



Dangjin Plant

Spec	Spec. No	Specification	Code	Application	Approv. No	Approv. Date	Authority
ISO	ISO 9001	Quality Management System	ISO	ERW : 1/2" ~ 12" Hot Dip Galvanized Steel Pipe : 1/2" ~ 24" Production, Sales and Servicing	SE0 0051031	05. 10. 18 (95. 7. 15)	LRQA
API	API 5L	Line Pipe	API	Plain end	5L-0325	78. 3. 31	API
	API 5CT	Casing & Tubing		Plain end	5CT-0421		
KS	KS D 3507	Carbon Steel Pipes for Ordinary Piping	SPP	Black, Galva 10A~300A Galva 300A~600A	45	64. 12. 30	KSA
	KS D 3631	Carbon Steel Pipes for Fuel Gas Piping	SPPG	300A and smaller	99-0657	99. 6. 11	KSA
	KS C 8401	Rigid Steel Conduits	-	Thick Wall Steel Conduits (Hot Dip Galvanized Steel Conduits)	97	65. 7. 10	KSA
	KS D 3517	Carbon Steel Tubes for Machine Structural Purposes	STKM	STKM 11A, STKM 12A, STKM 12B STKM 13A, STKM 13B, STKM 14A(O,D) 21.7~263mm	2172	80. 8. 21	KSA
	KS D 3562	Carbon Steel Pipes for Pressure Service	SPPS	Sch 20, 50A ~ 300A	2821	80. 8. 21	KSA
				Sch 30, 200A ~ 300A			
				Sch 40, 15A ~ 300A			
				Sch 60, 15A ~ 200A Sch 80, 15A ~ 250A			
	KS D 3563	Carbon Steel Tubes for Boiler and Heat Exchanger	STBH	STBH 340, STBH 410 (O.D) 15.9~139.8mm	2173	80. 8. 21	KSA
	KS D 3566	Carbon Steel Pipes for General Structural Purposes	STK	STK 290 : 21.7 ~ 318.5mm STK 400 : 21.7 ~ 318.5mm 406.4 ~ 1016.0mm STK 500 : 21.7 ~ 318.5mm STK 490 : 21.7 ~ 318.5mm STK 540 : 21.7 ~ 318.5mm STK 590 : 318.5mm and Smaller	2822	82. 10. 16	KSA
JIS	JIS G 3444	Carbon Steel Pipes for General Structural Purposes	STK	21.7 ~ 318.5mm	KSKR 06001	06. 12. 27	KSA
	JIS G 3445	Carbon Steel Tubes for Machine Structural Purposes	STKM	GRADE 11 ~ 20	KSKR 06002	06. 12. 27	
	JIS G 3452	Carbon Steel Pipes for Ordinary Piping	SGP	Black, Galva, 15A ~ 300A	KSKR 07009	07. 11. 14	
	JIS G 3454	Carbon Steel Pipes for Pressure Service	STPG	Black, Galva, 15A ~ 300A	KSKR 07010	07. 11. 14	
	JIS G 3461	Carbon Steel Tubes for Boiler and Heat Exchanger	STB	21.7 ~ 139.8mm	KSKR 07011	07. 11. 14	
	JIS C 8305	Rigid Steel Conduit	-	ALL GRADE	KSKR 08100	08. 9. 24	
UL	UL-6	Rigid Steel Conduit	UL	1/2" ~ 6"	FILE E 84175	82. 12. 21	UL
KR	-	Steel Tubes for Boiler & Heat Exchanger	RSTH	33-E-G, 35-E-G	TJN00422-	05. 9. 12	KR
		Steel Tubes for Pressure Piping	RST	138-E-G, 142-E-G	ST001		
LR	-	Welded pipes and Tubes in Carbon and Carbon-manganese Steel	-	Max 323.9mm diameter 12mm Wall thickness	MD00/3175/0002/4	05. 8. 10	Lloyd's Register
DNV	-	Steel Tubes and Pipes for Boiler & Heat Exchanger	-	Max 323.9mm diameter 12mm Wall thickness	AMM-4456	05. 8. 12	Det Norske Veritas
		Steel Tubes and Pipes for Ordinary pressure system	-				
GL	-	Steel Tubes for Pressure Piping	-	Gr. 360 / 410 / 510	WZ1250HH2	05. 10. 13	Germanischer Lloyd
		Steel Tubes for Boiler & Heat Exchanger	-				
NK	-	Steel Tubes for Pressure Piping	-		NKR-138ROL	06. 12. 29	NK
		Steel Tubes for Boiler & Heat Exchanger	-				
BV	-	ERW Carbon and Carbon-manganese steel pipes tubes	-	320,360,410,460 and 510 N/mm O.D 21.0~323.8mm, W.T 1.2~15mm	SMS.W.II/64043	07. 11. 21	BV
SHELL	-	Line pipe	API 5L	Max 12"	-	2007. 8. 17	SHELL VENDOR

※ KFQ : Korean Foundation for Quality
 ※ KSA : Korean Standards Association
 ※ KR : Korean Register of Shipping
 ※ KS : Korea Industrial Standards

※ JIS : Japanese Industrial Standards
 ※ UL : Underwriters Laboratories
 ※ API : American Petroleum Institute
 ※ MITI : Japan Ministry of International Trade and Industry


Daebul Plant

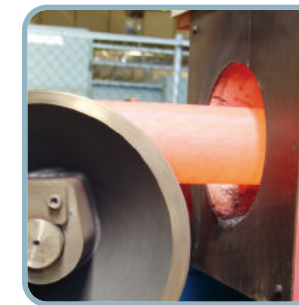
Spec	Spec. No	Specification	Code	Application	Approv. No	Approv. Date	Authority
ISO	ISO 9002	Quality Management System	ISO	Design, development and manufacture of E.R.W	SE00051031	95. 7. 15 (05. 10. 18)	KFQ
	ISO 14001	Environmental Management System	ISO	Environmental Management System	EAC-01695	99. 6. 16	KFQ
API	API 5L	Carbon Steel Pipes for Ordinary Piping	API	Plain end	5L-0325.1	95. 7. 31	API
	API 5CT	Casing & Tubing		Plain end	5CT-0421.1		
KS	KS D 3507	Carbon Steel Pipes for Ordinary Piping	SPP	Black 200A ~ 600A	95-08-004	95. 8. 18	KSA
	KS D 3631	Carbon Steel Pipes for Fuel Gas Piping	SPPG	200A ~ 600A			
	KS D 3566	Carbon Steel Pipes for General Structural Purposes	-	STK290	216.3mm ~ 609.6mm		
				STK400			
				STK490			
				STK500			
	KS D 3568	Carbon Steel Square Pipes for General Structural Purposes	SPSR400 SPSR490	200x200~500mm x 500mm	95-08-005	95. 8. 18	KSA
	KS F 4602	Steel Pipe Piles	-	406.4 ~ 609.6mm	95-08-006	95. 8. 18	KSA
	KS D 3562	Carbon Steel Pipes for Pressure Service	SPPS38	Sch 10(350 ~ 600A)	95-08-20	96. 1. 3	KSA
Sch 20(250 ~ 600A)							
Sch 30(200 ~ 600A)							
Sch 40(200 ~ 500A)							
Sch 60(200 ~ 600A)							
JIS	JIS G 3452	Carbon Steel Pipes for Ordinary Piping	SGP	Black 200A ~ 500A	KR 9666	96. 9. 27	MITI
	JIS G 3454	Steel Pipe Piles	STPG 370, 410	406.4, 508.0, 609.6mm	KR 9664	96. 9. 27	MITI
	JIS G 3444	Carbon Steel Pipes for Pressure Service	STK 290, 400, 490, 500, 540	200A ~ 600A	KR 9666	96. 9. 27	MITI
	JIS G 3466	Carbon Steel Pipes for General Structural Purposes	STKR 400, 490	200x200~500mm x 500mm	KR 9665	96. 9. 27	MITI
	JIS A 5525	Carbon Steel Square Pipes for General Structural Purposes	SKK 400, 490	406.4 ~ 609.6mm	KR 9668	98. 1. 3	MITI
ARAMCO	SAMSS-13	Carbon Steel Pipes for Ordinary Piping	API 5LX70	8" (219.1mm) ~ 24" (610mm)	TK 6045-1	96. 11. 1	ARAMCO VENDOR
	SAMSS-13	Carbon Steel Pipes for Ordinary Piping	API 5L G-B ~ X65				
LR	-	Welded Pipes and Tubes in Carbon and Carbon-manganese Steel (including square pipes for structural purposes)	-	Max 610mm Outside diameter Max 22mm Wall Thickness JIS G 3466 200x200 ~ 350x350	MD00/2319/0004/4	99. 5. 7	Lloyd's Register
DNV	-	Carbon and Carbon-manganese	-	Max 610mm Outside diameter Max 22mm Wall Thickness	AMM-2498	99. 7. 20	Lloyd's Register
GL	-	Longitudinally welded unalloyed steel pipes Carbon steel square pipes for general structural purposes	-	O.D : 216.3 ~ 609.6MM W.T : 3.2 ~ 22mm JIS G 3466 200x200 ~ 350x350	WZ 1047HH3	2000. 6. 9	Germanischer Lloyd's
SHELL	-	Uncoated carbon steel HFW Line pipe	API 5L G-B ~ X70	O.D 8" ~ 24" W.T : Max 22mm	114137	07. 8. 17	Shell Global Solutions
BV	-	Longitudinally ERW steel pipes and tubes in Carbon and Carbon - manganese	-	Max 610mm Outside diameter Max 22mm Wall Thickness	SMS.W.II /55767/A.1	04. 3. 2	RINA
NK	-	Steel pipes for pressure piping	-	Max 610mm Outside diameter Max 22mm Wall Thickness	NKR-68ROL	05. 8. 11	Nippon Kaij Kyokai
KR	-	Steel Tubes and Pipes	-	RST 138 or equivalent grade O.D : 216.3 ~ 609.6MM W.T : 3.2 ~ 22mm	MKP80412-ST001	06. 8. 8	Korean Register
RINA	-	Carbon and Carbon-manganese	-	Max 610mm Outside diameter Max 22mm Wall Thickness	CTC024307 PU	07. 5. 28	RINA



List of Specifications

Specifications	Application	Chemical Requirement(%)						Physical Requirement			
		C (Max)	Si (Max)	Mn (Max)	P (Max)	S (Max)	Others	Tensile Strength Min MPa (psi)	Yield Strength Min MPa (psi)		
BS 1139	-	Pipe Scaffolding	0.20	0.30	-	0.060	0.060		340~460 MPa	210 MPa	
BS EN10255	L	Carbon Steel pipes for ordinary piping	0.20	-	1.4	0.04	0		320~520 MPa	195 MPa	
	M										
	H										
BS 3059	320	For Boiler	0.16	0.35	1.30~0.70	0.040	0.040		340~460 MPa	195 MPa	
BS 3601	360	Pipes for Pressure Service	0.17	0.35	1.40~0.80						
	430		0.21		1.40~1.20						
	BS 6323 Part 5 Type KM		ERW 1		Carbon steel pipes for Mechanical Structural Purposes and General Structural Purposes.	0.13	0.35	0.60	0.050	0.050		300 MPa	200 MPa
ERW 2		0.16	0.70								
ERW 3		0.20	0.90								
ERW 4		0.25	1.20								
ERW 5		0.23	1.50								
API 5L (PSL 1)	L175(A25)	Line Pipe	0.21	0.50	0.60	0.030	0.030		310 MPa (45000 psi)	175 MPa (25400 psi)	
	L175P(A25P)								310 MPa (45000 psi)	175 MPa (25400 psi)	
	L210(A)		0.22		0.90				0.045~0.080	335 MPa (48600 psi)	210 MPa (30500 psi)
	L245(B)				1.20				415 MPa (60200 psi)	280 MPa (42100 psi)	
	L290(X42)		0.26		1.30				415 MPa (60200 psi)	320 MPa (46400 psi)	
	L320(X46)				1.40				435 MPa (63100 psi)	280 MPa (42100 psi)	
	L360(X52)				1.45				460 MPa (66700 psi)	360 MPa (52100 psi)	
	L390(X56)				1.65				490 MPa (71100 psi)	390 MPa (56600 psi)	
	L415(X60)				1.85				520 MPa (75400 psi)	415 MPa (60200 psi)	
	L450(X65)				535 MPa (77600 psi)				450 MPa (65300 psi)		
L485(X70)	570 MPa (82700 psi)	485 MPa (70300 psi)									
API 5L (PSL 2)	L245(M)	Line Pipe		0.22	-	1.20	0.025	0.015		415~760 MPa (60200~110200 psi)	245~450 MPa (35500~65300 psi)
	L290(MX42M)		1.30			415~760 MPa (60200~110200 psi)				290~495 MPa (42100~71800 psi)	
	L320(MX46M)		1.40			435~760 MPa (60100~110200 psi)				320~525 MPa (46400~76100 psi)	
	L360(MX52M)					460~760 MPa (66700~110200 psi)				360~530 MPa (52200~77000 psi)	
	L390(MX56M)					490~760 MPa (71100~110200 psi)				390~545 MPa (56600~79000 psi)	
	L415(MX60M)		1.45			490~760 MPa (71100~110200 psi)				390~545 MPa (56600~79000 psi)	
	L450(MX65M)					520~760 MPa (75400~110200 psi)				415~565 MPa (60200~81900 psi)	
	L485(MX70M)					570~760 MPa (82700~110200 psi)				465~635 MPa (70300~92100 psi)	
	L555(MX80M)		1.85			625~825 MPa (90600~119700 psi)				555~705 MPa (80500~102800 psi)	
API 5CT	J-55	Casing & Tubing	-	-	-	-	-	-	517 MPa (75000 psi)	379~552 MPa (55000~80000 psi)	
	K-55		-	-	-	-	-	655 MPa (95000 psi)	379~552 MPa (55000~80000 psi)		
	N-80		-	-	-	0.03	0.03	-	689 MPa (100000 psi)	552~758 MPa (80000~110000 psi)	
	L-80		-	-	-	-	-	655 MPa (95000 psi)	552~655 MPa (80000~95000 psi)		
	P-110		-	-	-	-	-	862 MPa (125000 psi)	758~945 MPa (110000~140000 psi)		

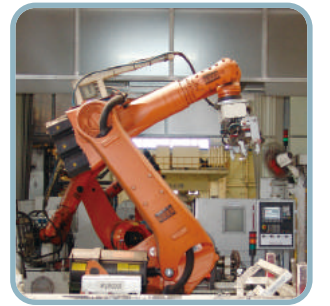
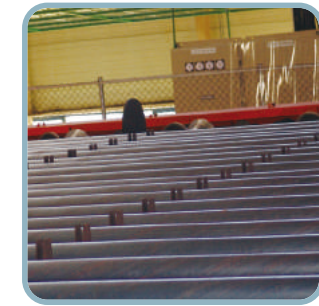
Elongation Min(%)	Flattening Test	Bend Test	Hydrostatic & NDT	Others														
					Longitudinal Direction	Transverse Direction												
22		Black : 180° x 6D Galva : 90° x 8D		* Copper sulfate test : 4 times (1 minute) * Zn Coating Weight : 300 g/m ² min														
20	Larger than DN 50 Weld portion : H = 0.75D The other side of weld portion : H = 0.6 D	DN 50 and Smaller <table border="1"> <tr> <td>DN</td> <td>20</td> <td>25</td> <td>32</td> <td>42</td> <td>48</td> <td>60</td> </tr> <tr> <td>r</td> <td>6</td> <td>8</td> <td>10</td> <td>12</td> <td>15</td> <td>20</td> </tr> </table>	DN	20	25	32	42	48	60	r	6	8	10	12	15	20	50 Bar or NDT	* Copper sulfate test : 4 times (1 minute)
DN	20	25	32	42	48	60												
r	6	8	10	12	15	20												
25	H = $\frac{t+C}{C+D}$ C : 0.10		P = $\frac{20Sa}{D}$ or NDT	* Drift expanding test * Full body Normalizing														
25	H = $\frac{t+C}{C+D}$ Gr Weld portion other <table border="1"> <tr> <td>Gr</td> <td>32</td> <td>0.029</td> <td>0.10</td> </tr> <tr> <td>36</td> <td>0.026</td> <td>0.09</td> <td></td> </tr> <tr> <td>48</td> <td>0.023</td> <td>0.08</td> <td></td> </tr> </table> * C : Constant	Gr	32	0.029	0.10	36	0.026	0.09		48	0.023	0.08			* Heat treatment on the weld seam area			
Gr	32	0.029	0.10															
36	0.026	0.09																
48	0.023	0.08																
22			P = $\frac{20Sa}{D}$ or NDT															
10	H = 0.66D		50 Bar or P = $\frac{20Sa}{D}$	* Minimum expansion for drift expanding test. * Type GKM, GZF : annealing * Type NKM, NZF : Normalizing														
8	H = 0.75D																	
7	H = 0.85D	D/t ≤ 20																
6	H = 0.85D																	
6	H = 0.85D																	
e - 625,000 x $\frac{A^{0.7}}{U^{0.9}}$ e : minimum elongation in 2 in (50.8mm) A : Cross - Sectional area of the test specimen in sq in U : specified minimum ultimate tensile strength in Psi	Weld portion : H=3/4D The other side of weld portion : H=3/5D	2 3/8 and Smaller 90° x 12D	P = $\frac{2Sa}{D}$ P = hydrostatic test Pressure (psi) S = fiber stress, equal to a percentage of specified min. yield strength for the various sizes as shown in the tabulation below (psi) t = specified thickness (inch) D = Outside Diameter (inch) and NDT	* Heat treatment on the weld seam area * Metallographic Examination * Fracture Toughness Test (PSL 2)														
e - 625,000 x $\frac{A^{0.7}}{U^{0.9}}$ e : minimum elongation in 2 in (50.8mm) A : Cross - Sectional area of the test specimen in sq in U : specified minimum ultimate tensile strength in Psi	Weld portion : H=2/3D The other side of weld portion : H=1/3D Weld ductility Test H = $\frac{3.07t}{0.07+3/D}$ less than x 52 H = $\frac{3.05t}{0.05+3/D}$ x 52 and higher																	
e - 625,000 x $\frac{A^{0.7}}{U^{0.9}}$ e : minimum elongation in 2 in (50.8mm) A : Cross - Sectional area of the test specimen in sq in U : specified minimum ultimate tensile strength in Psi	D/t ≥ 16, H=0.5D D/t < 16, H=D(0.83-0.0206 D/t)		P = 2t x Yp x 0.75 and NDT. P = hydrostatic test pressure in psi. t = a factor of 0.6 or 0.8, Yp = specified yield strength in the pipe body in psi D = specified outside diameter in inch Factor 1	* Heat treatment on the weld seam area * Fracture Toughness Test														
	9 ≤ D/t ≤ 28, H=D(1.074-0.0194 D/t)																	
	H _D = D(1.086-0.0163 D/t)																	



List of Specifications

Specifications	Application	Chemical Requirement(%)						Physical Requirement		
		C (Max)	Si (Max)	Mn (Max)	P (Max)	S (Max)	Others	Tensile Strength Min MPa (psi)	Yield Strength Min MPa (psi)	
ASTM A53	A	Carbon Steel pipes for Ordinary piping	0.25	-	0.95	0.05	0.045	Cu, Cr, Ni ≤ 0.40 MO ≤ 0.15 V ≤ 0.08	330 MPa (48000 psi)	205 MPa (30000 psi)
	B		0.30	-	1.20	0.05	0.045		415 MPa (60000 psi)	240 MPa (35000 psi)
ASTM A178	A	Boiler Tube	0.035	0.035	0.035	0.035	0.035	-	325 MPa	180 MPa
	C								415 MPa	255 MPa
	D								455 MPa	275 MPa
ASTM A214	-	Heat-Exchanger & Condenser Tube	0.2	-	7~0	0.04	0	-	-	
ASTM A252	Grade I		-	-	-	0.05	-	-	345 MPa (50000 psi)	207 MPa (30000 psi)
	Grade II								414 MPa (60000 psi)	241 MPa (35000 psi)
	Grade III								455 MPa (66000 psi)	310 MPa (45000 psi)
ASTM A500	A	Structural Carbon Steel Pipes in Round	0.30	-	-	0.045	0.045	cu ≥ 0.20	310 MPa (45000 psi)	228 MPa (33000 psi)
	B								400 MPa (58000 psi)	289 MPa (42000 psi)
	C								428 MPa (62000 psi)	317 MPa (46000 psi)
	D								400 MPa (58000 psi)	248 MPa (36000 psi)
	A	Structural Carbon Steel Pipes in Square & Rectangular	0.30	-	-	0.045	0.045	cu ≥ 0.20	310 MPa (45000 psi)	269 MPa (39000 psi)
	B								400 MPa (58000 psi)	317 MPa (46000 psi)
	C								428 MPa (62000 psi)	345 MPa (50000 psi)
	D								400 MPa (58000 psi)	248 MPa (36000 psi)
ASTM A589 (Type IV)	A	Water-well piping pipe	-	-	-	0.060	0.060		331 MPa (48000 psi)	207 MPa (30000 psi)
	B		-	-	-	0.060	0.060		414 MPa (60000 psi)	241 MPa (35000 psi)
ASTM A795	A	Carbon Steel pipes for fire protection use	0.25	-	0.95	0.035	0.035		-	-
	B		0.30	-	1.20	0.035	0.035			

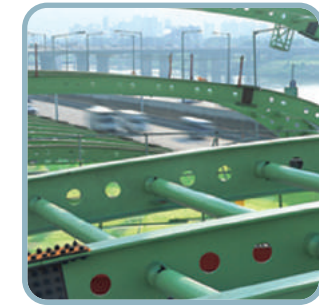
Elongation Min(%)	Flattening Test	Bend Test	Hydrostatic & NDT	Others
$e = 625,000 \times \frac{A}{U^{0.02}}$ e : minimum elongation in 2 in (50.8mm) A : Cross-Sectional area of the test specimen in sq in U : specified minimum ultimate tensile strength in Psi	Weld portion : H = 2/3D The other side of weld portion : H = 1/3D	For Pipe NPS 2 and under 90° x 12D 180° x 8D When order for close coiling	Specified respectively in size and grade (P=2s/D) The maximum pressure NPS 3 ≤ P = 2,500 Psi NPS > 3 : P = 2,800 Psi NDT and NDT (NPS 2 and over)	• Zn Coating Weight : 500 g/m ² min • Heat treatment on the weld seam area (Grade B)
35	$H = \frac{(l + e)t}{e + tD}$ e : 0.07(C ≥ 0.19), 0.09(C ≤ 0.18)	-	p = 2206t/D or NDT P : hydrostatic test Pressure(Mpa) t : specified wall thickness(mm) D : specified outside diameter(mm)	• Full Body Normalizing • Flange Test • Reverse Flattening Test • Crush test(When required)
30	$H = \frac{(l + e)t}{e + tD}$ e : 0.07(C ≥ 0.19), 0.09(C ≤ 0.18)	-	p = 2206t/D or NDT P : hydrostatic test Pressure(Mpa) t : specified wall thickness(mm) D : specified outside diameter(mm)	• Full Body Normalizing • Flange Test • Reverse Flattening Test • Crush test(When required)
-	$H = \frac{(l + e)t}{e + tD}$ e : 0.07(C ≥ 0.19), 0.09(C ≤ 0.18)	-	p = 2206t/D or NDT P : hydrostatic test Pressure(Mpa) t : specified wall thickness(mm) D : specified outside diameter(mm)	• Full Body Normalizing • Flange Test • Reverse Flattening Test • Crush test(When required)
30 (E=48t+15.00), t=(inch)	-	-	-	-
25 (E=40t+12.50), t=(inch)	-	-	-	-
20 (E=32t+10.00), t=(inch)	-	-	-	-
25	-	-	-	-
23	-	-	-	-
21	-	-	-	-
23	$H = \frac{(l + e)t}{e + tD}$ A : e = 0.07 B : e = 0.08 C : e = 0.06	-	-	If necessary, Stress relieved, annealed
25	-	-	-	-
23	-	-	-	-
21	-	-	-	-
23	-	-	-	-
$e = 625,000 \times \frac{A^{0.02}}{U^{0.02}}$ e : minimum elongation in 2 in (50.8mm) A : Cross-Sectional area of the test specimen in sq in U : specified minimum ultimate tensile strength in Psi	Weld portion : H = 2/3D The other side of weld portion : H = 1/3D	-	In accordance with the specified hydrostatic pressures	• Zn Coating weight : 550g/m ² min
-	Weld portion : H = 2/3D The other side of weld portion : H = 1/3D	-	In accordance with the specified hydrostatic pressures or NDT	• Zn Coating weight : 460g/m ² min



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Standard	Application	Chemical Requirement(%)							Physical Requirement	
		C (Max)	Si (Max)	Mn (Max)	P (Max)	S (Max)	Others	Tensile Strength Min MPa (psi)	Yield Strength Min MPa (psi)	
KS D 3507 (JIS G 3452)	SPP(SGP)	General Piping	-	-	-	0.040	0.040	-	294 (30)	-
KS D 3631	SPPG	Fuel Gas Piping	0.30	0.35	0.95	0.040	0.035	-	334 (34)	206 (21)
KS D 3562 (JIS G 3454)	SPPS 380 (STPG 370)	Pressure Service	0.25	0.35	0.30~0.90	0.040	0.040	-	380 (38)	220 (22)
	SPPS 420 (STPG 410)		0.30	0.35	0.30~1.00	0.040	0.040	-	420 (42)	250 (25)
KS D 3563 (JIS G 3461)	STBH 340 (STB 340)	Boiler and Heat Exchanger	0.18	0.35	0.30~0.60	0.035	0.035	-	340 (35)	175 (18)
	STBH 410 (STB 410)		0.32	0.35	0.30~0.80	0.035	0.035	-	410 (42)	255 (26)
	STBH 510 (STB 510)		0.25	0.35	1.00~1.50	0.035	0.035	-	510 (52)	295 (30)
KS C 8401 (JIS C 8305)	-	Protecting Electric Wires	Use Steel Strips Specified in KS D 3555 (JIS G 3132)							
KS D 3566 (JIS G 3444)	STK 290	General Structural Purposes	-	-	-	0.050	0.050	-	290 (30)	-
	STK 400		0.25	-	-	0.040	0.040	-	400 (41)	235 (24)
	STK 500		0.24	0.35	0.30~1.00	0.040	0.040	-	490 (51)	315 (36)
	STK 490		0.18	0.55	1.50	0.040	0.040	-	500 (50)	355 (32)
	STK 540		0.23	0.55	1.50	0.040	0.040	-	540 (55)	390 (40)
KS D 3568 (JIS G 3466)	SPSR 400	Square Pipes for General Structural Purposes	0.25	-	-	0.040	0.040	-	400 (41)	245 (25)
	SPSR 490		0.18	0.55	1.50	0.040	0.040	-	490 (50)	325 (33)

Elongation Min(%)		Flattening Test		Bend Test	Hydrostatic & NDI	Others
Specimen Type		H = Distance between Flattening Plate D = Outside Diameter T = Wall Thickness				
11, 12	5				P = Test Pressure (MPa) S = Fiber Stress (MPa)	
30	25	H = 2/3D		Size 50A and Under 90° x 6D	P = 2.5 MPa / or NDT	Copper Sulfate test : 5 times (1 minute)
30	25	H = 2/3D		Size 40A and Under 90° x 6D	P = 3.0 MPa / or NDT	Normalizing On the Weld Seam area
30	25	Weld portion : H = 2/3D The other side of weld portion : H = 1/3D		Size 40A and Under 90° x 6D	Unit = kgf/cm ² SCH. NO. 1.0 2.0 3.0 4.0 5.0 6.0 test pressure 20 35 50 60 90 120 or NDT	-
35	-	$H = \frac{(1+e)t}{e + \sqrt{D}}$	e = 0.09	90° x 4D(G16, G22) 90° x 4D(G28)	$P = \frac{200St}{D}$ S = 60% x Yp Yp = yield Point or NDT	<ul style="list-style-type: none"> • Full Body Normalizing • Flare Test • Reverse Flattening Test
25	-		e = 0.08			
25	-		e = 0.07			
30	25	H = 2/3D		Outside Diameter 50mm and Under 90° x 8D	-	Copper Sulfate test : 3 times (1 minute)
23	18	H = 2/3D		90° x 6D	-	-
15	10	H = 7/8D		90° x 6D	-	-
23	18	H = 7/8D		90° x 6D	-	-
20	16	H = 7/8D		90° x 6D	-	-
-	23	-		-	-	-
-	23	-		-	-	-



List of Specifications

Standard Specifications	Application	Chemical Requirement							Tensile Strength Min / MPa(kg/mm ²)
		C (Max)	Si (Max)	Mn (Max)	P (Max)	S (Max)	Others		
KS D 3517 (JIS G 3445)	STKM 11A	0.12	0.35	0.60	0.040	0.040	-	290 (30)	
	STKM 12A	0.20	0.35	0.60	0.040	0.040	-	340 (35)	
	STKM 12B							390 (40)	
	STKM 12C							470 (48)	
	STKM 13A	0.25	0.35	0.30-0.90	0.040	0.040	-	370 (38)	
	STKM 13B							440 (45)	
	STKM 13C							510 (52)	
	STKM 14A	0.30	0.35	0.30-1.00	0.040	0.040	-	410 (42)	
	STKM 14B							500 (51)	
	STKM 14C							550 (56)	
	STKM 15A	0.25 - 0.35	0.35	0.30-1.00	0.040	0.040	-	470 (48)	
	STKM 15C							580 (59)	
	STKM 16A	0.35 - 0.45	0.40	0.40-1.00	0.040	0.040	-	510 (52)	
	STKM 16C							620 (63)	
	STKM 17A	0.45 - 0.55	0.40	0.40-1.00	0.040	0.040	-	550 (56)	
	STKM 17C							650 (66)	
	STKM 18A	0.18	0.55	1.50	0.040	0.040	-	440 (45)	
	STKM 18B							490 (50)	
STKM 18C	510 (52)								

Physical Requirement			Flattening Test	Bend Test	Hydrostatic & (NDI) P = Test Pressure(kgf/cm ²) S = Fiber Stress(kg/mm ²)	Others
Yield Strength Min MPa(kg/mm ²)	Elongation Min(%) Specimen type		H = Distance between Flattening Plate D = Outside Diameter T = Wall Thickness			
	11,12	5				
-	35	30	1/2D	Outside Diameter 50mm and under 180° x 4D		
(18) 175	35	30	2/3D	90° x 6D		
(28) 275	25	20	2/3D	90° x 6D		
(36) 355	20	15	-	-		
(22) 215	30	25	2/3D	90° x 6D		
(31) 305	20	15	3/4D	90° x 6D		
(39) 280	15	10	-	-		
(25) 245	25	20	3/4D	90° x 6D		
(36) 355	15	10	7/8D	90° x 8D		
(42) 410	15	10	-	-		
(28) 275	22	17	3/4D	90° x 6D		
(44) 430	12	7	-	-		
(33) 325	20	15	7/8D	90° x 8D		
(47) 460	12	7	-	-		
(35) 345	20	15	7/8D	90° x 8D		
(49) 480	10	5	-	-		
(28) 275	25	20	7/8D	90° x 6D		
(32) 315	23	18	7/8D	90° x 8D		
(39) 380	15	10	-	-		



Main Production and Specification Comparison List

Class	KOREA	JAPAN	U.S.A	ENGLAND	USE
Carbon steel Pipes for ordinary piping	(KS D 3507 / SPP)	(JIS G 3452 / SGP)	ASTM A53	BS EN 10255	For Use Conveying Gas, Water and Oil for Low Pressure Service
Carbon steel Pipes for pressure application	(KS D 3562 / SPPS)	(JIS G 3454 / STPG)	ASTM A53, API 5L	BS 3601	Carbon Steel Pipes for Pressure Service under 350
Carbon steel Pipes for structural purposes	(KS D 3517 / STKM)	(JIS G 3445 / STKM)	ASTM A53	BS 980 BS 6323	For Building, Machinery
	(KS D 3566 / STK)	(JIS G 3444 / STK)	ASTM A500	BS 1139 BS 4848	For Buildings, Bridge, and general Structural Purposes
	(KS D 3568 / SPSR)	(JIS G 3466 / STKR)	ASTM A500	BS 4848	Square and Rectangular Tubes for Structural Purposes
Line Pipes	-	-	API (PSL1, 2)	-	Line Pipes for Oil & Gas
Casing and Tubing	-	-	API 5CT	-	For Producing Operation in both Oil and Natural Gas Industries
Rigid steel Conduit	(KS C 8401)	(JIS C 8305)	UL6 ANSI C80.1	BS 31	For Electric Wiring
Carbon steel Tubes for Heat Transfer	(KS D 3563/STBH)	(JIS G 3461/STB)	ASTM A178, A214, A226	BS 3059 BS 3606	For Heat Exchange, Such as Water Tubes, Smoke Tubes, Superheater Tubes and Air Preheater Tubes of Boilers or Heat Exchanger Tubes, Condenser Tubes and Catalyzer Tubes in the chemical and Petroleum industries.

※ API : American Petroleum Institute ※ ASTM : American Society for Testing and Materials
 ※ BS : British Standards Association ※ UL : Underwriters Laboratories
 ※ KS : Korean Industrial Standards ※ JIS : Japanese Industrial Standards
 Please contact our sales department for different standard from above our main production list.



API 5CT Tubing (OCTG : Oil Country tubular goods)

Size	Outside Diameter(D)		Wall Thickness(t)		Weight(Wpe)		Hydrostatic test Pressure(psi)				
	in	mm	in	mm	lb/ft	kg/m		H40	J55	N80	L80
1.050	1.050	26.7	0.113	2.9	1.13	1.70	Std	3000	3000	3000	3000
			Alt	6900	9500	-	-				
			0.154	3.9	1.48	2.19	Std	3000	3000	3000	3000
			Alt	9400	10000	-	-				
1.315	1.315	33.4	0.133	3.4	1.68	2.52	Std	3000	3000	3000	3000
			Alt	6500	8900	-	-				
			0.179	4.5	2.17	3.21	Std	3000	3000	3000	3000
			Alt	8700	10000	-	-				
1.660	1.660	42.2	0.125	3.2	2.05	3.08	Std	3000	3000	3000	3000
			Alt	4800	6600	-	-				
			0.140	3.6	2.27	3.43	Std	3000	3000	-	-
			Alt	5400	7400	-	-				
			0.191	4.9	3.00	4.51	Std	3000	3000	3000	3000
			Alt	7400	10000	-	-				
1.900	1.900	48.3	0.125	3.2	2.37	3.56	Std	3000	3000	3000	3000
			Alt	4200	5800	-	-				
			0.145	3.7	2.72	4.07	Std	3000	3000	3000	3000
			Alt	4900	6700	-	-				
			0.200	5.1	3.63	5.43	Std	3000	3000	3000	3000
			Alt	6700	9300	-	-				
			0.250	6.4	4.41	6.60	Std	-	-	-	3000
			Alt	-	-	-	-				
			0.300	7.6	5.13	7.63	Std	-	-	-	3000
			Alt	-	-	-	-				
2 3/8	2.375	60.3	0.167	4.2	3.94	5.81	Std	3000	3000	3000	3000
			Alt	4500	6200	-	-				
			0.190	4.8	4.44	6.57	Std	3000	3000	3000	3000
			Alt	5100	7000	-	-				
			0.254	6.5	5.76	8.62	Std	-	-	-	3000
			Alt	-	-	-	-				
			0.295	7.5	6.56	9.77	Std	-	-	-	3000
			Alt	-	-	-	-				
			0.336	8.5	7.67	10.86	Std	-	-	-	3000
			Alt	-	-	-	-				
2 7/8	2.875	73.0	0.217	5.5	6.17	9.16	Std	3000	3000	3000	3000
			Alt	4800	6600	-	-				
			0.276	7.0	7.32	11.39	Std	-	-	3000	3000
			Alt	-	-	-	-				
			0.308	7.8	8.45	12.54	Std	-	-	3000	3000
			Alt	-	-	-	-				
			0.340	8.6	9.21	13.66	Std	-	-	-	3000
			Alt	-	-	-	-				
			0.392	10.0	10.40	15.54	Std	-	-	-	3000
			Alt	-	-	-	-				
0.440	11.2	11.45	17.07	Std	-	-	-	3000			
Alt	-	-	-	-							



API 5CT Tubing (OCTG : Oil Country tubular goods)

Size	Outside Diameter(D)		Wall Thickness(t)		Weight(Wpe)		Hydrostatic test Pressure(psi)				
	in	mm	in	mm	lb/ft	kg/m		H40	J55	N80	L80
3 1/2	3.500	88.9	0.216	5.5	7.58	11.31	Std	3000	3000	3000	3000
							Alt	3900	5400	-	-
			0.254	6.5	8.81	13.21	Std	3000	3000	3000	3000
							Alt	4600	6400	-	-
			0.289	7.3	9.92	14.69	Std	3000	3000	3000	3000
							Alt	5300	7300	-	-
			0.375	9.5	12.53	18.60	Std	-	-	-	3000
							Alt	-	-	-	-
			0.430	10.9	14.11	20.97	Std	-	-	-	3000
							Alt	-	-	-	-
			0.476	12.1	15.39	22.92	Std	-	-	-	-
							Alt	-	-	-	-
0.530	13.5	16.83	25.10	Std	-	-	-	3000			
				Alt	-	-	-	-			
4	4.000	101.6	0.226	5.7	9.12	13.48	Std	3000	3000	3000	3000
							Alt	3600	5000	-	-
			0.262	6.7	10.47	15.68	Std	3000	3000	3000	3000
							Alt	4200	5800	-	-
			0.330	8.4	12.95	19.31	Std	-	-	-	3000
							Alt	-	-	-	-
			0.415	10.5	15.90	23.59	Std	-	-	-	3000
							Alt	-	-	-	-
			0.500	12.7	18.71	27.84	Std	-	-	-	3000
							Alt	-	-	-	-
			0.610	15.5	22.11	32.91	Std	-	-	-	3000
							Alt	-	-	-	-
4 1/2	4.500	114.3	0.271	6.9	12.25	18.27	Std	3000	3000	3000	3000
							Alt	3900	5300	-	-
			0.337	8.6	15.00	22.42	Std	-	-	-	3000
							Alt	-	-	-	-
			0.380	9.7	16.77	25.02	Std	-	-	-	3000
							Alt	-	-	-	-
			0.430	10.9	18.71	27.79	Std	-	-	-	3000
							Alt	-	-	-	-
			0.500	12.7	21.38	31.82	Std	-	-	-	3000
							Alt	-	-	-	-
			0.560	14.2	23.59	35.05	Std	-	-	-	3000
							Alt	-	-	-	-
0.630	16.0	26.06	38.79	Std	-	-	-	3000			
				Alt	-	-	-	-			



API 5CT Casing (OCTG : Oil Country tubular goods)

Size	Outside Diameter(D)		Wall Thickness(t)		Weight(Wpe)		Hydrostatic test Pressure(psi)								
	in	mm	in	mm	lb/ft	kg/m		H40	J55/K55	M65	N80	L80			
4 1/2	4.500	114.3	0.205	5.2	9.41	13.99	Std	2900	3000	3000	-	-			
							Alt	-	4000	-	-	-			
			0.224	5.7	10.24	15.27	Std	-	3000	3000	-	-			
							Alt	-	4400	-	-	-			
			0.250	6.4	11.36	17.03	Std	-	3000	3000	3000	3000			
							Alt	-	4900	-	-	-			
			0.290	7.4	13.05	19.51	Std	-	-	3000	3000	3000			
							Alt	-	-	-	-	-			
			0.337	8.6	15.00	22.42	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
			6 5/8	6.625	168.3	0.288	7.3	19.51	28.98	Std	2800	2700	3000	-	-
										Alt	-	-	-	-	-
0.352	8.9	23.60				34.98	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
0.417	10.6	27.67				41.22	Std	-	3000	3000	-	-			
							Alt	-	3600	-	-	-			
0.475	12.1	31.23	46.61	Std	-	3000	3000	3000	3000						
				Alt	-	4100	-	-	-						
8 5/8	8.625	219.1	0.264	6.7	23.60	35.09	Std	-	-	3000	3000	3000			
							Alt	-	-	-	-	-			
			0.304	7.7	27.04	40.14	Std	2300	-	3000	3000	3000			
							Alt	-	-	-	-	-			
			0.352	8.9	31.13	46.13	Std	2600	-	-	3000	3000			
							Alt	-	-	-	-	-			
			0.400	10.2	35.17	52.55	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
			0.450	11.4	39.33	58.39	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
			0.500	12.7	43.43	64.64	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
0.557	14.1	48.04	71.28	Std	-	-	-	-	-						
				Alt	-	-	-	-	-						
10 3/4	10.750	273.1	0.279	7.1	31.23	46.57	Std	1200	-	-	-	-			
							Alt	1700	-	-	-	-			
			0.350	8.9	38.91	57.99	Std	1600	2100	3000	-	-			
							Alt	2100	2900	-	-	-			
			0.400	10.2	44.26	66.13	Std	-	2500	3900	-	-			
							Alt	-	3300	-	-	-			
			0.450	11.4	49.55	73.57	Std	-	2800	3000	3000	3000			
							Alt	-	3700	-	-	-			
			0.495	12.6	54.26	80.94	Std	-	-	3000	3000	3000			
							Alt	-	-	-	-	-			
			0.545	13.8	59.45	88.24	Std	-	-	-	-	-			
							Alt	-	-	-	-	-			
0.595	15.1	64.59	96.07	Std	-	-	-	-	-						
				Alt	-	-	-	-	-						
0.672	17.1	72.40	107.95	Std	-	-	-	-	-						
				Alt	-	-	-	-	-						
0.734	18.6	78.59	116.73	Std	-	-	-	-	-						
				Alt	-	-	-	-	-						
0.797	20.2	84.80	125.98	Std	-	-	-	-	-						
				Alt	-	-	-	-	-						
16	16.000	406.4	0.375	9.5	62.64	92.98	Std	1100	-	-	-	-			
							Alt	-	-	-	-	-			
			0.438	11.1	72.86	108.20	Std	-	1800	2800	-	-			
							Alt	-	-	-	-	-			
			0.495	12.6	82.05	122.36	Std	-	2000	3000	-	-			
							Alt	-	-	-	-	-			
0.656	16.7	107.60	160.49	Std	-	-	-	3000	-						
				Alt	-	-	-	-	-						
20	20.000	508.0	0.438	11.1	91.59	136.01	Std	1100	1400	2300	-	-			
							Alt	-	-	-	-	-			
			0.500	12.7	104.23	155.12	Std	-	1600	2600	-	3000			
							Alt	-	-	-	-	-			
			0.635	16.1	131.45	195.30	Std	-	2100	-	-	-			
							Alt	-	-	-	-	-			

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)					
	in	mm	in	mm	lb/ft	kg/m	in	mm	Grade A25 (Std)		Grade A (L 210)		Grade B (L 245)	
									Std	Alt	Std	Alt	Std	Alt
1/2	0.840	21.3	0.109	2.8	0.85	1.28	0.622	15.7	700	700	-	700	-	
			0.147	3.7	1.09	1.61	0.546	13.9	850	850	-	850	-	
			0.294	7.5	1.72	2.55	0.252	6.3	1000	1000	-	1000	-	
			0.113	2.9	1.13	1.70	0.824	20.9	700	700	-	700	-	
3/4	1.050	26.7	0.154	3.9	1.48	2.19	0.742	18.9	820	820	-	850	-	
			0.308	7.8	2.44	3.64	0.434	11.1	1000	1000	-	1000	-	
			0.133	3.4	1.68	2.52	1.049	26.6	700	700	-	700	-	
1	1.315	33.4	0.179	4.5	2.17	3.21	0.957	24.4	850	850	-	850	-	
			0.358	9.1	3.66	5.45	0.599	15.2	1000	1000	-	1000	-	
			0.140	3.6	2.27	3.43	1.380	35.0	1000	1200	-	1300	-	
1 1/4	1.660	42.2	0.191	4.9	3.00	4.51	1.278	32.4	1300	1800	-	1900	-	
			0.382	9.7	5.22	7.77	0.896	22.8	1400	2200	-	2300	-	
			0.145	3.7	2.72	4.07	1.610	40.9	1000	1200	-	1300	-	
1 1/2	1.900	48.3	0.200	5.1	3.63	5.43	1.500	38.1	1300	1800	-	1900	-	
			0.400	10.2	6.41	9.58	1.100	27.9	1400	2200	-	2300	-	
			0.145	3.7	2.72	4.07	1.610	40.9	1000	1200	-	1300	-	

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)																	
	in	mm	in	mm	lb/ft	kg/m	in	mm	Grade																	
									A25 (L175)	A (L210)	B (L245)	x42 (L290)	x46 (L330)	x52 (L360)	x56 (L390)	x60 (L415)	x65 (L450)	x70 (L485)	x80 (L555)							
2	2 3/8	60.3	0.083	2.1	2.03	3.01	2.209	56.1	Std	600	1260	1470	1760	1930	2180	2350	2520	2730	2940	-	-	-	-			
			Alt	-	1570	1830	2200	2410	2730	2940	3150	3410	3670	-	-	-	-	-	-	-	-	-	-	-		
			0.109	2.8	2.64	3.97	2.157	54.7	Std	800	1650	1930	2310	2530	2860	3000	3000	3000	3000	3000	3000	-	-	-	-	
			Alt	-	2070	2410	2890	3170	3580	3860	4130	4470	4820	-	-	-	-	-	-	-	-	-	-	-	-	
			0.125	3.2	3.01	4.51	2.125	53.9	Std	1000	1890	2210	2650	2910	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-
			Alt	-	2370	2500	3320	3630	4110	4420	4740	5130	5530	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.141	3.6	3.37	5.03	2.093	53.1	Std	1000	2140	2490	2990	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-
			Alt	-	2500	2500	3740	4100	4630	4990	5340	5790	6230	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.154	3.9	3.66	5.42	2.067	52.5	Std	1000	2330	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-
			Alt	-	2500	2500	4090	4470	5060	5450	5840	6320	6810	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.172	4.4	4.05	6.07	2.031	51.5	Std	1100	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-
			Alt	-	2500	2500	4560	5000	5650	6080	7120	7060	7260	-	-	-	-	-	-	-	-	-	-	-	-	-
2	2 3/8	60.3	0.188	4.8	4.40	6.57	1.999	50.7	Std	1200	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-		
			Alt	-	2500	2500	4990	5460	6170	6650	7120	7260	-	-	-	-	-	-	-	-	-	-	-	-	-	
			0.218	5.5	5.03	7.43	1.939	49.3	Std	1300	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
			Alt	-	2500	2500	5780	6330	7160	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.250	6.4	5.68	8.51	1.875	47.5	Std	1400	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
			Alt	-	2500	2500	6630	7260	7260	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.281	7.1	6.29	9.31	1.813	46.1	Std	1400	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
			Alt	-	2500	2500	7260	7260	7260	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.436	11.1	9.04	13.47	1.503	38.1	Std	1400	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
			Alt	-	2500	2500	7260	7260	7260	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			2 1/2	2 7/8	73.0	0.083	2.1	2.48	3.67	2.709	68.8	Std	600	1040	1210	1460	1590	1800	1940	2080	2250	2430	-	-	-	-
						Alt	-	1300	1520	1820	1990	2250	2430	2430	2810	3030	-	-	-	-	-	-	-	-	-	-
0.109	2.8	3.22				4.85	2.657	67.4	Std	800	1360	1590	1910	2090	2370	2550	2730	2960	3000	-	-	-	-			
Alt	-	1710				1990	2390	2620	2960	3180	3180	3700	3980	-	-	-	-	-	-	-	-	-	-	-	-	
0.125	3.2	3.67				5.51	2.625	66.6	Std	1000	1570	1830	2190	2400	2710	2920	3000	3000	3000	3000	-	-	-	-		
Alt	-	1960				2280	2740	3000	3390	3650	3910	4240	4570	-	-	-	-	-	-	-	-	-	-	-	-	
0.141	3.6	4.12				6.16	2.593	65.8	Std	1000	1770	2060	2470	2710	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
Alt	-	2210				2500	3090	3380	3830	4120	4410	4780	5150	-	-	-	-	-	-	-	-	-	-	-	-	
0.156	4.0	4.53				6.81	2.563	65.0	Std	1000	1950	2280	2730	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
Alt	-	2440				2500	3420	3740	4230	4560	4880	5290	5700	-	-	-	-	-	-	-	-	-	-	-	-	
0.172	4.4	4.97				7.44	2.531	64.2	Std	1000	2150	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-	
Alt	-	2500				2500	3770	4130	4670	5030	5380	5830	6280	-	-	-	-	-	-	-	-	-	-	-	-	
0.188	4.8	5.40	8.07	2.499	63.4	Std	1000	2350	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-				
Alt	-	2500	2500	4120	4510	5100	5490	5890	6380	6870	-	-	-	-	-	-	-	-	-	-	-	-				
0.203	5.2	5.80	8.69	2.469	62.6	Std	1000	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-				
Alt	-	2500	2500	4450	4870	5510	5930	6350	6880	7260	-	-	-	-	-	-	-	-	-	-	-	-				
0.216	5.5	6.14	9.16	2.443	62.0	Std	1100	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-				
Alt	-	2500	2500	4730	5180	5860	6310	6760	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-				
0.250	6.4	7.02	10.51	2.375	60.2	Std	1200	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-				
Alt	-	2500	2500	5480	6000	6780	7260	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-				
0.276	7.0	7.67	11.39	2.323	59.0	Std	1300	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-				
Alt	-	2500	2500	6050	6620	7260	7260	7260	7260	7260	-	-	-	-	-	-	-	-	-	-	-	-				
3	3 1/2	88.9	0.083	2.1	3.03	4.50	3.334	84.7	Std	600	850	1000	1200	1310	1480	1590	1710	1850	1990	-	-	-	-			
			Alt	-	1070	1250	1490	1640	1850	1990	2130	2310	2490	-	-	-	-	-	-	-	-	-	-	-		
0.109	2.8	3.95	5.95	3.282	83.3	Std																				



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)														
									Grade A25 (L175)	Grade A (L210)	Grade B (L245)	Grade ×42 (L290)	Grade ×46 (L330)	Grade ×52 (L360)	Grade ×56 (L390)	Grade ×60 (L415)	Grade ×65 (L450)	Grade ×70 (L485)	Grade ×80 (L555)				
	in	mm	in	mm	lb/ft	kg/m	in	mm	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt
3	3 1/2	88.9	0.125	3.2	4.51	6.76	3.250	82.5	Std	1000	1290	1500	1800	1970	2230	2400	2570	2790	3000	3000	—		
									Alt	—	1610	1890	2250	2460	2790	3000	3210	3480	3750	—			
			0.141	3.6	5.06	7.57	3.218	81.7	Std	1000	1450	1690	2030	2220	2510	2710	2900	3000	3000	—			
									Alt	—	1810	2120	2540	2780	314	3380	3630	3930	4230	—			
			0.156	4.0	5.58	8.37	3.188	80.9	Std	1000	1600	1870	2250	2460	2780	3000	3000	3000	3000	—			
									Alt	—	2010	2340	2810	3080	3480	3740	4010	4350	4680	—			
			0.172	4.4	6.12	9.17	3.156	80.1	Std	1000	1770	2060	2480	2710	3000	3000	3000	3000	3000	—			
									Alt	—	2210	2500	3100	3390	3830	4130	4420	4790	5160	—			
			0.188	4.8	6.66	9.95	3.124	79.3	Std	1000	1930	2260	2710	2970	3000	3000	3000	3000	3000	—			
									Alt	—	2420	2500	3380	3710	4190	4510	4830	5240	5640	—			
			0.216	5.5	7.58	11.31	3.068	77.9	Std	1000	2220	2500	3000	3000	3000	3000	3000	3000	3000	—			
									Alt	—	2500	2500	3890	4260	4810	5180	5550	6020	6480	—			
0.250	6.4	8.69	13.02	3.000	76.1	Std	—	2500	2500	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2500	2500	4500	4930	5570	6000	6430	6960	7260	—						
0.281	7.1	9.67	14.32	2.938	74.7	Std	—	2500	2500	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2500	2500	5060	5540	6260	6740	7230	7260	7260	—						
0.300	7.6	10.26	15.24	2.900	73.7	Std	1300	2500	2500	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2500	2500	5400	5910	6690	7200	7260	7260	7260	—						
3 1/2	4	101.6	0.083	2.1	3.48	5.15	3.834	97.4	Std	—	750	870	1050	1150	1290	1390	1490	1620	1740	—			
									Alt	—	930	1090	1310	1430	1620	1740	1870	2020	2180	—			
			0.109	2.8	4.53	6.82	3.782	96.0	Std	600	960	1140	1370	1500	1700	1830	1960	2130	2290	—			
									Alt	—	1230	1430	1720	1890	2130	2290	2450	2660	2860	—			
			0.125	3.2	5.18	7.76	3.750	95.2	Std	—	1130	1310	1580	1730	1950	2100	2250	2440	2630	—			
									Alt	—	1410	1640	1970	2160	2440	2630	2810	3050	3280	—			
			0.141	3.6	5.82	8.70	3.718	94.4	Std	800	1270	1480	1780	1950	2200	2370	2540	2750	2960	—			
									Alt	—	1590	1850	2220	2430	2750	2960	3170	3440	3700	—			
			0.156	4.0	6.41	9.63	3.688	93.6	Std	—	1400	1640	1970	2150	2430	2620	2810	3000	3000	—			
									Alt	—	1760	2050	2460	2690	3040	3280	3510	3800	4100	—			
			0.172	4.4	7.04	10.55	3.656	92.8	Std	1000	1550	1810	2170	2370	2680	2890	3000	3000	3000	—			
									Alt	—	1940	2260	2710	2970	3350	3610	3870	4190	4520	—			
0.188	4.8	7.66	11.46	3.624	92.0	Std	1200	1690	1970	2370	2590	2930	3000	3000	3000	3000	—						
						Alt	—	2120	2470	2960	3240	3670	3950	4230	4580	4940	—						
0.226	5.7	9.12	13.48	3.548	90.2	Std	1200	2030	2370	2850	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2540	2800	3560	3900	4410	4750	5090	5510	5930	—						
0.250	6.4	10.02	15.02	3.500	88.8	Std	—	2250	2630	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2800	2800	3940	4310	4880	5250	5630	6090	6560	—						
0.281	7.1	11.17	16.55	3.438	87.4	Std	—	2530	2800	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2800	2800	4430	4850	5480	5900	6320	6850	7260	—						
0.318	8.1	12.52	18.68	3.364	85.4	Std	1700	2800	2800	3000	3000	3000	3000	3000	3000	3000	—						
						Alt	—	2800	2800	5010	5490	6200	6680	7160	7260	7260	—						
4	4 1/2	114.3	0.083	2.1	3.92	5.81	4.334	110.1	Std	—	660	770	930	1020	1150	1240	1330	1440	1550	1770			
									Alt	—	830	970	1160	1270	1440	1550	1660	1800	1940	2210			
			0.125	3.2	5.85	8.77	4.250	107.9	Std	800	1000	1170	1400	1530	1730	1870	2000	2170	2330	2670			
									Alt	—	1250	1460	1750	1920	2170	2330	2500	2710	2920	3330			
			0.141	3.6	6.57	9.83	4.218	107.1	Std	—	1130	1320	1580	1730	1760	2110	2260	2440	2630	3000			
									Alt	—	1410	1650	1970	2160	2440	2630	2820	3060	3290	3760			
0.156	4.0	7.24	10.88	4.188	106.3	Std	1000	1250	1460	1750	1910	2160	2330	2500	2700	2910	3000						
						Alt	—	1560	1820	2180	2390	2700	2910	3120	3380	3640	4160						

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)														
									Grade A25 (L175)	Grade A (L210)	Grade B (L245)	Grade ×42 (L290)	Grade ×46 (L330)	Grade ×52 (L360)	Grade ×56 (L390)	Grade ×60 (L415)	Grade ×65 (L450)	Grade ×70 (L485)	Grade ×80 (L555)				
	in	mm	in	mm	lb/ft	kg/m	in	mm	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt	Std	Alt
4	4 1/2	114.3	0.172	4.4	7.96	11.92	4.156	105.5	Std	—	1380	1610	1930	2110	2390	2570	2750	2980	3000	3000			
									Alt	—	1720	2010	2410	2640	2980	3210	3440	3730	4010	4590			
			0.188	4.8	8.67	12.96	4.124	104.7	Std	1200	1500	1750	2110	2310	2610	2810	3000	3000	3000	3000			
									Alt	—	1880	2190	2630	2880	3260	3510	3760	4070	4390	5010			
			0.203	5.2	9.32	13.99	4.094	103.9	Std	—	1620	1890	2270	2490	2810	3000	3000	3000	3000	3000			
									Alt	—	2030	2370	2840	3110	3520	3790	4060	4400	4740	5410			
			0.219	5.6	10.02	15.01	4.062	103.1	Std	1200	1750	2040	2450	2690	3000	3000	3000	3000	3000	3000			
									Alt	—	2190	2560	3070	3360	3800	4090	4380	4750	510	5840			
			0.237	6.0	10.80	16.02	4.026	102.3	Std	1200	1900	2210	2650	2910	3000	3000	3000	3000	3000	3000			
									Alt	—	2370	2770	3320	3630	4110	4420	4740	5140	5530	6320			
			0.250	6.4	11.36	17.03	4.000	101.5	Std	—	2000	2330	2800	3000	3000	3000	3000	3000	3000	3000			
									Alt	—	2500	2800	3500	3830	4330	4670	5000	5420	5830	6670			
0.281	7.1	12.67	18.77	3.938	100.1	Std	—	2250	2620	3000	3000	3000	3000	3000	3000	3000	3000						
						Alt	—	2800	2800	3930	4310	4870	5250	5620	6090	6560	7260						
0.312	7.9	13.97	20.73	3.876	98.5	Std	—	2500	2800	3000	3000	3000	3000	3000	3000	3000	3000						
						Alt	—	2800	2800	4370	4780	5410	5820	6240	6760	7260	7260						
0.337	8.6	15.00	22.42	3.826	97.1	Std	1700	2700	2800	3000	3000	3000	3000	3000	3000	3000	3000						
						Alt	—	2800	2800	4720	5170	5840	6290	6740	7260	7260	7260						
0.438	11.1	19.02	28.25	3.624	92.1	Std	—	2800	2800	3000	3000	3000	3000	3000	3000	3000	3000						
						Alt	—	2800	2800	6130	6720	7260	7260	7260	7260	7260	7260						
5	9/16	141.3	0.083	2.1	4.86	7.21	5.397	137.1	Std	—	540	630	750	820	930	1000	1070	1160	1250	1430			
									Alt	—	670	780	940	1030	1160	1250	1340	1450	1570	1790			
			0.125	3.2	7.27	10.90	5.313	134.9	Std	670	810	940	1130	1240	1400	1510	1620	1750	1890	2160			
									Alt	—	1010	1180	1420	1550	1750	1890	2020	2190	2360	2700			
			0.156	4.0	9.02	13.54	5.251	133.3	Std	840	1010	1180	1410	1550	1750	1880	2020	2190	2360	2690			



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)														
	in	mm	in	mm	lb/ft	kg/m	in	mm	Std	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade			
										A (L175)	B (L210)	× 42 (L245)	× 46 (L290)	× 52 (L360)	× 56 (L390)	× 60 (L415)	× 65 (L450)	× 70 (L485)	× 80 (L555)				
6	6 5/8	168.3	0.083	2.1	5.80	8.61	6.459	164.1	Std	450	530	790	860	980	1050	1130	1220	1320	1500				
									Alt	560	660	790	860	980	1050	1130	1220	1320	1500				
			0.109	2.8	7.59	11.43	6.407	162.7	Std	590	690	1040	1140	1280	1380	1480	1600	1730	1970				
									Alt	740	860	1040	1140	1280	1380	1480	1600	1730	1970				
			0.125	3.2	8.69	13.03	6.375	161.9	Std	680	790	1190	1300	1470	1580	1700	1840	1980	2260				
									Alt	850	990	1190	1300	1470	1580	1700	1840	1980	2260				
			0.141	3.6	9.77	14.62	6.343	161.1	Std	770	890	1340	1470	1660	1790	1920	2080	2230	2550				
									Alt	960	1120	1340	1470	1660	1790	1920	2080	2230	2550				
			0.156	4.0	10.79	16.21	6.313	160.3	Std	850	990	1480	1620	1840	1980	2120	2300	2470	2830				
									Alt	1060	1240	1480	1620	1840	1980	2120	2300	2470	2830				
			0.172	4.4	11.87	17.78	6.281	159.5	Std	930	1090	1640	1790	2030	2180	2340	2530	2730	3000				
									Alt	1170	1360	1640	1790	2030	2180	2340	2530	2730	3120				
			0.188	4.8	12.94	19.35	6.249	158.7	Std	1020	1190	1790	1960	2210	2380	2550	2770	2980	3000				
									Alt	1280	1490	1790	1960	2210	2380	2550	2770	2980	3410				
			0.203	5.2	13.94	20.91	6.219	157.9	Std	1100	1290	1930	2110	2390	2570	2760	2990	3000	3000				
									Alt	1380	1610	1930	2110	2390	2570	2760	2990	3220	3680				
			0.219	5.6	15.00	22.47	6.187	157.1	Std	1190	1390	2080	2280	2580	2780	2980	3000	3000	3000				
									Alt	1490	1740	2080	2280	2580	2780	2980	3220	3470	3970				
			0.250	6.4	17.04	25.55	6.125	155.5	Std	1360	1580	2380	2600	2940	3000	3000	3000	3000	3000				
									Alt	1700	1980	2380	2600	2940	3170	3400	3680	3960	4530				
0.280	7.1	18.99	28.22	6.065	154.1	Std	1520	1780	2660	2920	3000	3000	3000	3000	3000	3000							
						Alt	1900	2220	2660	2920	3300	3550	3800	4120	4440	5070							
0.312	7.9	21.06	31.25	6.001	152.5	Std	1700	1980	2970	3000	3000	3000	3000	3000	3000	3000							
						Alt	2120	2470	2970	3250	3670	3960	4240	4590	4940	5650							
0.344	8.7	23.10	34.24	5.937	150.9	Std	1870	2180	3000	3000	3000	3000	3000	3000	3000	3000							
						Alt	2340	2730	3270	3580	4050	4360	4670	5060	5450	6230							
0.375	9.5	25.05	37.20	5.875	149.3	Std	2040	2360	3000	3000	3000	3000	3000	3000	3000	3000							
						Alt	2550	2800	3570	3910	4420	4750	5090	5520	5940	6790							
0.432	11.0	28.60	42.67	5.761	146.3	Std	2350	2740	3000	3000	3000	3000	3000	3000	3000	3000							
						Alt	2800	2800	4110	4500	5090	5480	5870	6360	6850	7260							

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)														
	in	mm	in	mm	lb/ft	kg/m	in	mm	Std	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade			
										A (L175)	B (L210)	× 42 (L245)	× 46 (L290)	× 52 (L360)	× 56 (L390)	× 60 (L415)	× 65 (L450)	× 70 (L485)	× 80 (L555)				
8	8 5/8	219.1	0.125	3.2	11.36	17.04	8.375	212.7	Std	520	610	910	1000	1130	1220	1300	1410	1520	1740				
									Alt	650	760	910	1000	1130	1220	1300	1410	1520	1740				
			0.156	4.0	14.12	21.22	8.313	211.1	Std	650	760	1140	1250	1410	1520	1630	1760	1900	2170				
									Alt	810	950	1140	1250	1410	1520	1630	1760	1900	2170				
			0.188	4.8	16.96	25.37	8.249	209.5	Std	780	920	1370	1500	1700	1830	1960	2130	2290	2620				
									Alt	980	1140	1370	1500	1700	1820	1960	2130	2290	2620				
			0.203	5.2	18.28	27.43	8.219	208.7	Std	850	990	1480	1620	1840	1980	2120	2290	2470	2820				
									Alt	1060	1240	1480	1620	1840	1980	2120	2290	2470	2820				
			0.219	5.6	19.68	29.48	8.187	207.9	Std	910	1070	1600	1750	1980	2130	2290	2480	2670	3000				
									Alt	1140	1330	1600	1750	1980	2130	2290	2480	2670	3050				
			0.250	6.4	22.38	33.57	8.125	206.3	Std	1040	1220	1830	2000	2260	2430	2610	2830	3000	3000				
									Alt	1300	1520	1830	2000	2260	2430	2610	2830	3040	3480				
			0.277	7.0	24.72	36.61	8.071	205.1	Std	1160	1350	2020	2220	2510	2700	2890	3000	3000	3000				
									Alt	1450	1690	2020	2220	2510	2700	2890	3130	3370	3850				
			0.312	7.9	27.73	41.14	8.001	203.3	Std	1300	1520	2280	2500	2820	3000	3000	3000	3000	3000				
									Alt	1630	1900	2280	2500	2820	3040	3260	3530	3800	4340				
			0.322	8.2	28.58	42.65	7.981	202.7	Std	1340	1570	2350	2580	2910	3000	3000	3000	3000	3000				
									Alt	1680	1960	2350	2580	2910	3140	3360	3640	3920	4480				
			0.344	8.7	30.45	45.14	7.937	201.7	Std	1440	1680	2510	2750	3000	3000	3000	3000	3000	3000				
									Alt	1790	2090	2510	2750	3110	3350	3590	3890	4190	4790				
0.375	9.5	33.07	49.10	7.875	200.1	Std	1570	1830	2740	3000	3000	3000	3000	3000	3000	3000							
						Alt	1960	2260	2740	3000	3390	3650	3910	4240	4570	5220							
0.438	11.1	38.33	56.94	7.749	196.9	Std	1830	2130	3000	3000	3000	3000	3000	3000	3000	3000							
						Alt	2290	2670	3200	3500	3960	4270	4570	4950	5330	6090							
0.500	12.7	43.43	64.64	7.625	193.7	Std	2090	2430	3000	3000	3000	3000	3000	3000	3000	3000							
						Alt	2610	2800	3650	4000	4520	4870	5220	5650	6090	6960							

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)												
	in	mm	in	mm	lb/ft	kg/m	in	mm	Grade A	Grade B	Grade ×42	Grade ×46	Grade ×52	Grade ×56	Grade ×60	Grade ×65	Grade ×70	Grade ×80			
									(L175)	(L210)	(L245)	(L290)	(L360)	(L390)	(L415)	(L450)	(L485)	(L555)			
10	10 3/4	273.1	0.156	4.0	17.67	26.54	10.438	265.1	Std	520	610	1040	1130	1280	1380	1480	1600	1730	1970		
									Alt	650	760	1040	1130	1280	1380	1480	1600	1730	1970		
			0.188	4.8	21.23	31.76	10.374	263.5	Std	630	730	1250	1370	1550	1660	1780	1930	2080	2380		
									Alt	790	920	1250	1370	1550	1660	1780	1930	2080	2380		
			0.203	5.2	22.89	34.35	10.344	262.7	Std	680	790	1350	1480	1670	1800	1930	2090	2250	2570		
									Alt	850	990	1350	1480	1670	1800	1930	2090	2250	2570		
			0.219	5.6	24.65	36.94	10.312	261.9	Std	730	860	1450	1590	1800	1940	2080	2250	2420	2770		
									Alt	920	1070	1450	1590	1800	1940	2080	2250	2420	2770		
			0.250	6.4	28.06	42.09	10.250	260.3	Std	840	980	1660	1820	2060	2210	2370	2570	2770	3000		
									Alt	1050	1220	1660	1820	2060	2210	2370	2570	2770	3160		
			0.279	7.1	31.23	46.57	10.192	258.9	Std	930	1090	1850	2030	2290	2470	2650	2870	3000	3000		
									Alt	1170	1360	1850	2030	2290	2470	2650	2870	3090	3530		
			0.307	7.8	34.27	51.03	10.136	257.5	Std	1030	1200	2040	2230	2520	2720	2910	3000	3000	3000		
									Alt	1290	1500	2040	2230	2520	2720	2910	3160	3400	3880		
0.344	8.7	38.27	56.72	10.062	255.7	Std	1150	1340	2280	2500	2830	3000	3000	3000	3000	3000					
						Alt	1440	1680	2280	2500	2830	3050	3260	3540	3810	4350					
0.365	9.3	40.52	60.50	10.020	254.5	Std	1220	1430	2420	2660	3000	3000	3000	3000	3000	3000					
						Alt	1530	1780	2420	2660	3000	3230	3460	3750	4040	4620					
0.438	11.1	48.28	71.72	9.874	250.9	Std	1470	1710	2910	3000	3000	3000	3000	3000	3000	3000					
						Alt	1830	2140	2910	3190	3600	3880	4160	4500	4850	5540					
0.500	12.7	54.79	81.55	9.750	247.7	Std	1670	1950	3000	3000	3000	3000	3000	3000	3000	3000					
						Alt	2090	2440	3320	3640	4110	4430	4740	5140	5530	6330					
12	12 3/4	323.9	0.172	4.4	23.13	34.67	12.406	315.1	Std	490	570	960	1050	1190	1280	1380	1490	1610	1830		
									Alt	610	710	960	1050	1190	1280	1380	1490	1610	1830		
			0.188	4.8	25.25	37.77	12.374	314.3	Std	530	620	1050	1150	1300	1400	1500	1630	1750	2010		
									Alt	660	770	1050	1150	1300	1400	1500	1630	1750	2010		
			0.203	5.2	27.23	40.87	12.344	313.5	Std	570	670	1140	1250	1410	1520	1620	1760	1890	2170		
									Alt	720	840	1140	1250	1410	1520	1620	1760	1890	2170		
			0.219	5.6	29.34	43.96	12.312	312.7	Std	620	720	1230	1340	1520	1640	1750	1900	2040	2340		
									Alt	770	900	1230	1340	1520	1640	1750	1900	2040	2340		
			0.250	6.4	33.41	50.11	12.250	311.1	Std	710	820	1400	1530	1730	1870	2000	2170	2330	2670		
									Alt	880	1030	1400	1530	1730	1870	2000	2170	2330	2670		

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)											
	in	mm	in	mm	lb/ft	kg/m	in	mm	Grade A	Grade B	Grade ×42	Grade ×46	Grade ×52	Grade ×56	Grade ×60	Grade ×65	Grade ×70	Grade ×80		
									(L175)	(L210)	(L245)	(L290)	(L360)	(L390)	(L415)	(L450)	(L485)	(L555)		
12	12 3/4	323.9	0.281	7.1	37.46	55.47	12.188	309.7	Std	790	930	1570	1720	1950	2100	2250	2440	2620	3000	
									Alt	990	1160	1570	1720	1950	2100	2250	2440	2620	3000	
			0.312	7.9	41.48	61.56	12.126	308.1	Std	880	1030	1750	1910	2160	2330	2500	2700	2910	3000	
									Alt	1100	1280	1750	1910	2160	2330	2500	2700	2910	3330	
			0.330	8.4	43.81	65.35	12.090	307.1	Std	930	1090	1850	2020	2290	2460	2640	2860	3000	3000	
									Alt	1160	1360	1850	2110	2290	2460	2640	2860	3080	3520	
			0.344	8.7	45.62	67.62	12.062	306.5	Std	970	1130	1930	2110	2390	2570	2750	2980	3000	3000	
									Alt	1210	1420	1930	2300	2390	2570	2750	2980	3210	3670	
			0.375	9.5	49.61	73.65	12.000	304.9	Std	1060	1240	2100	2300	2600	2800	3000	3000	3000	3000	
									Alt	1320	1540	2100	2490	2600	2800	3000	3250	3500	4000	
			0.406	10.3	53.57	79.65	11.938	303.3	Std	1150	1340	2270	2490	2810	3000	3000	3000	3000	3000	
									Alt	1430	1670	2270	2490	2810	3030	3250	3520	3790	4330	
			0.438	11.1	57.65	85.62	11.874	301.7	Std	1240	1440	2450	2690	3000	3000	3000	3000	3000	3000	
									Alt	1550	1800	2450	2690	3040	3270	3500	3800	4090	4670	
0.500	12.7	65.48	97.46	11.750	298.5	Std	1410	1650	2800	3000	3000	3000	3000	3000	3000	3000				
						Alt	1760	2060	2800	3070	3470	3730	4000	4330	4670	5330				
0.562	14.3	73.22	109.18	11.626	295.3	Std	1590	1850	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	1980	2310	3150	3450	3900	4200	4500	4870	5250	5990				
0.625	15.9	81.01	120.76	11.500	292.1	Std	1760	2060	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	2210	2570	3500	3830	4330	4670	5000	5420	5830	6670				
0.688	17.5	88.71	132.23	11.374	288.9	Std	1940	2270	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	2430	2800	3850	4220	4770	5140	5500	5960	6420	7260				
0.750	19.1	96.21	143.56	11.250	285.7	Std	2120	2470	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	2650	2800	4200	4600	5200	5600	6000	6500	7000	7260				
14	14	355.6	0.188	4.8	27.76	41.52	13.624	346.0	Std	480	560	960	1050	1190	1280	1370	1480	1600	1830	
									Alt	600	710	960	1050	1190	1280	1370	1480	1600	1830	
			0.203	5.2	29.94	44.93	13.594	345.2	Std	520	610	1040	1130	1280	1380	1480	1600	1730	1970	
									Alt	650	760	1040	1130	1280	1380	1480	1600	1730	1970	
			0.210	5.3	30.96	45.78	13.580	345.0	Std	540	630	1070	1170	1330	1430	1530	1660	1790	2040	
									Alt	680	790	1070	1170	1330	1430	1530	1660	1790	2040	
			0.219	5.6	32.26	48.33	13.562	344.4	Std	560	660	1120	1220	1380	1490	1600	1730	1860	2130	
									Alt	700	820	1120	1220	1380	1490	1600	1730	1860	2130	
			0.250	6.4	36.75	55.11	13.500	342.8	Std	640	750	1280	1400	1580	1700	1820	1970	2130	2430	
									Alt	800	940	1280	1400	1580	1700	1820	1970	2130	2430	
			0.281	7.1	41.21	61.02	13.438	341.4	Std	720	840	1430	1570	1770	1910	2050	2220	2390	2730	
									Alt	900	1050	1430	1570	1770	1910	2050	2220	2390	2730	

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)																	
									Grade A (L175)	Grade B (L210)	Grade x42 (L245)	Grade x46 (L290)	Grade x52 (L360)	Grade x56 (L390)	Grade x60 (L415)	Grade x65 (L450)	Grade x70 (L485)	Grade x80 (L555)								
	in	mm	in	mm	lb/ft	kg/m	in	mm																		
14	14.000	355.6	0.312	7.9	45.65	67.74	13.376	339.8	Std	800	940	1590	1740	1970	2120	2270	2460	2650	3000							
									Alt	1000	1170	1590	1740	1970	2120	2270	2460	2650	3030							
			0.344	8.7	50.22	74.42	13.312	338.2	Std	880	1030	1750	1920	2170	2340	2510	2720	2920	3000							
									Alt	1110	1290	1750	1920	2170	2340	2510	2720	2920	3340							
			0.375	9.5	54.62	81.08	13.250	336.6	Std	960	1130	1910	2090	2370	2550	2730	2960	3000	3000							
									Alt	1210	1410	1910	2090	2370	2550	2730	2960	3190	3640							
			0.406	10.3	59.00	87.71	13.188	335.0	Std	1040	1220	2070	2270	2560	2760	2960	3000	3000	3000							
									Alt	1310	1520	2070	2270	2560	2760	2960	3200	3450	3940							
			0.438	11.1	63.50	94.30	13.124	333.4	Std	1130	1310	2230	2450	2770	2980	3000	3000	3000	3000							
									Alt	1410	1640	2230	2450	2770	2980	3190	3460	3720	4250							
			0.469	11.9	67.84	100.86	13.062	331.8	Std	1210	1410	2390	2620	2960	3000	3000	3000	3000	3000							
									Alt	1510	1760	2390	2620	2960	3190	3420	3700	3990	4560							
			0.500	12.7	72.16	107.39	13.000	330.2	Std	1290	1500	2550	2790	3000	3000	3000	3000	3000	3000							
									Alt	1610	1880	2550	2790	3160	3400	3640	3950	4250	4860							
			0.562	14.3	80.73	120.36	12.876	327.0	Std	1450	1690	2870	3000	3000	3000	3000	3000	3000	3000							
									Alt	1810	2110	2870	3140	3550	3820	4090	4440	4780	5460							
0.625	15.9	89.36	133.19	12.750	323.8	Std	1610	1880	3000	3000	3000	3000	3000	3000	3000	3000										
						Alt	2010	2340	3190	3490	3950	4250	4550	4930	5310	6070										
0.688	17.5	97.91	145.91	12.624	320.6	Std	1770	2060	3000	3000	3000	3000	3000	3000	3000	3000										
						Alt	2210	2580	3510	3840	4340	4680	5010	5430	5850	6680										
0.750	19.1	106.23	158.49	12.500	317.4	Std	1930	2250	3000	3000	3000	3000	3000	3000	3000	3000										
						Alt	2410	2800	3830	4190	4740	5100	5460	5920	6380	7260										
16	16.000	406.4	0.188	4.8	31.78	47.54	15.624	396.8	Std	420	490	840	920	1040	1120	1200	1300	1400	1600							
									Alt	530	620	840	920	1040	1120	1200	1300	1400	1600							
			0.203	5.2	34.28	51.45	15.594	396.0	Std	460	530	910	990	1120	1210	1290	1400	1510	1730							
									Alt	570	670	910	990	1120	1210	1290	1400	1510	1730							
			0.219	5.6	36.95	55.35	15.562	395.2	Std	490	570	980	1070	1210	1300	1400	1510	1630	1860							
									Alt	620	720	980	1070	1210	1300	1400	1510	1630	1860							
			0.250	6.4	42.09	63.13	15.500	393.6	Std	560	660	1120	1220	1380	1490	1590	1730	1860	2130							
									Alt	700	820	1120	1220	1380	1490	1590	1730	1860	2130							
			0.281	7.1	47.22	69.91	15.438	392.2	Std	630	740	1250	1370	1550	1670	1790	1940	2090	2390							
									Alt	790	920	1250	1370	1550	1670	1790	1940	2090	2390							
			0.312	7.9	52.32	77.63	15.376	390.6	Std	700	820	1390	1520	1720	1860	1990	2150	2320	2650							
									Alt	880	1020	1390	1520	1720	1860	1990	2150	2320	2650							
			0.344	8.7	57.57	85.32	15.312	389.0	Std	770	900	1540	1680	1900	2050	2190	2380	2560	2920							
									Alt	970	1130	1540	1680	1900	2050	2190	2380	2560	2920							

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)																	
									Grade A (L175)	Grade B (L210)	Grade x42 (L245)	Grade x46 (L290)	Grade x52 (L360)	Grade x56 (L390)	Grade x60 (L415)	Grade x65 (L450)	Grade x70 (L485)	Grade x80 (L555)								
	in	mm	in	mm	lb/ft	kg/m	in	mm																		
16	16.000	406.4	0.375	9.5	62.64	92.98	15.250	387.4	Std	840	980	1670	1830	2070	2230	2390	2590	2790	3000							
									Alt	1050	1230	1670	1830	2070	2230	2390	2590	2790	3190							
			0.406	10.3	67.68	100.61	15.188	385.8	Std	910	1070	1810	1980	2240	2420	2590	2800	3000	3000							
									Alt	1140	1330	1810	1980	2240	2420	2590	2800	3020	3450							
			0.438	11.1	72.86	108.20	15.124	384.2	Std	990	1150	1950	2140	2420	2610	2790	3000	3000	3000							
									Alt	1230	1440	1950	2140	2590	2610	2790	3020	3260	3630							
			0.469	11.9	77.87	115.77	15.062	382.6	Std	1060	1230	2090	2290	2760	2790	2990	3000	3000	3000							
									Alt	1320	1540	2090	2290	2760	2790	2990	3240	3490	3630							
			0.500	12.7	82.85	123.30	15.000	381.0	Std	1130	1310	2230	2440	3000	2980	3000	3000	3000	3000							
									Alt	1410	1640	2230	2440	3110	2980	3190	3450	3630	3630							
			0.562	14.3	92.75	138.27	14.876	377.8	Std	1260	1480	2510	2750	3000	3000	3000	3000	3000	3000							
									Alt	1580	1840	2510	2750	3450	3340	3580	3630	3630	3630							
			0.625	15.9	102.72	153.11	14.750	374.6	Std	1410	1640	2790	3000	3000	3000	3000	3000	3000	3000							
									Alt	1760	2050	2790	3050	3630	3630	3630	3630	3630	3630							
			0.688	17.5	112.62	167.83	14.624	371.4	Std	1550	1810	3000	3000	3000	3000	3000	3000	3000	3000							
									Alt	1940	2260	3070	3360	3630	3630	3630	3630	3630	3630							
0.750	19.1	122.27	184.42	14.500	368.2	Std	1690	1970	3000	3000	3000	3000	3000	3000	3000	3000										
						Alt	2110	2460	3350	3630	3630	3630	3630	3630	3630	3630										
18	18.000	457.0	0.188	4.8	35.80	53.53	17.624	447.4	Std	380	440	750	820	920	990	1070	1150	1240	1420							
									Alt	470	550	750	820	920	990	1070	1150	1240	1420							
			0.219	5.6	41.63																					



API 5L Line Pipe

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight (Wpe)		Calculated Inside Diameter(d)		Hydrostatic test Pressure(psi)													
	in	mm	in	mm	lb/ft	kg/m	in	mm	Grade													
									A (L175)	B (L210)	×42 (L245)	×46 (L290)	×52 (L360)	×56 (L390)	×60 (L415)	×65 (L450)	×70 (L485)	×80 (L555)				
22	22.000	559.0	0.625	15.9	142.81	212.95	20.750	527.2	Std	1020	1190	2150	2350	2660	2860	3000	3000	3000	3000			
									Alt	1280	1490	2150	2350	2660	2860	3070	3320	3580	3630			
			0.688	17.5	156.74	233.68	20.624	524.0	Std	1130	1310	2360	2590	2930	3000	3000	3000	3000	3000			
									Alt	1410	1640	2360	2590	2930	3150	3380	3630	3630	3630			
			0.750	19.1	170.37	254.30	20.500	520.8	Std	1230	1430	2580	2820	3000	3000	3000	3000	3000	3000			
									Alt	1530	1790	2580	2820	3190	3630	3630	3630	3630	3630			
24	24.000	610.0	0.250	6.4	63.47	95.26	23.500	597.2	Std	380	440	790	860	980	1050	1130	1220	1310	1500			
									Alt	470	550	790	860	980	1050	1130	1220	1310	1500			
			0.281	7.1	71.25	105.56	23.438	595.8	Std	420	490	890	970	1100	1180	1260	1370	1480	1690			
									Alt	530	610	890	970	1100	1180	1260	1370	1480	1690			
			0.312	7.9	79.01	117.30	23.376	594.2	Std	470	550	980	1080	1220	1310	1400	1520	1640	1870			
									Alt	590	680	980	1080	1220	1310	1400	1520	1640	1870			
			0.344	8.7	86.99	129.00	23.312	592.6	Std	520	600	1080	1190	1340	1440	1550	1680	1810	2060			
									Alt	650	750	1080	1190	1340	1440	1550	1680	1810	2060			
			0.375	9.5	94.71	140.68	23.250	591.0	Std	560	660	1180	1290	1460	1580	1690	1830	1970	2250			
									Alt	700	820	1180	1290	1460	1580	1690	1830	1970	2250			
			0.406	10.3	102.40	152.32	23.188	589.4	Std	610	710	1280	1400	1580	1710	1830	1980	2130	2440			
									Alt	760	890	1280	1400	1580	1710	1830	1980	2130	2440			
			0.438	11.1	110.32	163.93	23.124	587.8	Std	660	770	1380	1510	1710	1840	1970	2140	2300	2630			
									Alt	820	960	1380	1510	1710	1840	1970	2140	2300	2630			
			0.469	11.9	117.98	175.51	23.062	586.2	Std	700	820	1480	1620	1830	1970	2110	2290	2460	2810			
									Alt	880	1030	1480	1620	1830	1970	2110	2290	2460	2810			
			0.500	12.7	125.61	187.06	23.000	584.6	Std	750	880	1580	1730	1950	2100	2250	2440	2630	3000			
									Alt	940	1090	1580	1730	1950	2100	2250	2440	2630	3000			
			0.562	14.3	140.81	210.07	22.876	581.4	Std	840	980	1770	1940	2190	2360	2530	2740	2950	3000			
									Alt	1050	1230	1770	1940	2190	2360	2530	2740	2950	3370			
			24	24.000	610.0	0.625	15.9	156.17	232.94	22.750	578.2	Std	940	1090	1970	2160	2440	2630	2810	3000	3000	3000
												Alt	1170	1370	1970	2160	2440	2630	2810	3050	3280	3630
						0.688	17.5	171.45	255.69	22.624	575.0	Std	1030	1200	2170	2370	2680	2890	3000	3000	3000	3000
												Alt	1290	1510	2170	2370	2680	2890	3100	3350	3610	3630
0.750	19.1	186.41				278.32	22.500	571.8	Std	1130	1310	2360	2590	2930	3000	3000	3000	3000	3000			
									Alt	1410	1640	2360	2590	2930	3150	3380	3630	3630	3630			
0.812	20.6	201.28				299.41	22.376	568.8	Std	1220	1420	2560	2800	3000	3000	3000	3000	3000	3000			
									Alt	1520	1780	2560	2800	3170	3630	3630	3630	3630	3630			
0.875	22.2	216.31				321.79	22.250	565.6	Std	1310	1530	2760	3000	3000	3000	3000	3000	3000	3000			
									Alt	1640	1910	2760	3020	3410	3630	3630	3630	3630	3630			

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



ASTM A53 Black and Hot-Dipped, Zinc-Coated Welded Steel Pipes

1) Dimensions, Weights, and Test Pressures for Plain End Pipe

NPS Designator	DN Designator	Outside Diameter, in. [mm]	Nominal wall Thickness, in. [mm]	Nominal weight[Mass] per Unit Length, Plain End, lb/ft [kg/m]	Weight Class	Schedule No.	Test Pressure, psi [kPa]	
							Grade A	Grade B
1/2	15	0.840 [21.3]	0.109 [2.77]	0.85 [127]	STD	40	700 [4800]	700 [4800]
			0.147 [3.73]	1.09 [162]	XS	80	850 [5900]	850 [5900]
			0.188 [4.78]	1.31 [195]	--	160	900 [6200]	900 [6200]
			0.294 [7.47]	1.72 [255]	XXS	--	1000 [6900]	1000 [6900]
3/4	20	1.050 [26.7]	0.113 [2.87]	1.13 [169]	STD	40	700 [4800]	700 [4800]
			0.154 [3.91]	1.48 [220]	XS	80	850 [5900]	850 [5900]
			0.219 [5.56]	1.95 [290]	--	160	950 [6500]	950 [6500]
			0.308 [7.82]	2.44 [364]	XXS	--	1000 [6900]	1000 [6900]
1	25	1.315 [33.4]	0.113 [3.38]	1.68 [250]	STD	40	700 [4800]	700 [4800]
			0.179 [4.55]	2.17 [324]	XS	80	850 [5900]	850 [5900]
			0.250 [6.35]	2.85 [424]	--	160	900 [6500]	900 [6500]
			0.358 [9.90]	3.66 [545]	XXS	--	1000 [6900]	1000 [6900]
1 1/4	32	1.660 [42.2]	0.140 [3.56]	2.27 [339]	STD	40	1200 [8300]	1300 [9000]
			0.191 [4.85]	3.00 [447]	XS	80	1800 [12400]	1900 [13100]
			0.250 [6.35]	3.77 [561]	--	160	1900 [13100]	2000 [13800]
			0.382 [9.70]	5.22 [777]	XXS	--	2200 [15200]	2300 [15900]
1 1/2	40	1.900 [48.3]	0.145 [3.68]	2.72 [405]	STD	40	2300 [15900]	1300 [9000]
			0.200 [5.08]	3.63 [541]	XS	80	2500 [17200]	1900 [13100]
			0.281 [7.14]	4.86 [725]	--	160	2500 [17200]	2050 [14100]
			0.400 [10.16]	6.41 [956]	XXS	--	2500 [17200]	2300 [15900]
2	50	2.375 [60.3]	0.154 [3.91]	3.66 [544]	STD	40	2300 [15900]	2500 [17200]
			0.218 [5.54]	5.03 [748]	XS	80	2500 [17200]	2500 [17200]
			0.344 [8.74]	7.47 [11.11]	--	160	2500 [17200]	2500 [17200]
			0.436 [11.07]	9.04 [1344]	XXS	--	2500 [17200]	2500 [17200]
2 1/2	65	2.875 [73.0]	0.203 [5.16]	5.80 [863]	STD	40	2500 [17200]	2500 [17200]
			0.276 [7.01]	7.67 [11.41]	XS	80	2500 [17200]	2500 [17200]
			0.375 [9.52]	10.02 [1490]	--	160	2500 [17200]	2500 [17200]
			3	80	3.500 [88.9]	0.125 [3.18]	4.51 [672]	--	--	1290 [8900]	1500 [10300]
0.156 [3.96]	5.58 [829]	--				--	1600 [11000]	1870 [12900]
0.188 [4.78]	6.66 [992]	--				--	1930 [13330]	2260 [15600]
0.216 [5.49]	7.58 [1129]	STD				40	2220 [15300]	2500 [17200]
3 1/2	90	4.000 [101.6]	0.250 [6.35]	8.69 [12.93]	--	--	2500 [17200]	2500 [17200]
			0.281 [7.14]	9.67 [14.40]	--	--	2500 [17200]	2500 [17200]
			0.300 [7.62]	10.26 [15.27]	XS	80	2500 [17200]	2500 [17200]
			0.438 [11.13]	14.34 [2135]	--	160	2500 [17200]	2500 [17200]
4	100	4.500 [114.3]	0.125 [3.18]	5.18 [772]	--	--	1120 [7700]	1310 [19000]
			0.156 [3.96]	6.41 [953]	--	--	1400 [6700]	1640 [11300]
			0.188 [4.78]	7.66 [1141]	--	--	1690 [11700]	1970 [13600]
			0.226 [5.74]	9.12 [1357]	STD	40	2030 [14000]	2370 [16300]
4	100	4.500 [114.3]	0.250 [6.35]	10.02 [1492]	--	--	2250 [15500]	2500 [17200]
			0.281 [7.14]	11.17 [16.63]	--	--	2500 [17200]	2500 [17200]
			0.318 [8.08]	12.52 [1863]	XS	80	2800 [19300]	2800 [19300]
			0.125 [3.18]	5.58 [871]	--	--	1000 [6900]	1170 [8100]
4	100	4.500 [114.3]	0.156 [3.96]	7.24 [1078]	--	--	1250 [8600]	1640 [10100]
			0.188 [4.78]	8.67 [1291]	--	--	1500 [10300]	1750 [12100]
			0.219 [5.56]	10.02 [1491]	--	--	1750 [12100]	2040 [14100]
			0.237 [6.02]	10.80 [1607]	STD	40	1900 [13100]	2210 [15200]
4	100	4.500 [114.3]	0.250 [6.35]	11.36 [1690]	--	--	2000 [13800]	2330 [16100]
			0.281 [7.14]	12.67 [1887]	--	--	2250 [15100]	2620 [18100]
			0.312 [7.92]	13.97 [2078]	--	--	2500 [17200]	2800 [19300]

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



ASTM A53

NPS Designator	DN Designator	Outside Diameter, in. [mm]	Nominal wall Thickness, in. [mm]	Nominal weight [Mass] per Unit Length, Plain End, lb/ft [kg/m]	Weight Class	Schedule No.	Test Pressure, psi [kPa]				
							Grade A	Grade B			
4	100	4.500 [114.3]	0.337 [8.56] 0.438 [11.13]	15.00 [22.32] 19.02 [28.32]	XS ..	80 120	2700 [18600]	2800 [19300]			
							2800 [19300]	2800 [19300]			
5	125	5.563 [141.3]	0.156 [3.96]	9.02 [13.41]	..	..	1010 [7000]	1180 [8100]	
			0.188 [4.78]	10.80 [16.09]	..	..	1220 [8400]	1420 [9800]	
			0.219 [5.56]	12.51 [18.61]	..	..	1420 [9800]	1650 [11400]	
			0.258 [6.55]	14.63 [21.77]	STD	40	1670 [11500]	1950 [13400]			
			0.281 [7.14]	15.87 [23.62]	..	..	1820 [12500]	2120 [14600]	
			0.312 [7.92]	17.51 [26.05]	..	..	2020 [13900]	2360 [16300]	
			0.344 [8.74]	19.19 [28.57]	..	..	2230 [15400]	2600 [17900]	
			0.375 [9.52]	20.80 [30.94]	XS	80	2430 [16800]	2800 [19300]			
			0.438 [11.13]	27.06 [40.28]	..	120	2800 [19300]	2800 [19300]			
			0.188 [4.78]	12.094 [19.27]	..	..	1020 [7000]	1190 [8200]	
			0.219 [5.56]	15.00 [22.31]	..	..	1190 [8200]	1390 [9600]	
			0.250 [6.35]	17.04 [25.36]	..	..	1360 [9400]	1580 [10900]	
			0.280 [7.11]	18.99 [28.26]	STD	40	1520 [10500]	1780 [13000]			
			0.312 [7.92]	21.06 [31.32]	..	..	1700 [11700]	1980 [13700]	
0.344 [8.74]	23.10 [34.39]	..	..	1870 [12900]	2180 [15000]				
0.375 [9.52]	25.05 [37.28]	..	..	2040 [14100]	2380 [16400]				
0.432 [10.97]	28.60 [42.56]	XS	80	2350 [16200]	2740 [18900]						
8	200	8.625 [219.1]	0.188 [4.78]	16.96 [25.26]	..	..	780 [5400]	920 [6300]	
			0.203 [5.16]	18.28 [27.22]	..	..	850 [5900]	1000 [6900]	
			0.219 [5.56]	19.68 [29.28]	..	..	910 [6300]	1070 [7400]	
			0.250 [6.35]	22.38 [33.31]	..	20	1040 [7200]	1220 [8400]			
			0.277 [7.04]	24.72 [36.31]	..	30	1160 [7800]	1350 [9300]			
			0.312 [7.92]	27.73 [44.24]	..	..	1300 [9000]	1520 [10500]	
			0.322 [8.18]	28.58 [42.55]	STD	40	1340 [9200]	1570 [10800]			
			0.344 [8.74]	30.45 [45.34]	..	..	1440 [9900]	1680 [11600]	
			0.375 [9.52]	33.07 [49.20]	..	..	1570 [10800]	1830 [12600]	
			0.406 [10.31]	35.67 [53.08]	..	60	1700 [11700]	2000 [13800]			
			0.438 [11.13]	38.33 [57.08]	..	..	1830 [12600]	2130 [14700]	
			0.500 [12.70]	43.43 [64.64]	XS	80	2090 [14400]	2430 [16800]			
			10	250	10.750 [273.0]	0.188 [4.78]	21.23 [31.62]	630 [4300]	730 [5000]
						0.203 [5.16]	22.89 [34.08]	680 [4700]	800 [5500]
0.219 [5.56]	24.65 [36.67]	..				..	730 [5000]	860 [5900]
0.250 [6.35]	28.06 [41.75]	..				20	840 [5800]	980 [6800]			
0.279 [7.09]	31.23 [46.49]	..				..	930 [6400]	1080 [7500]
0.307 [7.80]	34.27 [51.01]	..				30	1030 [7100]	1200 [8300]			
0.344 [8.74]	38.27 [56.96]	..				..	1150 [7900]	1340 [9200]
0.365 [9.27]	40.52 [60.29]	STD				40	1220 [8400]	1430 [9900]			
0.438 [11.13]	48.28 [71.87]	..				..	1470 [10100]	1710 [11800]
0.500 [12.70]	54.79 [81.52]	XS				60	1670 [11500]	1950 [13400]			
12	300	12.750 [323.8]				0.203 [5.16]	27.23 [40.55]	570 [3900]	670 [4600]
						0.219 [5.56]	29.34 [43.63]	620 [4700]	720 [5000]
						0.250 [6.35]	33.41 [49.71]	..	20	710 [4900]	820 [5700]
						0.281 [7.14]	37.46 [55.75]	790 [5400]	930 [6400]
			0.312 [7.92]	41.48 [61.69]	..	..	880 [6100]	1030 [7100]	
			0.330 [8.38]	43.81 [65.18]	..	30	930 [6400]	1090 [7500]			
			0.344 [8.74]	45.62 [67.90]	..	..	970 [6700]	1130 [7800]	
			0.375 [9.52]	49.61 [73.78]	STD	..	1060 [7300]	1240 [8500]			
			0.406 [10.31]	53.57 [79.70]	..	40	1150 [7900]	1340 [9200]			
			0.438 [11.13]	57.65 [85.82]	..	..	1240 [8500]	1440 [9900]	
			0.500 [12.70]	65.48 [97.43]	XS	..	1410 [9700]	1650 [11400]			
			0.562 [14.27]	73.22 [108.92]	..	60	1590 [11000]	1850 [12800]			
			0.688 [17.48]	88.71 [132.04]	..	80	1940 [13400]	2270 [15700]			
			14	350	14.000 [355.6]	0.210 [5.33]	30.96 [46.04]	540 [3700]	630 [4300]
0.219 [5.56]	32.26 [47.99]	..				..	560 [3900]	660 [4500]
0.250 [6.35]	36.75 [54.69]	..				10	640 [4400]	750 [5200]			
0.281 [7.14]	41.21 [61.35]	..				..	720 [5000]	840 [5800]
0.312 [7.92]	45.65 [67.90]	..				20	800 [5500]	940 [6500]			
0.344 [8.74]	50.22 [74.76]	..				..	880 [6100]	1030 [7100]
0.375 [9.52]	54.62 [81.25]	STD				30	960 [6600]	1120 [7700]			
0.438 [11.13]	63.50 [94.55]	..				40	1130 [7800]	1310 [9000]			
0.469 [11.91]	67.84 [100.94]	..				..	1210 [8900]	1410 [9700]
0.500 [12.70]	72.16 [107.39]	XS				..	1290 [8900]	1500 [10300]			
0.594 [15.09]	85.13 [126.71]	..				60	1530 [10500]	1790 [12300]			
0.750 [19.05]	106.23 [158.10]	..				80	1930 [13300]	2250 [15500]			



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NPS Designator	DN Designator	Outside Diameter, in. [mm]	Nominal Wall Thickness, in. [mm]	Nominal Weight [Mass] per Unit Length, Plain End, lb/ft [kg/m]	Weight Class	Schedule No.	Test Pressure, psi [kPa]	
							Grade A	Grade B
12	300	12.750 [323.8]	0.406 [10.31]	53.57 [79.70]	..	40	1150 [7900]	1340 [9200]
			0.438 [11.13]	57.65 [85.82]	..	..	1240 [8500]	1440 [9900]
			0.500 [12.70]	65.48 [97.43]	XS	..	1410 [9700]	1650 [11400]
			0.562 [14.27]	73.22 [108.92]	..	60	1590 [11000]	1850 [12800]
			0.688 [17.48]	88.71 [132.04]	..	80	1940 [13400]	2270 [15700]
14	350	14.000 [355.6]	0.210 [5.33]	30.96 [46.04]	..	..	540 [3700]	630 [4300]
			0.219 [5.56]	32.26 [47.99]	..	..	560 [3900]	660 [4500]
			0.250 [6.35]	36.75 [54.69]	..	10	640 [4400]	750 [5200]
			0.281 [7.14]	41.21 [61.35]	..	..	720 [5000]	840 [5800]
			0.312 [7.92]	45.65 [67.90]	..	20	800 [5500]	940 [6500]
			0.344 [8.74]	50.22 [74.76]	..	..	880 [6100]	1030 [7100]
			0.375 [9.52]	54.62 [81.25]	STD	30	960 [6600]	1120 [7700]
			0.438 [11.13]	63.50 [94.55]	..	40	1130 [7800]	1310 [9000]
			0.469 [11.91]	67.84 [100.94]	..	..	1210 [8900]	1410 [9700]
			0.500 [12.70]	72.16 [107.39]	XS	..	1290 [8900]	1500 [10300]
			0.594 [15.09]	85.13 [126.71]	..	60	1530 [10500]	1790 [12300]
0.750 [19.05]	106.23 [158.10]	..	80	1930 [13300]	2250 [15500]			
16	400	16.000 [406.4]	0.219 [5.56]	36.95 [54.96]	..	..	490 [3400]	570 [3900]
			0.250 [6.35]	42.09 [62.64]	..	10	560 [3900]	660 [4500]
			0.281 [7.14]	47.22 [70.30]	..	..	630 [4300]	740 [5100]
			0.312 [7.92]	52.32 [77.83]	..	20	700 [4800]	820 [5700]
			0.344 [8.74]	57.57 [85.71]	..	..	770 [5300]	900 [6200]
			0.375 [9.52]	62.64 [93.17]	STD	30	840 [5800]	980 [6900]
			0.438 [11.13]	72.86 [108.49]	..	..	990 [6800]	1150 [7900]
			0.469 [11.91]	77.87 [115.86]	..	..	1060 [7300]	1230 [8500]
			0.500 [12.70]	82.85 [123.30]	XS	40	1120 [7700]	1310 [9000]
			0.594 [15.09]	107.60 [160.12]	..	60	1480 [10200]	1720 [11900]
			18	450	18.000 [457]	0.250 [6.35]	47.44 [70.60]	..	10	500 [3400]	580 [4000]
0.281 [7.14]	53.23 [79.24]	..				..	560 [3900]	660 [4500]
0.312 [7.92]	58.99 [87.75]	..				20	620 [4300]	730 [5000]
0.344 [8.74]	64.93 [96.66]	..				..	690 [4800]	800 [5500]
0.375 [9.52]	70.65 [105.10]	STD				..	750 [5200]	880 [6100]
0.406 [10.31]	76.36 [113.62]	..				..	810 [5600]	950 [6500]
0.438 [11.13]	82.23 [122.43]	..				30	880 [6100]	1020 [7000]
0.469 [11.91]	87.89 [130.78]	..				..	940 [6500]	1090 [7500]
0.500 [12.70]	93.54 [139.20]	XS				..	1000 [6900]	1170 [8100]
0.562 [14.27]	104.76 [155.87]	..				40	1120 [7700]	1310 [9000]
0.750 [19.05]	138.30 [205.83]	..				60	1500 [10300]	1750 [12100]
20	500	20.000 [508]	0.250 [6.35]	52.78 [78.55]	..	10	450 [3100]	520 [3600]
			0.281 [7.14]	59.23 [88.19]	..	..	510 [3500]	590 [4100]
			0.312 [7.92]	65.66 [97.67]	..	..	560 [3900]	660 [4500]
			0.344 [8.74]	72.28 [107.60]	..	..	620 [4300]	720 [5000]
			0.375 [9.52]	78.67 [117.02]	STD	20	680 [4700]	790 [5400]
			0.406 [10.31]	84.04 [126.53]	..	..	730 [5000]	850 [5900]
			0.438 [11.13]	91.59 [136.37]	..	..	790 [5400]	920 [6300]
20	500	20.000 [508]	0.469 [11.91]	97.92 [145.70]	..	..	850 [5900]	950 [6500]
			0.500 [12.70]	104.23 [155.12]	XS	30	900 [6200]	1050 [7200]
			0.594 [15.09]	123.23 [183.42]	..	40	1170 [8100]	1250 [8600]
24	600	24.000 [610]	0.250 [6.35]	63.47 [94.46]	..	10	380 [2600]	440 [3000]
			0.281 [7.14]	71.25 [106.08]	..	..	420 [2900]	490 [3400]
			0.312 [7.92]	79.01 [117.51]	..	..	470 [3200]	550 [3800]
			0.344 [8.74]	86.99 [129.50]	..	..	520 [3600]	600 [4100]
			0.375 [9.52]	94.71 [140.88]	STD	20	560 [3900]	660 [4500]
			0.406 [10.31]	102.40 [152.37]	..	..	610 [4200]	710 [4900]
			0.438 [11.13]	110.32 [164.26]	..	..	660 [4500]	770 [5300]
			0.469 [11.91]	117.98 [175.54]	..	..	700 [4800]	820 [5700]
			0.500 [12.70]	125.61 [186.94]	XS	..	750 [5200]	880 [6100]
			0.562 [14.27]	140.81 [209.50]	..	30	840 [5800]	980 [6800]
			0.688 [17.48]	171.45 [255.24]	..	40	1030 [7100]	1200 [8300]

Note 1, 1psi=0.07031 kg/cm² 2, 1lb/ft=0.45359 kg/ft



ASTM A53

2) Dimensions, Weights, and Test Pressures for Threaded and Coupled Pipe

NPS Designator	DN Designator	Outside Diameter, in. [mm]	Nominal Wall Thickness, in. [mm]	Nominal Weight [Mass] per Unit Length, Threaded and Coupled, lb/ft [kg/m]	Weight Class	Schedule No.	Test Pressure, psi [kPa]	
							Grade A	Grade B
1/2	15	0.840 [21.3]	0.109 [1.27]	0.86 [1.27]	STD	40	700 [4800]	700 [4800]
			0.147 [3.73]	1.09 [1.62]	XS	80	850 [5900]	850 [5900]
			0.294 [7.47]	1.72 [2.54]	XXS	...	1000 [6900]	1000 [6900]
3/4	20	1.050 [26.7]	0.113 [2.87]	1.14 [1.69]	STD	40	700 [4800]	700 [4800]
			0.154 [3.91]	1.48 [2.21]	XS	80	850 [5900]	850 [5900]
			0.308 [7.82]	2.45 [3.64]	XXS	...	1000 [6900]	1000 [6900]
1	25	1.315 [33.4]	0.133 [3.38]	1.69 [2.50]	STD	40	700 [4800]	700 [4800]
			0.179 [4.55]	2.19 [3.25]	XS	80	850 [5900]	850 [5900]
			0.358 [9.09]	3.66 [5.45]	XXS	...	1000 [6900]	1000 [6900]
1 1/4	32	1.660 [42.2]	0.140 [3.56]	2.28 [3.40]	STD	40	1000 [6900]	1100 [6900]
			0.191 [4.85]	3.03 [4.49]	XS	80	1500 [10300]	1600 [11000]
			0.382 [9.70]	5.23 [7.76]	XXS	...	1800 [12400]	1900 [13100]
1 1/2	40	1.900 [48.3]	0.145 [3.68]	2.74 [4.04]	STD	40	1000 [6900]	1100 [6900]
			0.200 [5.08]	3.65 [5.39]	XS	80	1500 [10300]	1600 [11000]
			0.400 [10.16]	6.41 [9.56]	XXS	...	1800 [12400]	1900 [13100]
2	50	2.375 [60.3]	0.154 [3.91]	3.68 [5.46]	STD	40	2300 [15900]	2500 [17200]
			0.218 [5.54]	5.08 [7.55]	XS	80	2500 [17200]	2500 [17200]
			0.436 [11.07]	9.06 [13.44]	XXS	...	2500 [17200]	2500 [17200]
2 1/2	65	2.875 [73.0]	0.203 [5.16]	5.85 [8.67]	STD	40	2500 [17200]	2500 [17200]
			0.276 [7.01]	7.75 [11.52]	XS	80	2500 [17200]	2500 [17200]
3	80	3.500 [88.9]	0.216 [5.49]	7.68 [11.35]	STD	40	2200 [15200]	2500 [17200]
			0.300 [7.62]	10.35 [15.39]	XS	80	2500 [17200]	2500 [17200]
3 1/2	90	4.000 [101.6]	0.226 [5.74]	9.27 [13.71]	STD	40	2000 [13800]	2400 [16500]
			0.318 [8.08]	12.67 [18.82]	XS	80	2800 [19300]	2800 [19300]
4	100	4.500 [114.3]	0.237 [6.02]	10.92 [16.23]	STD	40	1900 [13100]	2200 [15200]
			0.337 [8.56]	15.20 [22.60]	XS	80	2700 [18600]	2800 [19300]
5	125	5.563 [141.3]	0.258 [6.55]	14.90 [22.07]	STD	40	1700 [11700]	1900 [13100]
			0.375 [9.52]	21.04 [31.42]	XS	80	2400 [16500]	2800 [19300]
6	150	6.625 [168.3]	0.280 [7.11]	19.34 [28.58]	STD	40	1500 [10300]	1800 [12400]
			0.432 [10.97]	28.88 [43.05]	XS	80	2300 [15900]	2700 [18600]
8	200	8.625 [219.1]	0.277 [7.04]	25.53 [38.07]	...	30	1200 [8300]	1300 [9000]
			0.322 [8.18]	29.35 [43.73]	STD	40	1300 [9000]	1600 [11000]
			0.500 [12.70]	44.00 [65.41]	XS	80	2100 [14500]	2400 [16500]
10	250	10.750 [273.0]	0.279 [7.09]	32.33 [48.80]	...	...	950 [6500]	1100 [7600]
			0.307 [7.80]	35.33 [53.27]	...	30	1000 [6900]	1200 [8300]
			0.365 [9.27]	41.49 [63.36]	STD	40	1200 [8300]	1400 [9700]
			0.500 [12.70]	55.55 [83.17]	XS	60	1700 [11700]	2000 [13800]
12	300	12.750 [323.8]	0.330 [8.38]	45.47 [67.72]	...	30	950 [6500]	1100 [7600]
			0.375 [9.52]	51.28 [76.21]	STD	...	1100 [7600]	1200 [8300]
			0.500 [12.70]	66.91 [99.4]	XS	...	1400 [9700]	1600 [11000]

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



ASTM A500 Round Tubes

Nominal Size	Outside Diameter		Wall Thickness		Weight		
	in	mm	in.	mm	lb/ft	kg/ft	kg/m
1/2	0.840	21.3	0.109	2.77	0.85	0.39	1.27
	1.050	26.7	0.113	2.87	1.13	0.51	1.69
3/4	1.315	33.4	0.104	2.64	1.34	0.61	2.00
	1.660	42.2	0.110	2.79	1.81	0.82	2.71
1	1.660	42.2	0.140	3.56	2.27	1.03	3.39
	1.660	42.2	0.191	4.85	3.00	1.36	4.47
	1.900	48.3	0.114	2.90	2.17	0.98	3.25
1 1/2	1.900	48.3	0.145	3.68	2.72	1.23	4.05
	1.900	48.3	0.200	5.08	3.63	1.64	5.41
	2.375	60.3	0.121	3.07	2.92	1.32	4.33
2	2.375	60.3	0.154	3.91	3.65	1.66	5.44
	2.375	60.3	0.218	5.54	5.02	2.28	7.48
	2.875	73.0	0.156	3.96	4.53	2.05	6.74
2 1/2	2.875	73.0	0.188	4.78	5.40	2.45	8.04
	2.875	73.0	0.203	5.16	5.79	2.63	8.63
	2.875	73.0	0.276	7.01	7.66	3.47	11.41
3	3.500	88.9	0.156	3.96	5.58	2.53	8.29
	3.500	88.9	0.188	4.78	6.63	3.01	9.92
	3.500	88.9	0.226	5.49	7.58	3.44	11.29
3 1/2	4.000	101.6	0.156	3.96	6.40	2.90	9.53
	4.000	101.6	0.188	4.78	7.63	3.46	11.41
	4.000	101.6	0.226	5.74	9.11	4.13	13.57
4	4.500	114.3	0.156	3.96	7.25	3.29	10.78
	4.500	114.3	0.188	4.78	8.64	3.92	12.91
	4.500	114.3	0.219	5.56	10.00	4.54	14.91
	4.500	114.3	0.237	6.02	10.79	4.89	16.07
	4.500	114.3	0.337	8.56	14.98	6.79	22.32
5	5.563	141.3	0.258	6.55	14.62	6.63	21.77
	5.563	141.3	0.375	9.53	20.78	9.43	30.97
6	6.625	168.3	0.280	7.11	18.97	8.60	28.26
	8.625	219.1	0.322	8.18	28.55	12.95	42.55
8	8.625	219.1	0.500	12.70	43.39	19.68	64.64
	10.750	273.0	0.365	9.27	40.48	18.36	60.29
10	10.750	273.0	0.500	12.70	54.74	24.83	81.52
	12.750	323.8	0.375	9.53	49.56	22.48	73.78
12	12.750	323.8	0.500	12.70	65.42	29.67	97.43
	14.000	355.6	0.375	9.52	54.57	24.75	81.25
14	14.000	355.6	0.500	12.70	72.09	32.70	107.39
	16.000	406.4	0.375	9.52	62.58	28.39	93.17
16	16.000	406.4	0.500	12.70	82.77	37.54	123.30
	18.000	457.2	0.375	9.52	70.59	32.02	105.10
18	18.000	457.2	0.500	12.70	93.45	42.39	139.20
	20.000	508.0	0.375	9.52	78.60	35.65	117.02
20	20.000	508.0	0.500	12.70	104.13	47.23	155.12
	24.000	609.6	0.375	9.52	94.62	42.92	140.88
	24.000	609.6	0.500	12.70	125.49	56.92	186.94

Note 1. 1psi=0.07031 kg/cm² 2. 1lb/ft=0.45359 kg/ft



ASTM A252 Pipe Piles

Outside Diameter, in.	Nominal Wall Thickness, in.	Weight per Unit Lengths, lb/ft	Outside Diameter, in.	Nominal Wall Thickness, in.	Weight per Unit Lengths, lb/ft	
6	0.134	8.40	12	0.134	17.00	
	0.141	8.83		0.141	17.87	
	0.156	9.75		0.150	19.00	
	0.164	10.23		0.164	20.75	
	0.172	10.72		0.172	21.75	
8	0.141	11.85		0.179	22.62	
	0.172	14.39		0.188	23.74	
8 5/8	0.109	9.92		0.203	25.60	
	0.141	12.79		0.219	27.58	
	0.172	15.54		0.230	28.94	
	0.188	16.96		0.250	31.40	
	0.203	18.28		0.281	35.20	
	0.219	19.68		0.312	38.98	
	0.250	22.38		12 3/4	0.109	14.73
	0.277	24.72			0.134	18.07
	0.312	27.73			0.141	19.01
	0.322	28.58			0.150	20.20
	0.344	30.45			0.164	22.07
	0.375	33.07			0.172	23.13
	0.438	38.33	0.179		24.05	
	0.500	43.43	0.188	25.25		
10	0.109	11.53	0.203	27.23		
	0.120	12.67	0.219	29.34		
	0.134	14.13	0.230	30.78		
	0.141	14.86	0.250	33.41		
	0.150	15.79	0.281	37.46		
	0.164	17.24	0.312	41.48		
	0.172	18.07	0.330	43.81		
	0.179	18.79	0.344	45.62		
	0.188	19.72	0.375	49.61		
	0.203	21.26	0.438	57.65		
	0.219	22.90	0.500	65.48		
	0.230	24.02	14	0.134	19.86	
	0.250	26.06		0.141	20.89	
	10 3/4	0.109		12.40	0.150	22.21
0.120		13.64		0.164	24.26	
0.134		15.21		0.172	25.43	
0.141		15.99		0.179	26.45	
0.150		17.00		0.188	27.76	
0.164		18.56	0.203	29.94		
0.172		19.45	0.219	32.26		
0.179		20.23	0.230	33.84		
0.188		21.23	0.250	36.75		
0.203		22.89	0.281	41.21		
0.219		24.65	0.312	45.65		
0.230		25.87	0.344	50.22		
0.250		28.06	0.375	54.62		
0.279		31.23	0.438	63.50		
0.307	34.27	0.469	67.84			
0.344	38.27	0.500	72.16			
0.365	40.52	16	0.134	22.73		
0.438	48.28		0.141	23.90		
0.500	54.79		0.150	25.42		
			0.164	27.76		

Note 1. 1in=25.4mm 2. 1lb/ft= 1.49kg/m 3. 1lb/ft= 0.45359kg/ft



ASTM A 252

Outside Diameter, in.	Nominal Wall Thickness, in.	Weight per Unit Lengths, lb/ft	Outside Diameter, in.	Nominal Wall Thickness, in.	Weight per Unit Lengths, lb/ft	
16	0.172	29.10	20	0.188	39.82	
	0.179	30.27		0.219	46.31	
	0.188	30.61		0.250	52.78	
	0.203	34.28		0.281	59.23	
	0.219	36.95		0.312	65.66	
	0.230	38.77		0.344	72.28	
	0.250	42.09		0.375	78.67	
	0.281	47.22		0.438	91.59	
	0.312	52.32		0.469	97.92	
	0.344	57.57		0.500	104.23	
	0.375	62.64		22	0.172	40.13
	0.438	72.86			0.188	43.84
	0.469	77.87			0.219	50.99
	0.500	82.85			0.250	58.13
18	0.141	26.92	0.281		65.24	
	0.172	32.78	0.312		72.34	
	0.188	35.80	0.375		86.69	
	0.219	41.63	0.438	100.96		
	0.230	43.69	0.469	107.95		
	0.250	47.44	0.500	114.92		
	0.281	53.23	24	0.172	43.81	
	0.312	58.99		0.188	47.86	
	0.344	64.93		0.219	55.67	
	0.375	70.65		0.250	63.47	
	0.438	82.23		0.281	71.25	
	0.469	87.89		0.312	79.01	
	0.500	93.54		0.375	94.71	
	20	0.141	29.93	0.438	110.32	
0.172		36.46	0.469	117.98		
			0.500	125.62		

Note : 1. 1in=25.4mm 2. 1lb/ft= 1.49kg/m 3. 1lb/ft= 0.45359kg/ft



ASTM A795 Black and Hot dipped Zinc-Coated, Welded Steel Pipe for Fire Protection Use

Dimensions, Weights, and Test Pressures For Light-Weight Fire Protection Pipe-Schedule 10

NPS Designator	Outside Diameter		Nominal Wall Thickness		Weight Plain End		Test Pressure	
							Electric Resistance Weld	
	in.	mm	in.	mm	lb/ft	kg/m	psi	Mpa
3/4	1.050	(26.7)	0.083	(2.11)	0.86	(1.28)	700	(4.83)
1	1.315	(33.4)	0.109	(2.77)	1.41	(2.09)	700	(4.83)
1 1/4	1.660	(42.2)	0.109	(2.77)	1.81	(2.69)	1000	(6.89)
1 1/2	1.900	(48.3)	0.109	(2.77)	2.09	(3.11)	1000	(6.89)
2	2.375	(60.3)	0.109	(2.77)	2.64	(3.93)	1000	(6.89)
2 1/2	2.875	(73.0)	0.120	(3.05)	3.53	(5.26)	1000	(6.89)
3	3.500	(88.9)	0.120	(3.05)	4.34	(6.46)	1000	(6.89)
3 1/2	4.000	(101.6)	0.120	(3.05)	4.98	(7.41)	1200	(8.27)
4	4.500	(114.3)	0.120	(3.05)	5.62	(8.37)	1200	(3.05)
5	5.563	(141.3)	0.134	(3.40)	7.78	(11.58)	1200	(3.40)
6	6.625	(168.3)	0.134	(3.40)	9.30	(13.85)	1000	(3.40)
8	8.625	(219.1)	0.188	(4.78)	16.96	(25.26)	800	(4.78)
10	10.750	(273.1)	0.188	(4.78)	21.23	(31.62)	700	(4.78)

Dimensions, Weights, and Test Pressures For Light-Weight Fire Protection Pipe-Schedule 30 and Schedule 40

NPS Designator	Outside Diameter		Nominal Wall Thickness		Weight Plain End		Weight Thread and Couplings		Test Pressure	
									Electric Resistance Weld	
	in.	mm	in.	mm	lb/ft	kg/m	lb/ft	kg/m	psi	Mpa
1/2	0.840	(21.3)	0.109	(2.77)	0.85	(1.27)	0.85	(1.27)	700	(4.83)
3/4	1.050	(26.7)	0.113	(2.87)	1.13	(1.69)	1.13	(1.68)	700	(4.83)
1	1.315	(33.4)	0.133	(3.38)	1.68	(2.50)	1.68	(2.50)	700	(4.83)
1 1/4	1.660	(42.2)	0.140	(3.56)	2.27	(3.39)	2.28	(3.40)	1000	(6.89)
1 1/2	1.900	(48.3)	0.145	(3.68)	2.72	(4.05)	2.73	(4.07)	1000	(6.89)
2	2.375	(60.3)	0.154	(3.91)	3.66	(5.45)	3.69	(5.50)	1000	(6.89)
2 1/2	2.875	(73.0)	0.203	(5.16)	5.88	(8.64)	5.83	(8.68)	1000	(6.89)
3	3.500	(88.9)	0.216	(5.49)	7.58	(11.29)	7.62	(11.35)	1000	(6.89)
3 1/2	4.000	(101.6)	0.226	(5.74)	9.12	(13.58)	9.21	(13.71)	1200	(8.27)
4	4.500	(114.3)	0.237	(6.02)	10.80	(16.09)	10.91	(16.25)	1200	(8.27)
5	5.563	(141.3)	0.258	(6.55)	14.63	(21.79)	14.82	(22.07)	1200	(8.27)
6	6.625	(168.3)	0.280	(7.11)	18.99	(28.29)	19.20	(28.60)	1200	(8.27)
8	8.625	(219.1)	0.277^	(7.04)	24.72	(36.82)	25.57	(38.09)	1200	(8.27)
10	10.750	(273.1)	0.307^	(7.80)	34.27	(51.05)	35.78	(53.29)	1000	(6.89)

Note : 1. 1Psi= 0.070301kg/cm2 2. 1lb/ft= 0.45359kg/ft



BS 1387/85 Steel Tubes and Tubulars Suitable for Screwing to BS 21 Pipe Threads

Tube	Nominal Size		Outside Diameter				Wall Thickness		Mass of Black Tube					
			Max.		Min.				Plain End			Screwed and Socketed		
	-	DN	in	mm	in	mm	in	mm	lb/ft	kg/m	kg/m	lb/ft	kg/m	kg/m
Light	1/2	15	0.841	21.4	0.825	21.0	0.080	2.0	0.636	0.289	0.947	0.646	0.293	0.956
	3/4	20	1.059	26.9	1.041	26.4	0.090	2.3	0.927	0.421	1.38	0.954	0.433	1.39
	1	25	1.328	33.8	1.309	33.2	0.104	2.6	1.33	0.604	1.98	1.36	0.617	2.00
	1 1/4	32	1.670	42.5	1.650	41.9	0.104	2.6	1.71	0.774	2.54	1.75	0.794	2.57
	1 1/2	40	1.903	48.4	1.882	47.8	0.116	2.9	2.17	0.985	3.23	2.22	1.01	3.27
	2	50	2.370	60.2	2.347	59.6	0.116	2.9	2.74	1.24	4.08	2.81	1.27	4.15
	2 1/2	65	2.991	76.0	2.960	75.2	0.126	3.2	3.84	1.74	5.71	3.98	1.81	5.83
	3	80	3.491	88.7	3.460	87.9	0.126	3.2	4.52	2.05	6.72	4.49	2.13	6.89
Medium	4	100	4.481	113.9	4.450	113.0	0.142	3.6	6.55	2.97	9.75	6.84	3.10	10.0
	1/2	15	0.586	21.7	0.831	21.1	0.104	2.6	0.813	0.369	1.21	0.828	0.376	1.22
	3/4	20	1.072	27.2	1.047	26.6	0.104	2.6	1.05	0.475	1.56	1.07	0.485	1.57
	1	25	1.346	34.2	1.316	33.4	0.126	3.2	1.62	0.735	2.41	1.65	0.748	2.43
	1 1/4	32	1.687	42.9	1.657	42.1	0.126	3.2	2.08	0.945	3.10	2.13	0.966	3.13
	1 1/2	40	1.919	48.8	1.889	48.0	0.126	3.2	2.40	1.09	3.57	2.46	1.12	3.61
	2	50	2.394	60.8	2.354	59.8	0.142	3.6	3.38	1.53	5.03	3.47	1.57	5.10
	2 1/2	65	3.014	76.6	2.969	75.4	0.142	3.6	4.32	1.96	6.43	4.46	2.02	6.55
Heavy	3	80	3.524	89.5	3.469	88.1	0.157	4.0	5.62	2.55	8.37	5.80	2.63	8.54
	4	100	4.524	114.9	4.459	113.3	0.177	4.5	8.20	3.72	12.2	8.34	3.78	12.5
	5	125	5.534	140.6	5.459	138.7	0.196	5.0	11.15	5.06	16.6	11.2	5.08	17.1
	6	150	6.539	166.1	6.459	164.1	0.196	5.0	13.24	6.00	19.7	13.3	6.03	20.3
	1/2	15	0.856	21.7	0.831	21.1	0.126	3.2	0.968	0.439	1.44	0.983	0.446	1.45
	3/4	20	1.072	27.2	1.047	26.6	0.126	3.2	1.26	0.570	1.87	1.28	0.581	1.88
	1	25	1.346	34.2	1.316	33.4	0.157	4.0	1.98	0.896	2.94	2.01	0.912	2.96
	1 1/4	32	1.687	42.9	1.657	42.1	0.157	4.0	2.55	1.16	3.80	2.60	1.18	3.83
Heavy	1 1/2	40	1.919	48.8	1.889	48.0	0.157	4.0	2.94	1.34	4.38	3.01	1.37	4.42
	2	50	2.394	60.8	2.354	59.8	0.177	4.5	4.16	1.89	6.19	4.19	1.90	6.26
	2 1/2	65	3.014	76.6	2.969	75.4	0.177	4.5	5.33	2.42	7.93	5.39	2.44	8.05
	3	80	3.524	89.5	3.469	88.1	0.196	5.0	6.92	3.14	10.3	6.87	3.12	10.5
	4	100	4.524	114.9	4.459	113.3	0.212	5.4	9.74	4.42	14.5	9.91	4.50	14.8
	5	125	5.534	140.6	5.459	138.7	0.212	5.4	12.3	5.46	17.9	12.3	5.58	18.4
	6	150	6.539	166.1	6.459	164.1	0.212	5.4	14.31	6.49	21.3	14.7	6.67	21.9



BS EN 10255 Steel Tubes and Tubular Suitable for Screwing to BS EN 10226 Pipe Threads

Tube	Nominal Size		Outside Diameter				Wall Thickness		Mass of Black Tube					
			Max.		Min.				Plain End			Screwed and Socketed		
			-	DN	in	mm			in	mm	in	mm	lb/ft	kg/m
L	1/2	15	0.854	21.70	0.827	21.0	0.091	2.3	0.726	0.329	1.080	0.732	0.332	1.090
	3/4	20	1.067	27.10	1.039	26.4	0.091	2.3	0.941	0.427	1.400	0.947	0.430	1.410
	1	25	1.339	34.00	1.307	33.2	0.114	2.9	1.478	0.671	2.200	1.492	0.677	2.220
	1 1/4	32	1.681	42.70	1.650	41.9	0.114	2.9	1.895	0.860	2.820	1.915	0.869	2.850
	1 1/2	40	1.913	48.60	1.882	47.8	0.114	2.9	2.184	0.991	3.250	2.211	1.003	3.290
	2	50	2.390	60.70	2.346	59.6	0.126	3.2	3.031	1.375	4.510	3.078	1.396	4.580
	2 1/2	65	2.992	76.00	2.961	75.2	0.126	3.2	3.864	1.753	5.750	3.944	1.789	5.870
	3	80	3.492	88.70	3.461	87.9	0.126	3.2	4.543	2.060	6.760	4.657	2.112	6.930
	3 2/1	90	3.984	101.20	3.949	100.3	0.142	3.6	5.846	2.652	8.700	5.967	2.707	8.880
	4	100	4.484	113.90	4.449	113.0	0.142	3.6	6.605	2.996	9.830	6.787	3.078	10.100
5	125	5.543	140.80	5.453	138.5	0.117	4.5	10.080	4.572	15.000	10.416	4.724	15.500	
6	150	6.555	166.50	6.453	163.9	0.117	4.5	11.961	5.425	17.800	12.364	5.608	18.400	
L1	1/2	15	0.854	21.70	0.827	21.0	0.091	2.3	0.726	0.329	1.080	0.732	0.332	1.090
	3/4	20	1.067	27.10	1.039	26.4	0.091	2.3	0.934	0.424	1.390	0.941	0.427	1.400
	1	25	1.339	34.00	1.307	33.2	0.114	2.9	1.478	0.671	2.200	1.492	0.677	2.220
	1 1/4	32	1.681	42.70	1.650	41.9	0.114	2.9	1.895	0.860	2.820	1.915	0.869	2.850
	1 1/2	40	1.913	48.60	1.882	47.8	0.114	2.9	2.177	0.988	3.240	2.204	1.000	3.280
	2	50	2.390	60.70	2.346	59.6	0.126	3.2	3.017	1.369	4.490	3.064	1.390	4.560
	2 1/2	65	3.004	76.30	2.961	75.2	0.126	3.2	3.850	1.747	5.730	3.931	1.783	5.850
	3	80	3.520	89.40	3.461	87.9	0.142	3.6	5.073	2.301	7.550	5.188	2.353	7.720
4	100	4.524	114.90	4.449	113.0	0.157	4.0	7.257	3.292	10.800	7.459	3.383	11.100	
L2	1/2	15	0.843	21.40	0.827	21.0	0.079	2.0	0.636	0.289	0.947	0.642	0.291	0.956
	3/4	20	1.059	26.90	1.039	26.4	0.091	2.3	0.927	0.421	1.380	0.934	0.424	1.390
	1	25	1.331	33.80	1.307	33.2	0.102	2.6	1.331	0.604	1.980	1.344	0.610	2.000
	1 1/4	32	1.673	42.50	1.650	41.9	0.102	2.6	1.707	0.774	2.540	1.727	0.783	2.570
	1 1/2	40	1.906	48.40	1.882	47.8	0.114	2.9	2.170	0.985	3.230	2.197	0.997	3.270
	2	50	2.370	60.20	2.346	59.6	0.114	2.9	2.742	1.244	4.080	2.789	1.265	4.150
	2 1/2	65	2.992	76.00	2.961	75.2	0.126	3.2	3.837	1.740	5.710	3.918	1.777	5.830
	3	80	3.492	88.70	3.461	87.9	0.126	3.2	4.516	2.048	6.720	4.630	2.100	6.890
	4	100	4.484	113.90	4.449	113.0	0.142	3.6	6.552	2.972	9.750	6.720	3.048	10.000



BS EN 10255 Steel Tubes and Tubular Suitable for Screwing to BS EN 10226 Pipe Threads

Tube	Nominal Size		Outside Diameter				Wall Thickness		Mass of Black Tube					
			Max.		Min.				Plain End			Screwed and Socketed		
			-	DN	in	mm			in	mm	in	mm	lb/ft	kg/m
H	1/2	15	0.858	21.80	0.827	21.0	0.126	3.2	0.968	0.439	1.440	0.974	0.442	1.450
	3/4	20	1.075	27.30	1.043	26.5	0.126	3.2	1.257	0.570	1.870	1.263	0.573	1.880
	1	25	1.346	34.20	1.311	33.3	0.157	4.0	1.969	0.893	2.930	1.982	0.899	2.950
	1 1/4	32	1.689	42.90	1.654	42.0	0.157	4.0	2.547	1.155	3.790	2.567	1.164	3.820
	1 1/2	40	1.921	48.80	1.886	47.9	0.157	4.0	2.937	1.332	4.370	2.963	1.344	4.410
	2	50	2.394	60.80	2.350	59.7	0.177	4.5	4.159	1.887	6.190	4.207	1.908	6.260
	2 1/2	65	3.016	76.60	2.965	75.3	0.177	4.5	5.329	2.417	7.930	5.409	2.454	8.050
	3	80	3.524	89.50	3.465	88.0	0.197	5.0	6.921	3.139	10.300	7.056	3.200	10.500
	4	100	4.528	115.00	4.453	113.1	0.213	5.4	9.744	4.420	14.500	9.945	4.511	14.800
	5	125	5.543	140.80	5.453	138.5	0.213	5.4	12.028	5.456	17.900	12.364	5.608	18.400
6	150	6.555	166.50	6.453	163.9	0.213	5.4	14.313	6.492	21.300	14.716	6.675	21.900	
M	1/2	15	0.858	21.80	0.827	21.0	0.102	2.6	0.813	0.369	1.210	0.820	0.372	1.220
	3/4	20	1.075	27.30	1.043	26.5	0.102	2.6	1.048	0.475	1.560	1.055	0.479	1.570
	1	25	1.346	34.20	1.311	33.3	0.126	3.2	1.619	0.735	2.410	1.633	0.741	2.430
	1 1/4	32	1.689	42.90	1.654	42.0	0.126	3.2	2.083	0.945	3.100	2.103	0.954	3.130
	1 1/2	40	1.921	48.80	1.886	47.9	0.126	3.2	2.392	1.085	3.560	2.419	1.097	3.600
	2	50	2.394	60.80	2.350	59.7	0.142	3.6	3.380	1.533	5.030	3.427	1.554	5.100
	2 1/2	65	3.016	76.60	2.965	75.3	0.142	3.6	4.314	1.957	6.420	4.395	1.993	6.540
	3	80	3.524	89.50	3.465	88.0	0.157	4.0	5.618	2.548	8.360	5.732	2.600	8.530
	4	100	4.528	115.00	4.453	113.1	0.177	4.5	8.198	3.179	12.200	8.400	3.810	12.500
	5	125	5.543	140.80	5.453	138.5	0.197	5.0	11.155	5.060	16.600	11.491	5.212	17.100
6	150	6.555	166.50	6.453	163.9	0.197	5.0	13.305	6.035	19.800	13.703	6.218	20.400	



ANSI C80.1 & UL 6 Rigid Steel Conduit.Zinc Coated

[ANSI & UL 6]

Nominal Size	Nominal inside Diameter		Outside Diameter		Nominal Wall Thickness		Length Without Coupling		Minimum weight of Ten Unit Lengths with Couplings Attached	
	in.	mm	in.	mm	in.	mm	ft & in	m	lb	kg
1/2	0.632	16.1	0.840	21.3	0.104	2.64	9' 11 1/4"	3.03	79.0	35.83
3/4	0.836	21.2	1.050	26.7	0.107	2.72	9' 11 1/4"	3.03	105.0	47.63
1	1.063	27.0	1.315	33.4	0.126	3.20	9' 11"	3.02	153.0	69.40
1 1/4	1.394	35.4	1.660	42.2	0.133	3.38	9' 11"	3.02	201.0	91.17
1 1/2	1.624	41.2	1.900	48.3	0.138	3.51	9' 11"	3.02	249.0	112.95
2	2.083	52.9	2.375	60.3	0.146	3.71	9' 11"	3.02	332.0	150.60
2 1/2	2.489	63.2	2.875	73.0	0.193	4.90	9' 10 1/2"	3.01	527.0	239.05
3	3.090	78.5	3.500	88.9	0.205	5.21	9' 10 1/2"	3.01	682.6	309.63
3 1/2	3.570	90.7	4.000	101.6	0.215	5.46	9' 10 1/4"	3.00	831.0	376.94
4	4.050	102.9	4.500	114.3	0.225	5.72	9' 10 1/4"	3.00	972.3	441.04
5	5.073	128.9	5.563	141.3	0.245	6.22	9' 10"	3.00	1313.6	595.85
6	6.093	154.8	6.625	168.3	0.266	6.76	9' 10"	3.00	1745.3	791.67

[UL6 Rigid Metal Conduit]

Nominal Size	Nominal Inside Diameter		Outside Diameter		Nominal Wall Thickness		Length without Coupling		Minimum acceptable weight of ten lengths of finished conduit with one coupling attached to each length	
	in.	mm	in.	mm	in.	mm	ft & in	m	lb	kg
1/2	0.632	16.05	0.840	21.34	0.104	2.64	9' 11 1/4"	3.030	79.0	35.83
3/4	0.836	21.23	1.050	26.67	0.107	2.72	9' 11 1/4"	3.030	105.0	47.63
1	1.063	27.00	1.315	33.40	0.126	3.20	9' 11"	3.025	153.0	69.40
1 1/4	1.394	35.41	1.660	42.16	0.133	3.38	9' 11"	3.025	201.0	91.17
1 1/2	1.624	41.25	1.900	48.26	0.138	3.51	9' 11"	3.025	249.0	112.95
2	2.083	52.91	2.375	60.33	0.146	3.71	9' 11"	3.025	332.0	150.59
2 1/2	2.489	63.22	2.875	73.03	0.193	4.90	9' 10 1/2"	3.010	527.0	239.04
3	3.090	78.49	3.500	88.90	0.205	5.21	9' 10 1/2"	3.010	682.6	309.62
3 1/2	3.570	90.68	4.000	101.60	0.215	5.46	9' 10 1/4"	3.005	831.0	376.94
4	4.050	102.87	4.500	114.30	0.225	5.72	9' 10 1/4"	3.005	972.3	441.03
5	5.073	128.85	5.563	141.30	0.245	6.22	9' 10"	2.995	1313.6	595.84
6	6.093	154.76	6.625	168.28	0.266	6.76	9' 10"	2.995	1745.3	791.65



JIS G 3452(KS D 3507) Carbon Steel Pipes for Ordinary Piping

Nominal Size		Outside Diameter	Tolerance of Outside Diameter		Wall Thickness	Tolerance of Wall Thickness	Unit Weight of Plain Ends
A	B		Threaded	Plain Ends			
15	1/2	217	±0.5mm		2.65 (2.8)	+Not specified	1.25 (1.31)
20	3/4	272	±0.5mm		2.65 (2.8)		1.60 (1.68)
25	1	340	±0.5mm		3.25 (3.2)		2.45 (2.43)
32	1 1/4	427	±0.5mm		3.25 (3.5)		3.16 (3.38)
40	1 1/2	486	±0.5mm		3.25 (3.2)		3.63 (3.89)
50	2	605	±0.5mm	±1%	3.65 (3.8)		5.12 (5.31)
65	2 1/2	763	±0.7mm	±1%	3.65 (4.2)		6.54 (7.47)
80	3	891	±0.8mm	±1%	4.05 (4.2)		8.49 (8.79)
90	3 1/2	1016	±0.8mm	±1%	4.05 (4.2)		9.74 (10.1)
100	4	1143	±0.8mm	±1%	4.50 (4.5)		12.2 (12.2)
125	5	1398	±0.8mm	±1%	4.85 (4.5)	16.1 (15.0)	
150	6	1652	±0.8mm	±1%	4.85 (5.0)	19.2 (19.8)	
200	8	2163	±1.0mm	±1%	5.85 (5.8)	30.4 (30.1)	
250	10	2674	±1.3mm	±1%	6.40 (6.6)	41.2 (42.4)	
300	12	3185	±1.5mm	±1%	7.00 (6.9)	53.8 (53.0)	
350	14	355.6	-	±1%	7.60	65.2	
400	16	4064	-	±1%	7.9	77.6	
450	18	4572	-	±1%	7.9	87.5	
500	20	5088	-	±1%	7.9	97.4	
550	22	5588	-	±1%	7.9	107.3	
600	24	6096	-	±1%	7.9	117.2	



JIS G 3454(KS D 3562) Carbon Steel Pipes for Pressure Service

Nominal Size	Outside Diameter		Nominal Wall Thickness																				
			Schedule 10			Schedule 20			Schedule 30			Schedule 40			Schedule 60			Schedule 80					
			Wall thickness	Weight	Hydrostatic Test Pressure	thickness	Weight	Hydrostatic Test Pressure	Wall thickness	Weight	Hydrostatic Test Pressure	Wall thickness	Weight	Hydrostatic Test Pressure	Wall thickness	Weight	Hydrostatic Test Pressure	Wall thickness	Weight	Hydrostatic Test Pressure			
A	B	kg/m	m/m	kg/m	(kgf / cm ²)	m/m	kg/m	(kgf / cm ²)	m/m	kg/m	(kgf / cm ²)	m/m	kg/m	(kgf / cm ²)	m/m	kg/m	(kgf / cm ²)	m/m	kg/m	(kgf / cm ²)			
15	1/2	21.7										2.8	1.31	60	3.2	1.46	90	3.7	1.64	120			
20	3/4	27.2										2.9	1.74	60	3.4	2.00	90	3.9	2.24	120			
25	1	34.0										3.4	2.57	60	3.9	2.89	90	4.5	3.27	120			
32	1 1/4	42.7										3.6	3.47	60	4.5	4.24	90	4.9	4.57	120			
40	1 1/2	48.6										3.7	4.10	60	4.5	4.89	90	5.1	5.47	120			
50	2	60.5					3.2	4.52	35			3.9	5.44	60	4.9	6.72	90	5.5	7.46	120			
65	2 1/2	76.3					4.5	7.97	35			5.2	9.12	60	6.0	10.4	90	7.0	12.0	120			
80	3	89.1					4.5	9.39	35			5.5	11.3	60	6.6	13.4	90	7.6	15.3	120			
90	3 1/2	101.6					4.5	10.8	35			5.7	13.5	60	7.0	16.3	90	8.1	18.7	120			
100	4	114.3					4.9	13.2	35			6.0	16.0	60	7.1	18.8	90	8.6	22.4	120			
125	5	139.8					5.1	16.9	35			6.6	21.7	60	8.1	26.3	90	9.5	30.5	120			
150	6	165.2					5.5	21.7	35			7.1	27.7	60	9.3	35.8	90	11.0	41.8	120			
200	8	216.3					6.4	33.1	35	7.0	36.1	50	8.2	42.1	60	10.3	52.3	90	12.7	63.8	120		
250	10	267.4					6.4	41.2	35	7.8	49.9	50	9.3	59.2	60	12.7	79.8	90	15.1	93.9	120		
300	12	318.5	6.4	55.1	20	6.4	49.3	35	8.4	64.2	50	10.3	78.3	60	14.3	107	90	17.4	129	120			
350	14	355.6	6.4	63.1	20	7.9	67.7	35	9.5	81.1	50	11.1	94.3	60	15.1	127	90	19.0	158			-	
400	16	406.4	6.4	71.1	20	7.9	77.6	35	9.5	93.0	50	12.7	123	60	16.7	160	90	21.4	203			-	
450	18	457.2	6.4	79.2	20	7.9	87.5	35	11.1	122	50	14.3	156	60	19.0	205	90	-	-			-	
500	20	508.8	6.4	87.2	20	9.5	117	35	12.7	155	50	15.1	184	60	20.6	248	60	-	-			-	
550	22	558.8	6.4	95.2	20	9.5	129	35	12.7	171	50	15.9	213	60	-	-	-	-	-			-	
600	24	609.6				9.5	141	35	14.3	228	50	-	-	-	-	-	-	-	-			-	

Note : Tolerance of (Dimensions) 1) Tolerance of Outside Diameter : 25A or Under ± 0.3 mm, 32A or larger, $\pm 0.8\%$
 2) Tolerance of Wall Thickness : 3mm Under ± 0.3 mm, 3mm or thicker $\pm 10\%$



KSD 3631 Carbon Steel Pipes for Fuel Gas Piping

Nominal Size		Outside Diameter	Tolerance of Outside Diameter	Thickness	Tolerance of Wall Thickness	Weight
A	B	mm		mm		kg/m
15	1/2	21.7	± 0.5 mm	2.65	+ Not specified -12.5%	1.25
20	3/4	27.2	± 0.5 mm	2.65		1.60
25	1	34.0	± 0.5 mm	3.25		2.45
32	1 1/4	42.7	± 0.5 mm	3.25		3.16
40	1 1/2	48.6	± 0.5 mm	3.25		3.63
50	2	60.5	$\pm 1\%$	3.65		5.12
65	2 1/2	76.3	$\pm 1\%$	3.65		6.54
80	3	89.1	$\pm 1\%$	4.05		8.49
90	3 1/2	101.6	$\pm 1\%$	4.05		9.74
100	4	114.3	$\pm 1\%$	4.5		12.2
125	5	139.8	$\pm 1\%$	4.85		16.1
150	6	165.2	$\pm 1\%$	4.85		19.2
200	8	216.3	$\pm 1\%$	5.85		30.4
250	10	267.4	$\pm 1\%$	6.40		41.2
300	12	318.5	$\pm 1\%$	7.0		53.8
350	14	355.6	$\pm 1\%$	7.60		65.2
400	16	406.4	$\pm 1\%$	7.9	77.6	
450	18	457.2	$\pm 1\%$	7.9	87.5	
500	20	508.8	$\pm 1\%$	7.9	97.4	
550	22	558.8	$\pm 1\%$	7.9	107.3	
600	24	609.6	$\pm 1\%$	7.9	117.2	

JIS C 8305(KS C 8401) Rigid Steel Conduit

Nominal Size	Outside Diameter	Tolerance of Outside Diameter	Wall Thickness	Weight	Effective Length of Thread Part (mm)	
					(Max)	(Min)
G 16	21.0	± 0.3	2.3	1.06	19	16
G 22	26.5	± 0.3	2.3	1.37	22	19
G 28	33.3	± 0.3	2.5	1.90	25	22
G 36	41.9	± 0.3	2.5	2.43	28	25
G 42	47.8	± 0.3	2.5	2.79	28	25
G 54	59.6	± 0.3	2.8	3.92	32	28
G 70	75.2	± 0.3	2.8	5.00	36	32
G 82	87.9	± 0.3	2.8	5.88	40	36
G 92	100.7	± 0.4	3.5	8.39	42	36
G 104	113.4	± 0.4	3.5	9.48	45	39



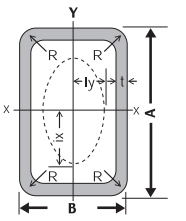
JIS G 3461(KS D 3563) Carbon Steel Boiler and Heat Exchanger Tubes

Outside Diameter (mm)	Wall Thickness (mm)	1.2	1.6	2.0	2.3	2.6	2.9	3.2	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
		15.9	0.435	0.564	0.686	0.771	0.853	0.930								
19.0	0.527	0.687	0.838	0.947	1.05	1.15										
21.7	0.607	0.793	0.972	1.10	1.22	1.34	1.46									
25.4	0.716	0.939	1.15	1.31	1.46	1.61	1.75	1.89								
27.2	0.769	1.01	1.24	1.41	1.58	1.74	1.89	2.05	2.29							
31.8	906.0	1.19	1.47	1.67	1.87	2.07	2.26	2.44	2.74	3.03						
34.0		1.28	1.58	1.80	2.01	2.22	2.43	2.63	2.96	3.27	3.58					
38.1		1.44	1.78	2.03	2.28	2.52	2.75	2.99	3.36	3.73	4.08	4.42				
42.7			2.01	2.29	2.57	2.85	3.12	3.38	3.82	4.24	4.65	5.05	5.43			
45.0			2.12	2.42	2.72	3.01	3.30	3.58	4.04	4.49	4.93	5.36	5.77	6.17		
48.6			2.30	2.63	2.95	3.27	3.58	3.89	4.40	4.89	5.38	5.85	6.30	6.75	7.18	
50.8			2.41	2.75	3.09	3.43	3.76	4.08	4.62	5.14	5.65	6.14	6.63	7.10	7.56	
54.0			2.56	2.93	3.30	3.65	4.01	4.36	4.93	5.49	6.04	6.58	7.10	7.61	8.11	
57.1			2.72	3.11	3.49	3.88	4.25	4.63	5.24	5.84	6.42	7.00	7.56	8.11	8.65	
60.3			2.88	3.29	3.70	4.10	4.51	4.90	5.55	6.19	6.82	7.43	8.03	8.62	9.20	
63.5				3.47	3.90	4.33	4.76	5.18	5.87	6.55	7.21	7.87	8.51	9.14	9.75	
65.0				3.56	4.00	4.44	4.88	5.31	6.02	6.71	7.40	8.07	8.73	9.38	10.0	
70.0				3.84	4.32	4.80	5.27	5.74	6.51	7.27	8.01	8.75	9.47	10.2	10.9	
76.2				4.19	4.72	5.24	5.76	6.27	7.12	7.96	8.78	9.59	10.4	11.2	11.9	
82.6							6.27	6.83	7.75	8.67	9.57	10.5	11.3	12.2	13.1	
88.9							6.76	7.37	8.37	9.37	10.3	11.3	12.3	13.2	14.1	
101.6								8.47	9.63	10.8	11.9	13.0	14.1	15.2	16.3	
114.3									10.9	12.2	13.5	14.8	16.0	17.3	18.5	
127.0									12.1	13.6	15.0	16.5	17.9	19.3	20.7	
139.8											18.2	19.8	21.4	22.9		

Note : Length : Max 25m



JIS G 3466(KS D 3568) Square Tubes



Normal Size (mm)	Wall Thickness (mm)	Weight (kg/m)	Cross Sectional Area (cm ²)	Moment of Inertia (cm ⁴)	Modulus of Section (cm ³)	Radius of Gyration (cm)
				Ix Iy	Zx Zy	ix iy
200 x 200	4.5	27.2	34.67	219 x 10	219	7.95
	5.0	30.1	45.63	283 x 10	283	7.88
	6.0	35.8	59.79	362 x 10	362	7.78
	9.0	52.3	66.67	399 x 10	399	7.73
250 x 250	12.0	67.9	86.53	498 x 10	498	7.59
	5.0	38.0	48.36	481 x 10	384	9.97
	6.0	45.2	57.63	567 x 10	454	9.92
	8.0	59.5	75.79	732 x 10	585	9.82
300 x 300	9.0	66.5	84.67	809 x 10	647	9.78
	12.0	86.8	110.5	103 x 10 ²	820	9.63
	4.5	41.3	52.67	763 x 10	508	12.0
	6.0	54.7	69.63	996 x 10	664	12.0
350 x 350	9.0	80.6	102.7	143 x 10 ²	956	11.8
	12.0	106	134.5	183 x 10 ²	122 x 10	11.7
	9.0	94.7	120.7	232 x 10 ²	132 x 10	13.9
400 x 400	12.0	124	158.5	298 x 10 ²	170 x 10	13.7
	9.0	109	138.7	35,063	1,753	15.90
	12.0	143	182.5	45,300	2,270	15.80
	14.0	166	211.1	51,780	2,589	15.66
	16.0	188	239.2	57,942	2,897	15.57
450 x 450	19.0	220	280.3	66,600	3,330	15.4
	22.0	251	320.2	74,700	3,740	15.3
	9.0	122	156.7	46,700	2,210	17.9
	12.0	160	206.5	64,200	2,850	17.7
	16.0	209	271.2	81,800	3,640	17.5
500 x 500	19.0	250	318.3	97,100	4,310	17.5
	22.0	286	364.2	109,000	4,850	17.3
	12.0	181	230.5	90,800	12.0	19.8
	16.0	238	303.2	117,000	16.0	19.6
500 x 500	19.0	280	356.2	136,000	19.0	19.5
	22.0	320	408.2	153,000	22.0	19.4

Note : 1) $I = ai^2$
 2) $i = \sqrt{I/a}$
 3) $Z = I/e$



KSD 3566(JIS G 3444) Carbon Steel Tubes for General Structural Purposes

Outside Diameter	Wall Thickness	Cross Sectional Area	Weight	Moment of Inertia	Modulus of Section	Radius of Gyration
mm	mm	cm ²	kg/m	cm ⁴	cm ³	cm
21.7	2.0	1238	0.972	0.672	0.560	0.700
27.2	2.0	1583	1.24	126	0.930	0.890
	2.3	1799	1.41	1.41	1.03	0.880
34.0	2.3	2291	1.80	2.89	1.70	1.12
42.7	2.3	2919	2.29	5.97	2.80	1.43
	2.5	3157	2.48	6.40	3.00	1.42
48.6	2.3	3345	2.63	8.99	3.70	1.64
	2.5	3621	2.84	9.65	3.97	1.63
	2.8	4029	3.16	10.6	4.36	1.62
	3.2	4564	3.58	11.8	4.86	1.61
60.5	2.3	4205	3.30	17.8	5.90	2.06
	3.2	5760	4.52	23.7	7.84	2.03
	4.0	7100	5.57	28.5	9.41	2.00
76.3	2.8	6465	5.08	43.7	11.5	2.60
	3.2	7349	5.77	49.2	12.9	2.59
	4.0	9085	7.13	59.5	15.6	2.58
89.1	2.8	7591	5.96	70.7	15.9	3.05
	3.2	8636	6.78	79.8	17.9	3.04
101.6	3.2	9892	7.76	120	23.6	3.48
	4.0	1226	9.63	146	28.8	3.45
	5.0	1511	11.9	177	34.9	3.42
114.3	3.2	1117	8.77	172	30.2	3.93
	3.5	1218	9.58	187	32.7	3.92
	4.5	1552	12.2	234	41.0	3.89
139.8	3.6	1540	12.1	357	51.1	4.82
	4.0	17.07	13.4	394	56.3	4.80
	4.5	19.13	15.0	438	62.7	4.79
	6.0	25.22	19.8	566	80.9	4.74
165.2	4.5	22.72	17.8	734	88.9	5.68
	5.0	25.16	19.8	808	97.8	5.67
	6.0	30.01	23.6	952	115	5.63
	7.1	35.26	27.7	110 × 10	134	5.60
	8.2	47.01	36.9	196 × 10	206	6.46
190.7	4.5	26.32	20.7	114 × 10	120	6.59
	5.3	30.87	24.2	133 × 10	139	6.56
	6.0	34.82	27.3	149 × 10	156	6.53
	7.0	40.40	31.7	171 × 10	179	6.50
	8.2	47.01	36.9	196 × 10	206	6.46
216.3	4.5	29.94	23.5	168 × 10	155	7.49
	5.8	38.36	30.1	213 × 10	197	7.45
	6.0	39.64	31.1	219 × 10	203	7.44
	7.0	46.03	36.1	252 × 10	233	7.40
	8.0	52.35	41.1	284 × 10	263	7.37
	8.2	53.61	42.1	291 × 10	269	7.36
	9.0	61.00	48.0	330 × 10	300	7.32
	10.0	76.00	60.0	410 × 10	370	7.28

Outside Diameter	Wall Thickness	Cross Sectional Area	Weight	Moment of Inertia	Modulus of Section	Radius of Gyration
mm	mm	cm ²	kg/m	cm ⁴	cm ³	cm
267.4	6.0	49.27	38.7	421 × 10	315	9.24
	6.6	54.08	42.4	460 × 10	344	9.22
	7.0	57.26	45.0	486 × 10	363	9.21
	8.0	65.19	51.2	549 × 10	411	9.18
	9.0	73.06	57.3	611 × 10	457	9.14
318.5	9.3	75.41	59.2	629 × 10	470	9.13
	6.0	58.91	46.2	719 × 10	452	11.1
	6.9	67.55	53.0	820 × 10	515	11.0
	8.0	78.04	61.3	941 × 10	591	11.0
	9.0	87.51	68.7	105 × 10 ²	659	10.9
355.6	10.3	99.73	78.3	119 × 10 ²	744	10.9
	6.4	70.21	55.1	107 × 10 ²	602	12.3
	7.9	86.29	67.7	130 × 10 ²	734	12.3
	9.0	98.00	76.9	147 × 10 ²	828	12.3
	9.5	103.3	81.1	155 × 10 ²	871	12.2
406.4	12.0	129.5	102	191 × 10 ²	108 × 10	12.2
	12.7	136.8	107	201 × 10 ²	113 × 10	12.1
	7.9	98.90	77.6	196 × 10 ²	967	14.1
	9.0	112.4	88.2	222 × 10 ²	109 × 10	14.1
	9.5	118.5	93.0	233 × 10 ²	115 × 10	14.0
	12.0	148.7	117	289 × 10 ²	142 × 10	14.0
	12.7	157.1	123	305 × 10 ²	150 × 10	13.9
457.2	16.0	196.2	154	374 × 10 ²	184 × 10	13.8
	19.0	231.2	182	435 × 10 ²	214 × 10	13.7
	9.0	126.7	99.5	318 × 10 ²	140 × 10	15.8
	9.5	133.6	105	335 × 10 ²	147 × 10	15.8
	12.0	167.8	132	416 × 10 ²	182 × 10	15.7
500	12.7	177.3	139	438 × 10 ²	192 × 10	15.7
	16.0	221.8	174	540 × 10 ²	236 × 10	15.6
	19.0	261.6	205	629 × 10 ²	275 × 10	15.5
	9.0	138.8	109	418 × 10 ²	167 × 10	17.4
	12.0	184.0	144	548 × 10 ²	219 × 10	17.3
508.0	14.0	213.8	168	632 × 10 ²	253 × 10	17.2
	7.9	124.1	97.4	388 × 10 ²	153 × 10	17.7
	9.0	141.1	111	439 × 10 ²	173 × 10	17.6
	9.5	148.8	117	462 × 10 ²	182 × 10	17.6
	12.0	187.0	147	575 × 10 ²	227 × 10	17.5
	12.7	197.6	155	606 × 10 ²	239 × 10	17.5
	14.0	217.3	171	663 × 10 ²	261 × 10	17.5
	16.0	247.3	194	749 × 10 ²	295 × 10	17.4
558.8	19.0	291.9	229	874 × 10 ²	344 × 10	17.3
	22.0	335.9	264	994 × 10 ²	391 × 10	17.2
	9.0	155.5	122	588 × 10 ²	210 × 10	19.4
	12.0	206.1	162	771 × 10 ²	276 × 10	19.3
	16.0	272.8	214	101 × 10 ³	360 × 10	19.2
600	19.0	322.8	253	118 × 10 ³	421 × 10	19.1
	22.0	371.0	291	134 × 10 ³	479 × 10	19.0
	9.0	167.1	131	730 × 10 ²	243 × 10	20.9
	12.0	221.1	174	958 × 10 ²	320 × 10	20.8
609.6	14.0	257.7	202	111 × 10 ³	369 × 10	20.7
	16.0	293.6	230	125 × 10 ³	418 × 10	20.7
	9.0	169.8	133	766 × 10 ²	251 × 10	21.2
	9.5	179.1	141	806 × 10 ²	265 × 10	21.2
	12.0	225.3	177	101 × 10 ³	330 × 10	21.1
	12.7	238.2	187	106 × 10 ³	348 × 10	21.1
	14.0	262.0	206	116 × 10 ³	381 × 10	21.1
	16.0	298.4	234	132 × 10 ³	431 × 10	21.0
609.6	19.0	352.5	277	154 × 10 ³	505 × 10	20.9
	22.0	406.1	319	176 × 10 ³	576 × 10	20.8



KS F 4602(JIS A 5525) STEEL PIPE PILES

Outside Diameter	Wall Thickness	Cross Sectional Area	Weight	Moment of Inertia	Modulus of Section	Radius of Gyration	Superficial Area Per Meter
mm	mm	cm ²	kg/m	cm ⁴	cm ³	cm	m ² /m
406.4	9	112.4	88.2	222 × 10 ⁶	109 × 10	14.0	1.28
	10	124.5	97.8	245 × 10 ⁶	120 × 10	14.0	1.28
	11	136.6	107.0	267 × 10 ⁶	132 × 10	14.0	1.28
	12	148.7	117	289 × 10 ⁶	142 × 10	14.0	1.28
508.0	9	141.1	111	439 × 10 ⁶	173 × 10	17.6	1.60
	10	156.4	123	485 × 10 ⁶	191 × 10	17.6	1.60
	11	171.8	135	531 × 10 ⁶	209 × 10	17.6	1.60
	12	187.0	147	575 × 10 ⁶	227 × 10	17.5	1.60
	13	202.2	159	620 × 10 ⁶	244 × 10	17.5	1.60
	14	217.3	171	663 × 10 ⁶	261 × 10	17.5	1.60
609.6	9	169.8	133	766 × 10 ⁶	251 × 10	21.2	1.92
	10	188.4	148	847 × 10 ⁶	278 × 10	21.2	1.92
	11	206.9	162	927 × 10 ⁶	304 × 10	21.2	1.92
	12	225.3	177	101 × 10 ⁶	330 × 10	21.1	1.92
	13	243.6	191	108 × 10 ⁶	356 × 10	21.1	1.92
	14	262.0	206	116 × 10 ⁶	381 × 10	21.1	1.92
	15	280.2	220	124 × 10 ⁶	407 × 10	21.0	1.92
	16	298.4	234	132 × 10 ⁶	431 × 10	21.0	1.92



Fence Tubes / CARBON STEEL TUBES FOR STRUCTURAL PURPOSES

Size	Outside Diameter		Wall Thickness		Weight of Plain Ends			
	mm	in.	mm	in.	lb/ft	kg/ft	kg/m	
0.840 × 0.080	21.34	0.840	2.03	0.080	0.649	0.294	0.966	
	21.69	0.854	1.91	0.075	0.624	0.283	0.929	
	26.67	1.050	2.34	0.092	0.941	0.427	1.400	
1.315 × 0.047	33.40	1.315	1.19	0.047	0.636	0.289	0.947	
	0.055	33.40	1.315	1.40	0.055	0.740	1.10	
	0.065	33.40	1.315	1.65	0.065	0.868	1.29	
	0.069	33.40	1.315	1.75	0.069	0.918	1.37	
	0.072	33.40	1.315	1.83	0.072	0.956	1.42	
	0.079	33.40	1.315	2.01	0.079	1.04	1.55	
	0.091	33.40	1.315	2.31	0.091	1.19	1.77	
	0.094	33.40	1.315	2.39	0.094	1.23	1.82	
	0.104	33.40	1.315	2.64	0.104	1.36	2.00	
	1.660 × 0.047	42.16	1.660	1.19	0.047	0.810	0.367	1.20
0.055		42.16	1.660	1.40	0.055	0.943	1.40	
0.065		42.16	1.660	1.65	0.065	1.11	1.65	
0.069		42.16	1.660	1.75	0.069	1.17	1.74	
0.072		42.16	1.660	1.83	0.072	1.22	1.82	
0.079		42.16	1.660	2.01	0.079	1.33	1.99	
0.094		42.16	1.660	2.39	0.094	1.57	2.34	
0.104		42.16	1.660	2.64	0.104	1.73	2.57	
0.116		42.16	1.660	2.95	0.116	1.91	2.85	
1.900 × 0.055		48.26	1.900	1.40	0.055	1.08	0.492	1.61
	0.065	48.26	1.900	1.65	0.065	1.27	1.90	
	0.069	48.26	1.900	1.75	0.069	1.35	2.01	
	0.072	48.26	1.900	1.83	0.072	1.41	2.09	
	0.079	48.26	1.900	2.01	0.079	1.54	2.29	
	0.094	48.26	1.900	2.39	0.094	1.81	2.70	
	0.104	48.26	1.900	2.64	0.104	1.99	2.97	
	0.116	48.26	1.900	2.95	0.116	2.21	3.29	
	2.375 × 0.055	60.33	2.375	1.40	0.055	1.36	0.618	2.03
		0.065	60.33	1.65	0.065	1.60	0.727	2.39
0.069		60.33	1.75	0.069	1.70	0.771	2.53	
0.072		60.33	1.83	0.072	1.77	0.803	2.64	
0.079		60.33	2.01	0.079	1.94	0.879	2.88	
0.094		60.33	2.39	0.094	2.29	1.04	3.41	
0.104		60.33	2.64	0.104	2.52	1.14	3.75	
0.116		60.33	2.95	0.116	2.80	1.27	4.16	
2.875 × 0.116	73.08	2.875	2.95	0.116	3.42	1.55	5.09	
	0.128	73.08	3.25	0.128	3.76	1.70	5.59	
3000 × 0.083	76.2	3.000	2.11	0.083	2.59	1.17	3.85	
	0.128	76.2	3.25	0.128	3.93	1.78	5.84	
3.475 × 0.128	88.27	3.475	3.25	0.128	4.58	2.08	6.81	
3.500 × 0.120	88.90	3.500	3.05	0.120	4.33	1.96	6.44	
	0.128	88.90	3.25	0.128	4.61	2.09	6.86	
4.000 × 0.134	101.6	4.000	3.40	0.134	5.53	2.51	8.23	
	0.145	101.6	3.68	0.145	5.97	2.71	8.88	
	0.226	101.6	5.74	0.226	9.11	4.13	13.56	