	3000	3000	3000	3000
				160	0.562	14.27	36.39	54.20	16.52	2800	2800	2800	2800	3000	3000	3000	3000
					0.625	15.88	40.05	59.65	18.18	2800	2800	2800	2800	3000	3000	3000	3000
				(XXS)	0.719	18.26	45.35	67.55	20.59	2800	2800	2800	2800	3000	3000	3000	3000
	0.864	21.95	53.16	79.18	24.13	2800	2800	2800	2800	-	-	-	-				
8	8 5/8	219.1	20	0.125	3.18	11.35	16.91	5.15	520	650	610	760	910	1000	1130	1220	
				0.156	3.96	14.11	21.02	6.41	650	810	760	950	1140	1250	1410	1520	
				0.188	4.78	16.94	25.23	7.69	780	980	920	1140	1370	1500	1700	1830	
				0.203	5.16	18.26	27.20	8.29	-	-	-	-	1480	1620	1840	2000	
				0.219	5.56	19.66	29.28	8.93	910	1140	1070	1330	1600	1750	1980	2130	
				0.250	6.35	22.36	33.31	10.15	1040	1300	1220	1520	1830	2000	2260	2430	
			30	0.277	7.04	24.70	36.79	11.21	1160	1450	1350	1690	2020	2220	2510	2700	
				0.312	7.92	27.70	41.26	12.58	1300	1630	1520	1900	2280	2500	2820	3000	
			40	0.322	8.18	28.55	42.53	12.96	1340	1680	1570	1960	2350	2580	2910	3000	
				0.344	8.74	30.42	45.31	13.81	1440	1790	1680	2090	2510	2750	3000	3000	
			60	0.375	9.52	33.04	49.21	15.00	1570	1960	1830	2280	2740	3000	3000	3000	
				0.406	10.31	35.64	53.09	16.18	-	-	-	-	-	-	-	-	
			80	0.438	11.13	38.30	57.05	17.39	1830	2290	2130	2670	3000	3000	3000	3000	
				0.500	12.70	43.39	64.63	19.70	2090	2610	2430	2800	3000	3000	3000	3000	
			100	0.562	14.27	48.40	72.09	21.97	2350	2800	2740	2800	3000	3000	3000	3000	
				0.594	15.09	50.95	75.89	23.13	-	-	-	-	-	-	-	-	
			120	0.625	15.88	53.40	79.54	24.24	2610	2800	2800	2800	3000	3000	3000	3000	
				0.719	18.26	60.71	90.43	27.56	2800	2800	2800	2800	3000	3000	3000	3000	
			140	0.812	20.62	67.76	100.93	30.76	-	-	-	-	-	-	-	-	
				0.875	22.22	72.42	107.87	32.88	2800	2800	2800	2800	-	-	-	-	
			160	0.906	23.01	74.69	111.25	33.91	-	-	-	-	-	-	-	-	



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.				
10	10 3/4	273.0	20	0.156	3.96	17.65	26.29	8.01	520	650	610	760	1040	1130	1280	1380
				0.188	4.78	21.21	31.59	9.63	630	790	730	920	1250	1370	1550	1660
				0.203	5.16	22.87	34.06	10.38	-	-	-	-	1350	1480	1670	1800
				0.219	5.56	24.63	36.69	11.18	730	920	860	1070	1450	1590	1800	1940
				0.250	6.35	28.04	41.77	12.73	840	1050	980	1220	1660	1820	2060	2210
				0.279	7.09	31.20	46.47	14.16	930	1170	1090	1360	1850	2030	2290	2470
			30	0.307	7.80	34.24	51.00	15.54	1030	1290	1200	1500	2040	2230	2520	2720
				0.344	8.74	38.23	56.94	17.36	1150	1440	1340	1680	2280	2500	2830	3000
			40	0.365	9.27	40.48	60.29	18.38	1220	1530	1430	1780	2420	2660	3000	3000
				0.438	11.13	48.24	71.85	21.90	1470	1830	1710	2140	2910	3000	3000	3000
			60	0.500	12.70	54.74	81.54	24.85	1670	2090	1950	2440	3000	3000	3000	3000
				0.562	14.27	61.15	91.08	27.76	1880	2350	2200	2740	3000	3000	3000	3000
			80	0.594	15.09	64.43	95.97	29.25	-	-	-	-	-	-	-	-
				0.625	15.88	67.58	100.66	30.68	2090	2620	2440	2800	3000	3000	3000	3000
			100	0.719	18.26	77.03	114.74	34.97	2410	2800	2800	2800	3000	3000	3000	3000
				0.812	20.62	86.18	128.37	39.13	2720	2800	2800	2800	-	-	-	-
			120	0.844	21.44	89.29	133.00	40.54	-	-	-	-	-	-	-	-
				1.000	25.40	104.13	155.10	47.28	-	-	-	-	-	-	-	-
12	12 3/4	323.8	20	0.172	4.37	23.11	34.42	10.49	490	610	570	710	960	1050	1190	1280
				0.188	4.78	25.22	37.57	11.45	530	660	620	770	1050	1150	1300	1400
				0.203	5.16	27.20	40.51	12.35	-	-	-	-	1140	1250	1410	1520
				0.219	5.56	29.31	43.66	13.31	620	770	720	900	1230	1340	1520	1640
				0.250	6.35	33.38	49.72	15.15	710	880	820	1030	1400	1530	1730	1870
				0.281	7.14	37.42	55.74	16.99	790	990	930	1160	1570	1720	1950	2100
			30	0.312	7.92	41.45	61.74	18.82	880	1100	1030	1280	1750	1910	2160	2330
				0.330	8.38	43.77	65.20	19.87	930	1160	1090	1360	1850	2020	2290	2460
			40	0.344	8.74	45.58	67.89	20.69	970	1210	1130	1420	1930	2110	2390	2570
				0.375	9.52	49.56	73.82	22.50	1060	1320	1240	1540	2100	2300	2600	2800
			60	0.406	10.31	53.52	79.72	24.30	-	-	-	-	2270	2490	2810	3000
				0.438	11.13	57.59	85.78	26.15	1240	1550	1440	1800	2450	2690	3000	3000
			80	0.500	12.70	65.42	97.44	29.70	1410	1760	1650	2060	2800	3000	3000	3000
				0.562	14.27	73.15	108.96	33.21	1590	1980	1850	2310	3000	3000	3000	3000
			100	0.625	15.88	80.93	120.55	36.74	1760	2210	2060	2570	3000	3000	3000	3000
				0.688	17.48	88.63	132.01	40.24	1940	2430	2270	2800	3000	3000	3000	3000
			120	0.750	19.05	96.12	143.17	43.64	2120	2650	2470	2800	3000	3000	3000	3000
				0.812	20.62	103.53	154.21	47.00	2290	2800	2670	2800	3000	3000	3000	3000
14	14	355.6	10	0.188	4.78	27.73	41.30	12.59	480	600	560	700	960	1050	1190	1280
				0.203	5.16	29.91	44.55	13.58	520	650	610	760	-	-	-	-
				0.210	5.33	30.93	46.07	14.04	-	-	-	-	1070	1170	1330	1430
				0.219	5.56	32.23	48.01	14.63	-	-	-	-	1120	1220	1380	1490
				0.250	6.35	36.71	54.68	16.67	640	800	750	940	1280	1400	1580	1700
				0.281	7.14	41.17	61.32	18.69	720	900	840	1050	1430	1570	1770	1910
			20	0.312	7.92	45.61	67.94	20.71	800	1000	940	1170	1590	1740	1970	2120
				0.344	8.74	50.17	74.73	22.78	880	1110	1030	1290	1750	1920	2170	2340
			30	0.375	9.52	54.57	81.28	24.77	960	1210	1120	1410	1910	2090	2370	2550
				0.406	10.31	58.94	87.79	26.76	-	-	-	-	2070	2270	2560	2760
			40	0.438	11.13	63.44	94.49	28.80	1130	1410	1310	1640	2230	2450	2770	2980
				0.469	11.91	67.78	100.96	30.77	-	-	-	-	2390	2620	2960	3000
			60	0.500	12.70	72.09	107.38	32.73	1290	1610	1500	1880	2550	2790	3000	3000
				0.562	14.27	80.66	120.14	36.62	1450	1810	1690	2110	2870	3000	3000	3000
			80	0.594	15.09	85.05	126.68	38.61	-	-	-	-	-	-	-	-
				0.625	15.88	89.28	132.98	40.53	1610	2010	1880	2340	3000	3000	3000	3000
			100	0.688	17.48	97.81	145.69	44.41	1770	2210	2060	2580	3000	3000	3000	3000
				0.750	19.05	106.13	158.08	48.18	1930	2410	2250	2800	3000	3000	3000	3000
16	16	406.4	10	0.812	20.62	114.37	170.35	51.92	2090	2610	2440	2800	3000	3000	3000	3000
				0.875	22.22	122.65	182.69	55.68	2250	2800	2520	2800	3000	3000	3000	3000
				0.938	23.83	130.85	194.90	59.41	2410	2800	2800	2800	3000	3000	3000	3000
				1.000	25.40	138.54	206.80	63.03	-	-	-	-	-	-	-	-
				0.188	4.78	31.75	47.29	14.40	420	530	490	620	840	920	1040	1120
				0.203	5.16	34.25	51.02	15.54	460	570	530	670	910	990	1120	1210
			20	0.219	5.56	36.91	54.98	16.74	490	620	570	720	980	1070	1210	1300
				0.250	6.35	42.05	62.63	19.07	560	700	660	820	1120	1220	1380	1490
			30	0.281	7.14	47.17	70.26	21.40	630	790	740	920	1250	1370	1550	1670
				0.312	7.92	52.27	77.86	23.71	700	880	820	1020	1390	1520	1720	1860
			40	0.344	8.74	57.52	85.68	26.09	770	970	900	1130	1540	1680	1900	2050
				0.375	9.52	62.58	93.21	28.39	840	1050	980	1230	1670	1830	2070	2230
			60	0.406	10.31	67.62	100.72	30.67	-	-	-	-	1810	1980	2240	2420



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.				
16	16	406.4	40	0.438	11.13	72.80	108.44	33.02	990	1230	1150	1440	1950	2140	2420	2610
				0.469	11.91	77.79	115.87	35.29	-	-	-	-	2090	2290	2590	2790
				0.500	12.70	82.77	123.29	37.54	1120	1410	1310	1640	2230	2440	2760	2980
				0.562	14.27	92.66	138.02	42.03	1260	1580	1480	1840	2510	2750	3000	3000
				0.625	15.88	102.63	152.87	46.55	1410	1760	1640	2050	2790	3000	3000	3000
			60	0.656	16.66	107.50	160.12	48.80	-	-	-	-	-	-	-	-
				0.688	17.48	112.51	167.58	51.03	1550	1940	1810	2260	3000	3000	3000	3000
				0.750	19.05	122.15	181.94	55.41	1690	2110	1970	2460	3000	3000	3000	3000
				0.812	20.62	131.71	196.18	59.74	1830	2280	2130	2660	3000	3000	3000	3000
				0.844	21.44	136.61	203.48	62.02	-	-	-	-	-	-	-	-
			80	0.875	22.22	141.34	210.53	64.11	1970	2460	2300	2800	3000	3000	3000	3000
				0.938	23.83	150.89	224.75	68.44	2110	2640	2460	2800	3000	3000	3000	3000
				1.000	25.40	160.20	238.62	72.67	2250	2800	2620	2800	3000	3000	3000	3000
				1.062	26.97	169.43	252.37	76.85	2390	2800	2790	2800	3000	3000	3000	3000
				1.125	28.58	178.72	266.20	81.07	2530	2800	2800	2800	3000	3000	3000	3000
18	18	457.2	10	0.188	4.78	35.76	53.26	16.22	380	470	440	550	750	820	920	990
				0.219	5.56	41.59	61.95	18.87	440	550	510	640	870	950	1080	1160
				0.250	6.35	47.39	70.59	21.50	500	620	580	730	990	1090	1230	1320
				0.281	7.14	53.18	79.21	24.12	560	700	660	820	1110	1220	1380	1490
				0.312	7.92	58.94	87.79	26.74	620	780	730	910	1240	1360	1530	1650
			20	0.344	8.74	64.87	96.62	29.43	690	860	800	1000	1360	1490	1690	1820
				0.375	9.52	70.59	105.14	32.02	750	940	880	1090	1490	1630	1840	1980
				0.406	10.31	76.29	113.63	34.61	-	-	-	-	1610	1760	1990	2150
				0.438	11.13	82.15	122.36	37.26	880	1100	1020	1280	1740	1900	2150	2320
				0.469	11.91	87.81	130.79	39.83	-	-	-	-	1860	2040	2300	2480
			30	0.500	12.70	93.45	139.19	42.39	1000	1250	1170	1460	1980	2170	2460	2640
				0.562	14.27	104.67	155.91	47.48	1120	1400	1310	1640	2230	2440	2760	2970
				0.625	15.88	115.98	172.75	52.61	1250	1560	1460	1820	2480	2720	3000	3000
				0.688	17.48	127.21	189.48	57.70	1380	1720	1610	2010	2730	2990	3000	3000
				0.750	19.05	138.17	205.80	62.67	1500	1880	1750	2190	2980	3000	3000	3000
			40	0.812	20.62	149.06	222.02	67.61	1620	2030	1890	2370	3000	3000	3000	3000
				0.875	22.22	160.03	238.36	72.59	1750	2190	2040	2550	3000	3000	3000	3000
				0.938	23.83	170.92	254.59	77.53	1880	2340	2190	2740	3000	3000	3000	3000
				1.000	25.40	181.56	270.43	82.36	2000	2500	2330	2800	3000	3000	3000	3000
				1.062	26.97	192.11	286.15	87.14	2120	2660	2480	2800	3000	3000	3000	3000
			60	1.125	28.58	202.75	302.00	91.97	2250	2800	2620	2800	3000	3000	3000	3000
				1.187	30.15	213.14	317.47	96.68	2370	2800	2770	2800	-	-	-	-
				1.188	30.18	213.31	317.73	96.76	-	-	-	-	3000	3000	3000	3000
				1.250	31.75	223.61	333.07	101.43	2500	2800	2800	2800	3000	3000	3000	3000
				20	20	508.0	10	0.219	5.56	46.27	68.92	20.99	390	490	460	570
0.250	6.35	52.73	78.54					23.92	450	560	520	660	940	1040	1170	1260
0.281	7.14	59.18	88.15					26.84	510	630	590	740	1060	1160	1320	1420
0.312	7.92	65.60	97.71					29.76	560	700	660	820	1180	1290	1460	1570
0.344	8.74	72.21	107.56					32.75	620	770	720	900	1300	1420	1610	1730
20	0.375	9.52	78.60				117.07	35.65	680	840	790	980	1420	1550	1760	1890
	0.406	10.31	84.96				126.55	38.54	-	-	-	-	1530	1680	1900	2050
	0.438	11.13	91.51				136.30	41.51	790	990	920	1150	1660	1810	2050	2210
	0.469	11.91	97.83				154.72	44.38	-	-	-	-	1770	1940	2190	2360
	0.500	12.70	104.13				151.10	47.23	900	1120	1050	1310	1890	2070	2340	2520
30	0.562	14.27	116.67				173.78	52.92	1010	1260	1180	1480	2120	2330	2630	2750
	0.625	15.88	129.33				192.64	58.66	1120	1410	1310	1640	2360	2590	2750	2750
	0.688	17.48	141.90				211.36	64.37	1240	1550	1440	1810	2600	2750	2750	2750
	0.750	19.05	154.19				229.67	69.94	1350	1690	1580	1970	2750	2750	2750	2750
	0.812	20.62	166.40				247.85	75.48	1460	1830	1710	2130	2750	2750	2750	2750
40	0.875	22.22	179.72				266.20	81.07	1580	1970	1840	2300	2750	2750	2750	2750
	0.938	23.83	190.96				284.43	86.62	1690	2110	1970	2460	2750	2750	2750	2750
	1.000	25.40	202.92				302.25	92.04	1800	2250	2100	2620	2750	2750	2750	2750
	1.062	26.97	214.80				319.94	97.43	1910	2390	2230	2750	2750	2750	2750	2750
	1.125	28.58	226.78				337.79	102.87	2020	2530	2360	2750	2750	2750	2750	2750
60	1.187	30.15	238.50				355.25	108.18	2140	2670	2490	2750	-	-	-	-
	1.188	30.15	238.68				-	-	-	-	-	-	2750	2750	2750	2750
	1.250	31.76	250.31				372.84	113.54	2250	2760	2620	2750	2750	2750	2750	2750
	1.312	33.32	261.86				390.04	118.78	2360	2750	2750	2750	2750	2750	2750	2750
	1.375	34.92	273.51				407.39	124.06	2480	2750	2750	2750	2750	2750	2750	2750
22	22	558.8	10	0.219	5.56	50.94	75.88	23.11	360	450	420	520	750	820	930	1000
				0.250	6.35	58.07	86.50	26.34	410	510	480	600	860	940	1060	1150
				0.281	7.14	65.18	97.09	29.57	460	570	540	670	970	1060	1200	1290
				0.312	7.92	72.27	107.65	32.78	510	640	600	740	1070	1170	1330	1430
				0.344	8.74	79.56	118.50	36.09	560	700	660	820	1180	1290	1460	1580
20	0.375	9.52	6.61	129.01	39.29	610	770	720	890	1290	1410	1600	1720			



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure											
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX							
									A		B		X42	X46	X52	X56				
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.								
22	22	558.8	30	0.406	10.31	93.63	139.46	42.47	-	-	-	-	1400	1530	1730	1860				
				0.438	11.13	100.86	150.23	45.75	720	900	840	1050	1510	1650	1860	2010				
				0.469	11.91	107.85	160.64	48.92	-	-	-	-	1610	1770	2000	2150				
				0.500	12.70	114.81	171.01	52.08	820	1020	950	1190	1720	1880	2130	2290				
				0.562	14.27	128.67	191.65	58.36	920	1150	1070	1340	1930	2120	2390	2500				
				0.625	15.88	142.68	212.52	64.72	1020	1280	1190	1490	2150	2350	2500	2500				
			60	0.688	17.48	156.60	233.26	71.03	1130	1410	1310	1640	2360	2500	2500	2500				
				0.750	19.05	170.21	253.53	77.21	1230	1530	1430	1790	2500	2500	2500	2500				
				0.812	20.62	183.75	273.70	83.35	1330	1660	1550	1940	2500	2500	2500	2500				
				0.875	22.22	197.41	294.02	89.55	1430	1790	1670	2090	2500	2500	2500	2500				
				0.938	23.83	211.00	314.28	95.71	1530	1920	1790	2240	2500	2500	2500	2500				
				1.000	25.40	224.28	334.07	101.73	1640	2050	1910	2390	2500	2500	2500	2500				
			80	1.062	26.97	237.48	353.73	107.72	1740	2170	2030	2500	2500	2500	2500	2500				
				1.125	28.58	250.81	373.58	113.77	1840	2300	2150	2500	2500	2500	2500	2500				
				1.188	30.15	263.85	393.00	119.68	1940	2430	2270	2500	2500	2500	2500	2500				
				1.250	31.75	277.01	412.61	125.65	2050	2500	2390	2500	2500	2500	2500	2500				
				1.312	33.32	289.88	431.78	129.22	2150	2500	2500	2500	2500	2500	2500	2500				
				1.375	34.92	302.88	451.14	137.39	2250	2500	2500	2500	2500	2500	2500	2500				
			100	1.437	36.50	315.58	470.06	143.15	2350	2500	2500	2500	-	-	-	-				
				1.438	36.53	-	-	-	-	-	-	-	2500	2500	2500	2500				
				1.500	38.10	328.41	489.17	148.97	2450	2500	2500	2500	2500	2500	2500	2500				
24	24	609.6		10	0.250	6.35	63.41	94.45	28.76	380	470	440	550	790	860	980	1050			
					0.281	7.14	71.18	106.02	32.29	420	530	490	610	890	970	1100	1180			
			0.312		7.92	78.93	117.57	35.80	470	580	550	680	980	1080	1220	1310				
			0.344		8.74	86.91	129.45	39.42	520	640	600	750	1080	1190	1340	1440				
			20	0.375	9.52	94.62	140.94	42.92	560	700	660	820	1180	1290	1460	1580				
				0.406	10.31	102.31	152.39	46.41	-	-	-	-	1280	1400	1580	1710				
				0.438	11.13	110.22	164.17	50.00	660	820	770	960	1380	1510	1710	1840				
				0.469	11.91	117.86	175.55	53.46	-	-	-	-	1480	1620	1830	1970				
			30	0.500	12.70	125.49	186.92	56.92	750	940	880	1090	1580	1720	1950	2100				
				0.562	14.27	140.68	209.54	63.81	840	1050	980	1230	1770	1940	2190	2300				
				0.625	15.88	156.03	232.41	70.78	940	1170	1090	1370	1970	2160	2300	2300				
			40	0.688	17.48	171.29	255.14	77.70	1030	1290	1200	1500	2170	2300	2300	2300				
				0.750	19.05	186.23	277.39	84.47	1120	1410	1310	1640	2300	2300	2300	2300				
				0.812	20.62	201.09	299.52	91.21	1220	1520	1420	1780	2300	2300	2300	2300				
				0.875	22.22	216.10	321.88	98.02	1310	1640	1530	1910	2300	2300	2300	2300				
			60	0.938	23.83	231.03	344.12	104.80	1410	1760	1640	2050	2300	2300	2300	2300				
				1.000	25.40	245.64	365.88	111.42	1500	1880	1750	2190	2300	2300	2300	2300				
				1.062	26.97	260.12	387.52	118.01	1590	1990	1860	2300	2300	2300	2300	2300				
				1.125	28.58	274.84	409.37	124.65	1690	2110	1970	2300	2300	2300	2300	2300				
				1.187	30.15	289.20	430.76	131.18	1780	2230	2080	2300	-	-	-	-				
				1.188	30.18	289.44	-	-	-	-	-	-	2300	2300	2300	2300				
1.250	31.75	303.71		452.38	137.76	1880	2300	2190	2300	2300	2300	2300	2300							
1.312	33.32	317.91		473.53	144.20	1970	2300	2300	2300	2300	2300	2300	2300							
1.375	34.92	332.25		494.89	150.71	2060	2300	2300	2300	2300	2300	2300	2300							
1.437	36.50	346.28		515.78	157.07	2160	2300	2300	2300	-	-	-	-							
1.438	36.53	346.50		-	-	-	-	-	-	2300	2300	2300	2300							
1.500	38.10	360.45		536.89	163.50	2250	2300	2300	2300	2300	2300	2300	2300							
1.562	39.67	374.31		557.53	169.79	2300	2300	2300	2300	2300	2300	2300	2300							
26	26	660.4	10	0.250	6.36	68.75	102.40	31.19	350	430	400	500	730	800	900	970				
				0.281	7.14	77.18	114.96	35.01	390	490	450	570	820	890	1010	1090				
				0.312	7.92	85.60	127.50	38.83	430	540	500	630	910	990	1120	1210				
				0.344	8.74	94.26	140.40	42.76	480	600	560	690	1000	1100	1240	1330				
				0.375	9.52	102.63	152.87	46.55	520	650	610	760	1090	1100	1350	1450				
				0.406	10.31	110.98	165.30	50.34	-	-	-	-	1180	1290	1460	1570				
			20	0.438	11.13	119.57	178.10	54.24	610	760	710	880	1270	1390	1580	1700				
				0.469	11.91	127.88	190.48	58.01	-	-	-	-	1360	1490	1690	1820				
				0.500	12.70	136.17	202.83	61.77	690	870	810	1010	1450	1590	1800	1940				
				0.562	14.27	152.68	227.42	69.26	780	970	910	1130	1630	1790	2000	2000				
				0.625	15.88	169.38	252.29	76.83	870	1080	1010	1260	1820	1990	2000	2000				
				0.688	17.48	185.99	277.03	84.37	950	1190	1110	1390	2000	2000	2000	2000				
			30	0.750	19.05	202.25	301.25	91.74	1040	1300	1210	1510	2000	2000	2000	2000				
				0.812	20.62	218.43	325.35	99.08	1120	1410	1310	1640	2000	2000	2000	2000				
				0.875	22.22	234.79	349.72	106.50	1210	1510	1410	1770	2000	2000	2000	2000				
				0.938	23.83	251.07	373.97	113.89	1300	1620	1520	1890	2000	2000	2000	2000				
				1.000	25.40	267.00	397.70	121.11	1380	1730	1620	2000	2000	2000	2000	2000				
				28	28	711.2	10	0.250	6.35	74.09	110.36	33.61	320	400	370	470	680	740	840	900
								0.281	7.14	83.19	123.91	37.73	360	450	420	530	760	830	940	1010
								0.312	7.92	92.26	137.42	41.85	400	500	470	580	840	920	1040	1120



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.				
28	28	711.2	20	0.344	8.74	101.61	151.35	46.09	-	-	-	-	930	1020	1150	1240
				0.375	9.52	110.64	164.80	50.19	480	600	560	700	1010	1110	1250	1350
				0.406	10.31	119.65	178.22	54.27	-	-	-	-	1100	1200	1360	1450
				0.438	11.13	128.93	192.04	58.48	560	700	660	820	1180	1300	1460	1580
				0.469	11.91	137.90	205.40	62.55	-	-	-	-	1270	1390	1570	1690
				0.500	12.70	146.85	218.73	66.61	640	800	750	940	1350	1480	1670	1800
			30	0.562	14.27	164.69	245.31	74.70	720	900	840	1050	1520	1660	1880	2020
				0.625	15.88	182.73	272.18	82.89	800	1000	940	1170	1690	1850	2090	2250
				0.688	17.48	200.68	298.91	91.03	880	1100	1030	1290	1860	2030	2300	2480
				0.750	19.05	218.27	325.11	99.01	960	1210	1120	1410	2020	2220	2510	2700
				0.812	20.62	235.78	351.19	106.95	1040	1300	1220	1520	2190	2400	2710	2920
				0.875	22.22	253.58	377.56	114.98	1120	1410	1310	1640	2360	2590	2920	3000
				0.938	23.83	271.10	403.80	122.97	1210	1510	1410	1760	2530	2770	3000	3000
				1.000	25.40	288.36	429.51	130.80	1290	1610	1500	1880	2700	2960	3000	3000
30	30	762.0	10	0.250	6.35	79.43	118.31	36.03	300	370	350	440	630	690	780	840
				0.281	7.14	89.19	132.85	40.46	340	420	390	490	710	780	880	940
				0.312	7.92	98.93	147.36	44.87	370	470	440	550	790	860	970	1050
				0.344	8.74	108.95	162.28	49.42	-	-	-	-	870	950	1070	1160
				0.375	9.52	118.65	176.73	53.82	450	560	520	660	940	1040	1170	1260
				0.406	10.31	128.32	191.13	58.21	-	-	-	-	1020	1120	1270	1360
			20	0.438	11.13	138.29	205.98	62.73	530	660	610	770	1100	1210	1370	1470
				0.469	11.91	147.92	220.33	67.10	-	-	-	-	1180	1290	1460	1580
				0.500	12.70	157.53	234.64	71.46	600	750	700	880	1260	1380	1560	1680
				0.562	14.27	176.69	263.18	80.15	670	840	790	980	1420	1550	1750	1890
				0.625	15.88	196.08	292.06	88.94	750	940	880	1090	1580	1720	1950	2100
				0.688	17.48	215.38	320.81	97.70	830	1030	960	1200	1730	1900	2150	2310
				0.750	19.05	234.29	348.97	106.27	900	1120	1060	1310	1890	2070	2340	2520
				0.812	20.62	253.12	377.02	114.82	970	1220	1140	1420	2050	2240	2530	2730
30	0.875	22.22	272.17	405.40	123.46	1050	1310	1220	1530	2200	2420	2730	2940			
	0.938	23.83	291.14	433.65	132.06	1130	1410	1310	1640	2360	2590	2930	3000			
	1.000	25.40	309.72	461.33	140.49	1200	1500	1400	1750	2520	2760	3000	3000			
	1.062	26.97	328.22	488.88	148.88	1270	1590	1490	1860	2680	2930	3000	3000			
	1.125	28.58	346.93	516.75	157.37	1350	1690	1580	1970	2840	3000	3000	3000			
	1.188	30.18	365.56	544.60	165.82	1430	1780	1660	2080	2990	3000	3000	3000			
32	32	812.8	10	1.250	31.75	383.81	571.68	174.10	1500	1880	1750	2190	3000	3000	3000	3000
				0.250	6.35	84.77	126.26	38.45	280	350	330	410	590	650	730	790
				0.281	7.14	95.19	141.79	43.18	320	400	370	460	660	730	820	890
				0.312	7.92	105.59	157.28	47.90	350	440	410	510	740	810	910	980
				0.344	8.74	116.30	173.23	52.75	-	-	-	-	810	890	1010	1080
				0.375	9.52	126.66	188.66	57.45	420	530	490	620	890	970	1100	1180
			20	0.406	10.31	136.99	204.05	62.14	-	-	-	-	960	1050	1190	1280
				0.438	11.13	147.64	219.91	66.97	490	620	570	720	1030	1130	1280	1380
				0.469	11.91	157.94	235.25	71.64	-	-	-	-	1110	1210	1370	1480
				0.500	12.70	168.21	250.55	76.30	560	700	660	820	1180	1290	1460	1580
				0.562	14.27	188.70	281.07	85.58	530	790	740	920	1330	1450	1640	1770
				0.625	15.88	209.43	311.95	95.00	700	880	820	1030	1480	1620	1830	1970
				0.688	17.48	230.08	342.70	104.36	770	970	900	1130	1630	1780	2010	2170
				0.750	19.05	250.31	372.84	113.54	840	1050	980	1230	1770	1940	2190	2360
30	0.812	20.62	270.47	402.87	122.69	910	1140	1070	1330	1920	2100	2380	2560			
	0.875	22.22	290.86	433.24	131.93	980	1230	1150	1440	2070	2260	2560	2760			
	0.938	23.83	311.17	463.49	141.15	1060	1320	1230	1540	2220	2430	2740	2950			
	1.000	25.40	331.08	493.14	150.18	1120	1410	1310	1640	2360	2590	2920	3000			
	1.062	26.97	350.90	522.74	159.17	1190	1490	1390	1740	2510	2750	3000	3000			
	1.125	28.58	370.96	552.54	168.27	1270	1580	1480	1850	2660	2910	3000	3000			
34	34	863.6	10	1.188	30.18	390.94	582.31	177.33	1340	1670	1560	1950	2810	3000	3000	3000
				1.250	31.75	410.51	611.45	186.21	1410	1760	1640	2050	2950	3000	3000	3000
				0.250	6.35	90.11	134.22	40.87	260	330	310	390	560	610	690	740
				0.281	7.14	101.19	150.72	45.90	300	370	350	430	620	680	770	830
				0.312	7.92	112.25	167.20	50.92	330	410	390	480	690	760	860	920
				0.344	8.74	123.65	184.18	56.09	-	-	-	-	760	840	950	1020
			20	0.375	9.52	134.67	200.59	61.09	400	500	460	580	830	910	1030	1110
				0.406	10.31	145.67	216.98	66.08	-	-	-	-	900	990	1120	1200
				0.438	11.13	157.00	233.85	71.22	460	580	540	680	970	1070	1210	1300
				0.469	11.91	167.95	250.16	76.18	-	-	-	-	1040	1140	1290	1390
				0.500	12.70	178.89	266.46	81.14	530	660	620	770	1110	1220	1380	1480
				0.562	14.27	200.70	298.94	91.04	600	740	690	870	1250	1370	1550	1670
				0.625	15.88	222.78	331.83	101.05	660	830	770	970	1390	1520	1720	1850
				0.688	17.48	244.77	364.58	111.03	730	910	850	1060	1530	1680	1890	2040
30	0.750	19.05	266.32	396.70	120.81	790	990	930	1160	1670	1830	2060	2220			
	0.812	20.62	287.81	428.69	130.55	860	1070	1000	1250	1810	1980	2240	2410			

PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm	Std.	Alt.	Std.	Alt.							
				0.875	22.22	309.55	461.07	140.41	930	1160	1080	1350	1950	2130	2410	2590
				0.938	23.83	331.21	493.34	150.24	990	1240	1160	1450	2090	2280	2580	2780
				1.000	25.40	352.44	524.96	162.13	1060	1320	1240	1540	2220	2440	2750	2960
				1.062	26.97	373.59	556.46	169.46	1120	1410	1310	1650	2360	2590	2920	3000
				1.125	28.58	394.99	588.34	179.17	1190	1490	1390	1740	2500	2740	3000	3000
				1.188	30.18	416.31	620.09	188.84	1260	1570	1470	1830	2640	2890	3000	3000
				1.250	31.75	437.21	651.22	198.32	1320	1650	1540	1930	2780	3000	3000	3000
36	36	914.4	10	0.250	6.35	95.45	142.17	43.30	250	310	290	360	520	580	650	700
				0.281	7.14	107.20	159.67	48.63	280	350	330	410	590	650	730	790
				0.312	7.92	118.92	177.13	53.94	310	390	360	450	660	720	810	870
				0.344	8.74	131.00	195.12	59.42	-	-	-	-	720	790	890	960
				0.375	9.52	142.68	212.52	64.72	380	470	440	550	790	860	980	1050
				0.406	10.31	154.34	229.89	70.01	-	-	-	-	850	930	1060	1140
				0.438	11.13	166.35	247.78	75.46	440	550	510	640	920	1010	1140	1230
			20	0.469	11.91	177.97	265.09	80.73	-	-	-	-	980	1080	1220	1310
				0.500	12.70	189.57	282.36	85.99	500	620	580	730	1050	1150	1300	1400
				0.562	14.27	212.70	316.82	96.48	560	700	660	820	1180	1290	1460	1570
				0.625	15.88	236.12	351.72	107.11	620	780	730	910	1310	1440	1620	1750
			30	0.688	17.48	259.42	386.48	117.70	690	860	800	1000	1440	1580	1790	1930
				0.750	19.05	282.35	420.56	128.07	750	940	880	1090	1580	1720	1950	2100
				0.812	20.62	305.16	454.54	138.42	810	1020	950	1180	1710	1870	2110	2270
				0.875	22.22	328.24	488.91	148.89	880	1090	1020	1280	1840	2010	2280	2450
				0.938	23.83	351.25	523.19	159.33	940	1170	1090	1370	1970	2160	2440	2630
				1.000	25.40	373.80	556.78	169.56	1000	1250	1170	1460	2100	2300	2600	2800
			40	1.062	26.97	396.27	590.24	179.75	1060	1330	1240	1550	2230	2440	2760	2970
				1.125	28.68	419.02	624.13	190.07	1130	1410	1310	1640	2360	2590	2930	3000
				1.188	30.18	441.69	657.90	200.35	1190	1480	1390	1730	2490	2730	3000	3000
				1.250	31.75	463.91	690.99	210.43	1250	1560	1460	1820	2630	2870	3000	3000
0.312	7.92	125.58		187.05	56.96	300	370	340	430	620	680	770	830			
0.344	8.74	138.35		206.07	62.76	330	410	380	480	680	750	850	910			
0.375																



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.				
42	42	1066.8		0.469	11.91	208.03	309.86	94.36	400	500	470	590	840	920	1050	1130
				0.500	12.70	221.61	330.09	100.52	430	540	500	520	900	990	1110	1200
				0.562	14.27	248.72	370.47	112.82	480	600	560	700	1010	1110	1250	1350
				0.625	15.88	276.18	411.37	125.28	540	670	620	780	1120	1230	1390	1500
				0.688	17.48	303.55	452.14	137.69	590	740	690	860	1240	1360	1530	1650
				0.750	19.05	330.41	492.15	149.87	640	800	750	940	1350	1480	1670	1800
				0.812	20.62	357.19	532.03	162.02	700	870	810	1020	1460	1600	1810	1950
				0.876	22.22	384.31	572.43	174.32	750	940	880	1090	1580	1720	1950	2100
				0.938	23.83	411.35	612.71	186.59	800	1000	940	1170	1690	1850	2090	2250
				1.000	25.40	437.88	652.22	198.62	860	1070	1000	1250	1800	1970	2230	2400
				1.062	26.97	464.32	691.60	210.62	910	1140	1060	1330	1910	2090	2370	2550
				1.125	28.58	491.11	731.51	222.77	960	1210	1130	1410	2030	2220	2510	2700
				1.188	30.18	517.82	771.29	234.88	1020	1270	1190	1480	2140	2400	2650	2850
				1.250	31.75	544.01	810.30	246.76	1070	1340	1250	1560	2250	2460	2790	3000
44	44	1117.6		0.344	8.74	160.39	238.90	72.75	280	350	330	410	590	650	730	790
				0.375	9.52	174.72	260.25	79.26	310	380	360	450	640	710	800	860
				0.406	10.31	189.03	281.56	85.74	330	420	390	480	700	760	860	930
				0.438	11.31	203.78	303.53	92.43	360	450	420	520	750	820	930	1000
				0.469	11.91	218.04	324.77	98.90	380	480	450	560	810	880	1000	1070
				0.500	12.70	232.29	346.00	105.37	410	510	480	600	860	940	1060	1150
				0.562	14.27	260.72	388.34	118.26	460	570	540	670	970	1060	1200	1290
				0.625	15.88	289.53	431.25	131.33	510	640	600	750	1070	1180	1330	1430
				0.688	17.48	318.25	474.03	144.36	560	700	660	820	1180	1290	1460	1580
				0.750	19.05	346.43	516.01	157.14	610	770	720	890	1290	1410	1600	1720
				0.812	20.62	374.53	557.86	169.89	660	830	780	970	1400	1530	1730	1860
				0.875	22.22	403.00	600.27	182.80	720	890	840	1040	1500	1650	1860	2000
				0.938	23.83	431.39	642.56	195.68	770	960	900	1120	1610	1770	2000	2150
				1.000	25.40	459.24	684.04	208.31	820	1020	950	1190	1720	1880	2130	2290
				1.062	26.97	487.01	725.40	220.92	870	1090	1010	1270	1820	2000	2260	2430
				1.125	28.58	515.14	767.30	233.67	920	1150	1070	1340	1930	2120	2390	2580
				1.188	30.18	543.19	809.08	246.39	970	1210	1130	1420	2040	2240	2530	2720
				1.250	31.75	570.71	850.07	258.87	1020	1280	1190	1490	2150	2350	2660	2860
46	46	1168.4		0.344	8.74	167.74	249.85	76.09	270	340	310	390	570	620	700	750
				0.375	9.52	182.73	272.18	82.89	290	370	340	430	630	680	760	820
				0.406	10.31	197.70	294.47	89.68	320	400	370	460	670	730	830	890
				0.438	11.13	213.13	317.46	96.68	340	430	400	500	720	790	890	960
				0.469	11.91	228.06	339.70	103.45	370	460	430	540	770	840	950	1030
				0.500	12.70	242.97	361.90	110.21	390	490	460	570	820	900	1020	1100
				0.562	14.27	272.73	406.23	123.71	440	550	510	640	920	1010	1140	1230
				0.625	15.88	302.88	451.14	137.39	490	610	570	710	1030	1120	1270	1370
				0.688	17.48	332.95	495.93	151.03	540	670	630	790	1130	1240	1400	1510
				0.750	19.05	362.45	539.87	164.41	590	730	680	860	1230	1350	1530	1640
				0.812	20.62	391.88	583.71	177.76	640	790	740	930	1330	1460	1650	1780
				0.875	22.22	421.69	628.11	191.28	680	860	800	1000	1440	1580	1780	1920
				0.938	23.87	451.42	672.39	204.76	730	920	860	1070	1540	1690	1910	2060
				1.000	25.40	480.60	715.85	218.00	780	980	910	1140	1640	1800	2030	2190
				1.062	26.97	509.69	759.18	231.20	830	1040	970	1210	1750	1910	2160	2330
				1.125	28.58	539.17	803.09	244.57	880	1100	1030	1280	1850	2020	2290	2470
				1.188	30.18	568.57	846.89	257.90	930	1160	1080	1360	1950	2140	2420	2600
				1.250	31.75	597.41	889.84	270.99	980	1220	1140	1430	2050	2250	2540	2740
48	48	1219.2		0.344	8.74	175.08	260.78	79.42	260	320	300	380	540	590	670	720
				0.375	9.52	190.74	284.11	86.52	280	350	330	410	590	650	730	790
				0.406	10.31	206.37	307.39	93.61	300	380	360	440	640	700	790	850
				0.438	11.31	222.49	331.40	100.92	330	410	380	480	690	760	850	920
				0.469	11.91	238.08	354.62	107.99	350	440	410	510	740	810	910	980
				0.500	12.70	254.65	377.81	115.06	380	470	440	550	790	860	980	1050
				0.562	14.27	284.73	424.11	129.15	420	530	490	610	890	970	1100	1180
				0.625	15.88	316.23	471.02	143.44	470	590	550	680	980	1080	1220	1310
				0.688	17.48	347.64	517.81	157.69	520	640	600	750	1080	1190	1340	1440
				0.750	19.05	378.47	563.73	171.67	560	700	660	820	1180	1290	1460	1580
				0.812	20.62	409.22	609.53	185.62	610	760	710	890	1280	1400	1580	1710
				0.875	22.22	440.38	655.95	199.76	660	820	770	960	1380	1510	1710	1840
				0.938	23.87	471.46	702.24	213.85	700	880	820	1030	1480	1620	1830	1970
				1.000	25.40	501.96	747.67	227.69	750	940	880	1090	1580	1720	1950	2100
				1.062	26.97	532.38	792.98	241.49	800	1000	930	1160	1670	1830	2070	2230
				1.125	28.58	563.20	838.89	255.47	840	1050	980	1230	1770	1940	2190	2360
				1.188	30.18	593.94	884.67	269.41	890	1110	1040	1300	1870	2050	2320	2490
				1.250	31.75	624.11	929.61	283.10	940	1170	1090	1370	1970	2160	2440	2620



PIPES

6.1 API Pipes

Size						Weight			Hydrostatic Test Pressure							
Outside Diameter			Wall Thickness			lb/ft	kg/m	kg/ft	API 5L				API 5LX			
									A		B		X42	X46	X52	X56
Nominal Size	in.	mm	Sch No.	in.	mm				Std.	Alt.	Std.	Alt.				
52	52	1320.8		0.375	9.52	206.76	307.97	93.79	-	-	-	-	-	-	-	-
				0.406	10.31	223.72	333.23	101.48	-	-	-	-	-	-	-	-
				0.438	11.13	241.20	359.27	109.41	300	380	350	440	640	700	790	850
				0.469	11.91	258.11	384.45	117.08	320	410	380	470	680	750	840	910
				0.500	12.70	275.01	409.63	124.74	350	430	400	500	730	800	900	970
				0.562	14.27	308.74	459.87	140.04	390	490	450	570	820	890	1010	1090
				0.625	15.88	342.93	510.79	155.55	430	540	500	630	910	1000	1130	1210
				0.688	17.48	377.03	561.69	171.02	480	600	560	690	1000	1100	1240	1330
				0.750	19.05	410.51	611.45	186.21	520	650	610	760	1090	1190	1350	1450
				0.812	20.62	443.91	661.20	201.36	560	700	660	820	1180	1290	1460	1470
				0.875	22.22	477.76	711.62	216.71	610	760	710	880	1270	1390	1580	1700
				0.938	23.83	511.53	761.92	232.03	650	810	760	950	1360	1490	1690	1820
				1.000	25.40	544.68	811.30	247.07	690	870	810	1010	1450	1590	1800	1940
				1.062	26.97	577.75	860.56	262.07	740	920	860	1070	1540	1690	1910	2060
				1.125	28.58	611.26	910.47	277.27	780	970	910	1140	1640	1790	2030	2180
				1.188	30.18	644.69	960.27	292.43	820	1030	960	1200	1730	1890	2140	2300
				1.250	31.75	677.51	1009.15	307.32	870	1080	1010	1260	1820	1990	2250	2420
56	56	1422.4		0.375	9.52	222.78	340.77	101.05	-	-	-	-	-	-	-	-
				0.406	10.31	241.06	359.06	109.34	-	-	-	-	-	-	-	-
				0.438	11.13	259.91	387.14	117.90	280	350	330	410	590	650	730	790
				0.469	11.91	278.15	414.30	126.17	300	380	350	440	630	690	780	840
				0.500	12.70	296.37	441.44	134.43	320	400	380	470	680	740	840	900
				0.562	14.27	332.75	495.63	150.94	360	450	420	530	760	830	940	1010
				0.625	15.88	369.63	550.56	167.66	400	500	470	590	840	920	1040	1120
				0.688	17.48	406.42	605.36	184.35	440	550	520	650	930	1020	1150	1240
				0.750	19.05	442.55	659.18	200.74	480	600	560	700	1010	1110	1250	1350
				0.812	20.62	478.60	712.87	217.09	520	650	610	760	1100	1200	1360	1460
				0.875	22.22	515.14	767.30	233.67	560	700	660	820	1180	1290	1460	1570
				0.938	23.83	551.60	821.61	250.21	600	750	700	880	1270	1390	1570	1690
				1.000	25.40	587.40	874.93	266.44	640	800	750	940	1350	1480	1670	1800
				1.062	26.97	623.12	928.14	282.65	680	850	800	1000	1430	1570	1780	1910
				1.125	28.58	659.32	982.06	299.07	720	900	840	1050	1520	1660	1880	2020
				1.188	30.18	695.45	1035.87	315.46	760	950	890	1110	1600	1760	1990	2140
				1.250	31.75	730.91	1088.69	331.54	800	1000	940	1170	1690	1850	2090	2250
60	60	1524.0		0.375	9.52	238.80	355.69	108.32	-	-	-	-	-	-	-	-
				0.406	10.31	258.40	384.89	117.21	-	-	-	-	-	-	-	-
				0.438	11.13	278.62	415.00	126.38	-	-	-	-	-	-	-	-
				0.469	11.91	298.19	444.15	135.26	-	-	-	-	-	-	-	-
				0.500	12.70	317.73	473.26	144.12	300	380	350	440	639	690	780	840
				0.562	14.27	356.76	531.39	161.83	340	420	390	490	710	780	880	940
				0.625	15.88	396.33	590.33	179.78	380	470	440	550	790	860	980	1050
				0.688	17.48	435.71	649.14	197.68	410	520	480	600	870	950	1070	1160
				0.750	19.05	474.59	706.90	215.27	450	560	530	660	950	1030	1170	1260
				0.812	20.62	513.29	764.55	232.83	490	610	570	710	1020	1120	1270	1360
				0.875	22.22	552.52	822.98	250.62	530	660	610	770	1100	1210	1370	1470
				0.938	23.83	591.67	881.29	268.38	560	700	660	820	1180	1290	1460	1580
				1.000	25.40	630.12	938.56	285.82	600	750	700	880	1260	1380	1560	1680
				1.062	26.97	668.48	995.70	303.22	640	800	740	930	1340	1470	1660	1780
				0.125	28.58	707.38	1053.64	320.87	680	840	790	980	1420	1550	1760	1890
				0.188	30.18	746.20	1114.46	338.48	710	890	830	1040	1500	1650	1850	2000
				1.250	31.75	784.31	1168.23	355.76	750	940	880	1090	1580	1720	1950	2100
64	64	1625.6		0.375	9.52	254.82	379.55	115.59	-	-	-	-	-	-	-	-
				0.406	10.31	275.75	410.73	125.08	-	-	-	-	-	-	-	-
				0.438	11.13	297.33	442.87	134.87	-	-	-	-	-	-	-	-
				0.469	11.91	318.22	473.99	144.34	-	-	-	-	-	-	-	-
				0.500	12.70	339.09	505.07	153.81	280	350	330	410	590	650	730	790
				0.562	14.27	380.76	567.14	172.71	320	400	370	460	660	730	820	890
				0.625	15.88	423.03	630.10	191.89	350	440	410	510	740	810	910	980
				0.688	17.48	464.21	692.93	211.02	390	480	450	560	810	890	1010	1080
				0.750	19.05	506.63	754.63	229.81	420	530	490	620	890	970	1100	1180
				0.812	20.62	547.98	816.22	248.56	460	570	530	670	960	1050	1190	1280
				0.875	22.22	589.90	878.66	267.58	490	620	570	720	1030	1130	1280	1380
				0.938	23.87	631.74	940.98	285.56	530	660	620	770	1110	1210	1370	1480
				1.000	25.40	672.84	1002.20	305.20	560	700	660	820	1180	1290	1460	1570
				1.062	26.97	713.85	1063.28	323.80	600	750	700	870	1250	1370	1550	1670
				1.125	28.58	755.44	1125.22	342.67	630	790	740	920	1330	1460	1650	1770
				1.188	30.18	796.65	1187.06	361.50	670	840	780	970	1400	1540	1740	1870
				1.250	31.75	837.71	1247.70	379.99	700	880	820	1030	1480	1620	1830	1970

Technical Specification References - Steel Pipes

Classification	Specification	Designation of Grade	Mechanical Properties			Chemical Composition %					Bend Test (N2)		Flattening Test
			Tensile Strength Min.	Yield Strength Min.	Elongation Min.	C	Si	Mn	P	S	Bending Angle	Bending Radius	
			N/mm ²	N/mm ²	%	Max	Max	Max	Max	Max			H
Welded Steel Tubes - Light, Medium & Heavy	BS 1387 : 1985	-	320 to 460	195	20 (N3)	0.20	-	1.20	0.045	0.045	180°	6D	3/5 D
Carbon Steel Pipes for Ordinary Piping	JIS G 3452	SGP	290min.	-	(N1) Test Piece No. 11 & 12 - 30min.	-	-	-	0.040	0.040	90°	6D	2/3 D
					(N1) Test Piece No. 5 - 25min.								
ASTM Standard Welded Steel Pipes	ASTM A53	Grade A	330min.	205min.	As specified in A-53 Specification	0.25	-	0.95	0.050	0.060	90°	12D	1/3 D
		Grade B	415min.	240min.		0.30	-	1.20	0.050	0.060			
ERW Steel Tubes for Cement Lined Pipes	BS 3601	ERW 320	320 - 460	195min.	25 (N3)	0.16	-	0.30 - 0.7	0.040	0.040	-	-	As specified in BS 3601 Specification
		ERW 430	430 - 570	275min.	22 (N3)	0.21	0.35	0.4 - 1.2	0.040	0.040			
Alpine Manufacturer Standard Welded Steel Pipes	APM S 002	(A) (AA)	270min.	170min.	20 (N3)	0.20	-	1.20	0.045	0.045	90°	6D	1/3 D

Notes:

(N1) - When the tensile test is carried out on No. 12 or No. 15 test piece for the pipe under 8mm in wall thickness the minimum value of elongation shall be obtained by subtracting 1.5% from the thickness values of elongation given in Table above for each 1mm decrease in wall thickness, and rounding off to an integer in accordance with JIS Z 8401.

(N1) - The values of elongation given in Table above shall not applied to the pipe whose nominal size is 32mm or smaller

(N2) - Bend test in table above only applied to pipes of nominal size 2" (50mm) or smaller

(N3) Gauge length $L_0 = 5.65 \sqrt{S_0}$ (%)

H - Distance between the plates

D - Outside diameter of the pipe

APM S 002 - Manufacturer Standard



PIPES

6.2 Welded Steel Pipes

MS 863

BS 1387 - 1985

Class	Nominal Size		Outside Diameter		Wall Thickness	Calculated Weight						Number of Threads per Inch	Socket		Test Pressure	
			Max.	Min.		Plain Ends			Threads and Coupling				Outside Diameter	Min. Length		
	mm	in	mm	mm	mm	kg/m	kg/ft	lb/ft	kg/m	kg/ft	lb/ft		mm	mm	Bar	Psi
Light (A)	15	1/2	21.4	21.0	2.0	0.947	0.291	0.642	0.956	0.956	0.291	14	27.8	38.1	50	725
	20	3/4	26.9	26.4	2.3	1.38	0.421	0.928	1.390	0.424	0.935	14	34.1	41.3	50	725
	25	1	33.8	33.2	2.6	1.98	0.604	1.38	2.00	0.61	1.34	11	42.1	47.6	50	725
	32	1 1/4	42.5	41.9	2.6	2.54	0.774	1.71	2.57	0.78	1.73	11	51.6	54.0	50	725
	40	1 1/2	48.4	47.8	2.9	3.23	0.985	2.17	3.27	1.00	2.20	11	57.9	57.2	50	725
	50	2	60.2	59.6	2.9	4.08	1.24	2.73	4.15	1.26	2.78	11	70.6	63.5	50	725
	65	2 1/2	76.0	75.2	3.2	5.71	1.74	3.83	5.83	1.78	3.92	11	87.3	69.9	50	725
	80	3	88.7	87.9	3.2	6.72	2.05	4.52	6.89	2.10	4.63	11	101.6	76.2	50	725
	100	4	113.9	113.0	3.6	9.75	2.97	6.55	10.00	3.05	6.72	11	128.6	88.9	50	725
Medium (B)	15	1/2	21.7	21.1	2.6	1.21	0.369	0.814	1.22	0.372	0.82	14	27.8	38.1	50	725
	20	3/4	27.2	26.6	2.6	1.56	0.475	1.05	1.57	0.479	1.06	14	34.1	41.3	50	725
	25	1	34.2	33.4	3.2	2.41	0.735	1.62	2.43	0.741	1.63	11	42.1	47.6	50	725
	32	1 1/4	42.9	42.1	3.2	3.10	0.945	2.08	3.13	0.954	2.10	11	51.6	54.0	50	725
	40	1 1/2	48.8	48.0	3.2	3.57	1.09	2.40	3.61	1.10	2.43	11	57.9	57.2	50	725
	50	2	60.8	59.8	3.6	5.03	1.53	3.37	5.10	1.55	3.42	11	70.6	63.5	50	725
	65	2 1/2	76.6	75.4	3.6	6.43	1.96	4.32	6.55	2.00	4.41	11	87.3	69.9	50	725
	80	3	89.5	88.1	4.0	8.37	2.55	5.62	8.54	2.60	5.73	11	101.6	76.2	50	725
	100	4	114.9	113.3	4.5	12.20	3.72	8.2	12.50	3.81	8.40	11	128.6	88.9	50	725
	125	5	140.6	138.7	5.0	16.60	5.06	11.2	17.10	5.21	11.50	11	155.6	95.3	50	725
	150	6	166.1	164.1	5.0	19.70	6.00	13.2	20.30	6.19	13.60	11	184.2	95.3	50	725
Heavy (C)	15	1/2	21.7	21.1	3.2	1.44	0.439	0.968	1.45	0.442	0.974	14	27.8	38.1	50	725
	20	3/4	27.2	26.6	3.2	1.87	0.570	1.257	1.88	0.573	1.263	14	34.1	41.3	50	725
	25	1	34.2	33.4	4.0	2.94	0.896	1.98	2.96	0.902	1.99	11	42.1	47.6	50	725
	32	1 1/4	42.9	42.1	4.0	3.80	1.16	2.56	3.83	1.17	2.58	11	51.6	54.0	50	725
	40	1 1/2	48.8	48.0	4.0	4.38	1.34	2.95	4.42	1.35	2.98	11	57.9	57.2	50	725
	50	2	60.8	59.8	4.5	6.19	1.89	4.17	6.26	1.91	4.21	11	70.6	63.5	50	725
	65	2 1/2	76.6	75.4	4.5	7.93	2.42	5.34	8.05	2.45	5.40	11	87.3	69.9	50	725
	80	3	89.5	88.1	5.0	10.3	3.14	6.92	10.5	3.20	7.05	11	101.6	76.2	50	725
	100	4	114.9	113.3	5.4	14.5	4.42	9.71	14.8	4.51	9.94	11	128.6	88.9	50	725
	125	5	140.6	138.7	5.4	17.9	5.46	12.0	18.4	5.61	12.4	11	155.6	95.3	50	725
	150	6	166.1	164.1	5.4	21.3	6.49	14.3	21.9	6.68	14.7	11	184.2	95.3	50	725

Tolerance:

Wall Thickness: Light (A) - 8%

Medium (B) and Heavy (C) - 10%

Length: Plus 50mm or minus zero (Manufacturer Standard)

Mass: The mean consignment mass for quantities of 150mm and cover of one size shall not deviate by more than $\pm 4\%$ from the mass of consignment calculated from the mass given in the above Table as appropriate. No single tube shall deviate by more than +10%, -8% from the mass given in the above Table as appropriate.

6.2 Welded Steel Pipes

Welded Steel Pipes for General Purposes

APM S 002

Class	Nominal Size		Outside Diameter				Wall Thickness		Calculated Weight Plain Ends		
			Max.		Min.						
	mm	in	mm	in	mm	in	mm	in	kg/m	kg/ft	lb/ft
Light (A)	90	3 1/2	102.0	3.98	101.1	3.95	3.2	0.126	7.761	2.366	5.220
Extra Light (AA)	15	1/2	21.4	0.84	21.0	0.83	1.6	0.063	0.773	0.236	0.520
	20	3/4	26.9	1.06	26.4	1.04	1.6	0.063	0.990	0.302	0.666
	25	1	33.8	1.33	33.2	1.31	1.9	0.075	1.48	0.451	0.994
	32	1 1/4	42.5	1.67	41.9	1.65	1.9	0.075	1.89	0.576	1.27
	40	1 1/2	48.4	1.90	47.8	1.88	1.9	0.075	2.16	0.658	1.45
	50	2	60.2	2.30	59.6	2.35	1.9	0.075	2.72	0.829	1.83
	65	2 1/2	76.0	2.99	75.2	2.96	1.9	0.075	3.45	1.05	2.31
	80	3	88.7	3.49	87.9	3.46	2.1	0.083	4.46	1.36	3.00
	90	3 1/2	102.0	3.98	101.1	3.95	2.1	0.083	5.15	1.57	3.46
	100	4	113.9	4.48	113.0	4.45	2.3	0.091	6.31	1.92	4.23
	125	5	140.6	5.53	138.7	5.46	4.0	0.157	13.40	4.08	8.99
	150	6	166.1	6.54	164.1	6.46	4.0	0.157	15.90	4.85	10.70
	(AAA)	25	1	33.8	1.33	33.2	1.31	1.6	0.063	1.259	0.384
32		1 1/4	42.5	1.67	41.9	1.65	1.6	0.063	1.602	0.488	1.076
40		1 1/2	48.4	1.90	47.8	1.88	1.6	0.063	1.835	0.559	1.233
50		2	60.2	2.30	59.6	2.35	1.6	0.063	2.300	0.701	1.546
65		2 1/2	76.0	2.99	75.2	2.96	1.6	0.063	2.920	0.890	1.962
80		3	88.7	3.49	87.9	3.46	1.6	0.063	3.421	1.043	2.300
100		4	113.9	4.48	113.0	4.45	1.9	0.075	5.226	1.593	3.513
125		5	140.6	5.53	138.7	5.46	3.0	0.118	10.11	3.082	6.796
150		6	166.1	6.54	164.1	6.46	3.0	0.118	11.99	3.655	8.059

Thickness Tolerance: ± 10%

6.2 Welded Steel Pipes

Carbon Steel Pipes for Ordinary Piping

JIS G 3452 - SGP

Nominal Size		Outside Diameter			Wall Thickness	Calculated Weight Plain Ends		Test Pressure	
in	mm	mm	Max. mm	Min. mm	mm	kg/m	lb/ft	kg/cm	Psi
1/2	15	21.7	22.2	21.2	2.8	1.31	0.880	25	360
3/4	20	27.2	27.7	26.7	2.8	1.68	1.13	25	360
1	25	34.0	34.5	33.5	3.2	2.43	1.63	25	360
1 1/4	32	42.7	43.2	42.2	3.5	3.38	2.27	25	360
1 1/2	40	48.6	49.1	48.1	3.5	3.89	2.61	25	360
2	50	60.5	61.1	59.9	3.8	5.31	3.57	25	360
2 1/2	65	76.3	77.1	75.5	4.2	7.47	5.02	25	360
3	80	89.1	90.0	88.2	4.2	8.79	5.91	25	360
3 1/2	90	101.6	102.6	100.6	4.2	10.1	6.79	25	360
4	100	114.3	115.4	113.2	4.5	12.2	8.20	25	360
5	125	139.8	141.2	138.4	4.5	15.0	10.1	25	360
6	150	165.2	166.8	163.6	5.0	19.8	13.3	25	360
7	175	190.7	192.3	189.1	5.3	24.2	16.3	25	360
8	200	216.3	218.0	214.6	5.8	30.1	20.2	25	360
10	250	267.4	269.5	265.3	6.6	42.4	28.5	25	360
12	300	318.5	321.0	316.0	6.9	53.0	35.6	25	360
14	350	355.6	358.4	352.8	7.9	67.7	45.5	25	360
16	400	406.4	409.7	403.1	7.9	77.6	52.2	25	360
18	450	457.2	460.9	453.5	7.9	87.5	58.8	25	360

Thickness Tolerance: - 12.5%

6.3 Pipes for Cement Lining

JKR Dimension

BS 3601

Outside Diameter	Minimum Wall Thickness	Outside Diameter		Calculated Weight Plain Ends
		Maximum	Minimum	
mm	mm	mm	mm	kg/m
121.9	4.10	123.1	120.7	11.91
177.3	4.10	178.6	176.0	17.51
232.2	4.10	233.9	230.5	23.06
286.0	4.10	288.1	283.9	28.50
345.4	5.80	348.0	342.8	48.57
399.3	5.80	402.3	396.3	56.28
426.0	5.80	429.2	422.8	60.10
453.1	5.80	456.5	449.7	63.98

BS Dimension

BS 3601

Outside Diameter	Minimum Wall Thickness	Outside Diameter		Calculated Weight Plain Ends
		Maximum	Minimum	
mm	mm	mm	mm	kg/m
114.3	3.6	115.4	113.2	9.83
139.7	3.6	141.1	138.3	12.08
168.3	3.6	170.0	166.6	14.62
193.7	4.0	195.2	192.2	18.71
219.1	4.0	221.3	216.9	21.22
244.5	4.0	246.9	242.1	23.72
273.0	4.0	275.7	270.3	26.53
323.9	4.0	326.3	321.5	31.55
355.6	4.5	358.3	352.9	38.96
406.4	4.5	409.4	403.4	44.60
457.0	5.0	460.4	453.6	55.73

6.4 Carbon Steel Tubes for General Structural Purposes

JIS G 3444 - 1988 - STK 290

JIS G 3444 - 1988 - STK 500

JIS G 3444 - 1988 - STK 400

JIS G 3444 - 1988 - STK 540

Outside Diameter	Wall Thickness	Calculated Weight	Cross-Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration of Area
mm	mm	kg/mm	cm ²	cm ⁴	cm ³	cm
21.7	2.0	0.972	1.238	0.607	0.56	0.700
27.2	2.0	1.24	1.583	1.26	0.93	0.890
	2.3	1.41	1.799	1.41	1.03	0.880
34.0	2.3	1.80	2.291	2.89	1.70	1.12
42.7	2.3	2.29	2.919	5.97	2.80	1.43
	2.5	2.49	3.157	6.40	3.00	1.42
	2.8	2.76	3.510	7.02	3.29	1.41
48.6	2.3	2.63	3.345	8.99	3.70	1.64
	2.5	2.84	3.621	9.65	3.97	1.63
	2.8	3.16	4.029	10.6	4.36	1.62
	3.2	3.58	4.564	11.8	4.86	1.61
60.5	2.3	3.30	4.205	17.8	5.90	2.06
	3.2	4.52	5.760	23.7	7.84	2.03
	4.0	5.57	7.100	28.5	9.41	2.00
76.3	2.8	5.08	6.465	43.7	11.5	2.60
	3.2	5.77	7.349	49.2	12.9	2.59
	4.0	7.13	9.085	59.5	15.6	2.56
89.1	2.8	5.96	7.591	70.7	15.9	3.05
	3.2	6.78	8.636	79.8	17.9	3.04
	4.0	8.39	10.690	97.0	21.8	3.01
101.6	3.2	7.76	9.892	120	23.6	3.48
	4.0	9.63	12.26	146	28.8	3.45
	5.0	11.90	15.17	177	34.9	3.42
114.3	3.2	8.77	11.17	172	30.2	3.93
	3.6	9.83	12.52	192	33.6	3.92
	4.5	12.2	15.52	234	41.0	3.89
	5.6	15.0	19.12	283	49.6	3.85
139.9	3.6	12.1	15.40	357	51.1	4.82
	4.0	13.4	17.07	394	56.3	4.80
	4.5	15.0	19.13	438	62.7	4.79
	6.0	19.8	25.22	566	80.9	4.74
165.2	4.5	17.8	22.72	734	88.90	5.68
	5.0	19.8	25.16	808	97.8	5.67
	6.0	23.6	30.01	952	115	5.63
	7.0	27.3	34.79	1090	132	5.60

6 PIPES

6.4 Carbon Steel Tubes for General Structural Purposes

JIS G 3444 - 1988 - STK 290

JIS G 3444 - 1988 - STK 500

JIS G 3444 - 1988 - STK 400

JIS G 3444 - 1988 - STK 540

Outside Diameter	Wall Thickness	Calculated Weight	Cross-Sectional Area	Geometrical Moment of Inertia	Modulus of Section	Radius of Gyration of Area
mm	mm	kg/mm	cm ²	cm ⁴	cm ³	cm
190.7	4.5	20.7	26.32	1140	120	6.59
	5.0	22.9	29.17	1260	132	6.57
	6.0	27.3	34.82	1490	156	6.53
	7.0	31.7	40.40	1710	179	6.50
216.3	4.5	23.5	29.94	1680	155	7.49
	6.0	31.1	39.64	2190	203	7.44
	7.0	36.1	46.03	2520	233	7.40
267.4	6.0	38.7	49.27	421x10	315	9.24
	6.6	42.4	54.08	460x10	344	9.22
	7.0	45.0	57.26	486x10	363	9.21
	8.0	51.2	65.19	549x10	411	9.18
	9.0	57.3	73.06	611x10	457	9.14
	9.3	59.2	75.41	629x10	470	9.13
355.6	6.4	55.1	70.21	107x10 ²	602	12.30
	7.9	67.7	86.29	130x10 ²	734	12.30
	9.0	76.9	98.00	147x10 ²	828	12.30
	9.5	81.1	103.30	155x10 ²	871	12.20
	12.0	102.0	129.50	191x10 ²	108x10	12.20
	12.7	107.0	136.80	201x10 ²	113x10	12.10
406.4	7.9	77.6	98.90	196x10 ²	967	14.10
	9.0	88.2	112.40	222x10 ²	109x10	14.10
	9.5	93.0	118.50	233x10 ²	115x10	14.00
	12.0	117.0	148.70	289x10 ²	142x10	14.00
	12.7	123.0	157.10	305x10 ²	150x10	13.90
	16.0	154.0	196.20	374x10 ²	184x10	13.80
457.2	9.0	99.5	126.70	318x10 ²	140x10	15.80
	9.5	105.0	133.60	335x10 ²	147x10	15.80
	12.0	132.0	167.80	416x10 ²	182x10	15.70
	12.7	139.0	177.30	438x10 ²	192x10	15.70
	16.0	174.0	221.80	540x10 ²	236x10	15.60

Tolerances:

Description	Tolerance	
Thickness (t)	t < 3mm	± 0.3mm
	3mm ≤ t < 12mm	± 10%
	12mm ≥ t	+ 10%, -1.2mm
Outside Diameter (OD)	OD < 50mm	± 0.25mm
	50mm ≥ OD	± 0.5%