

BAOLAI STEEL



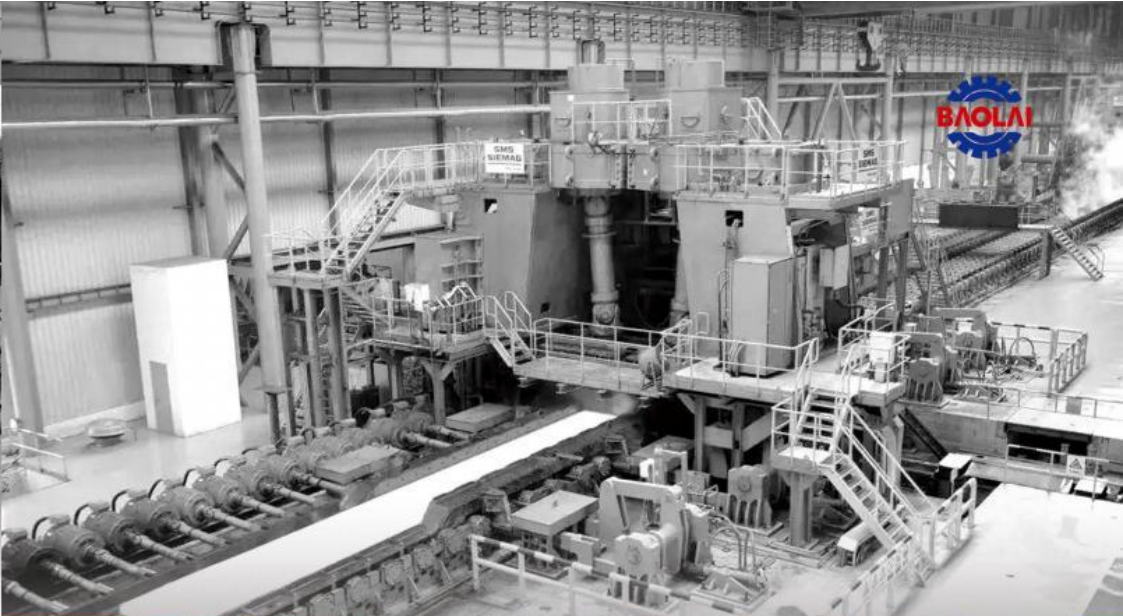
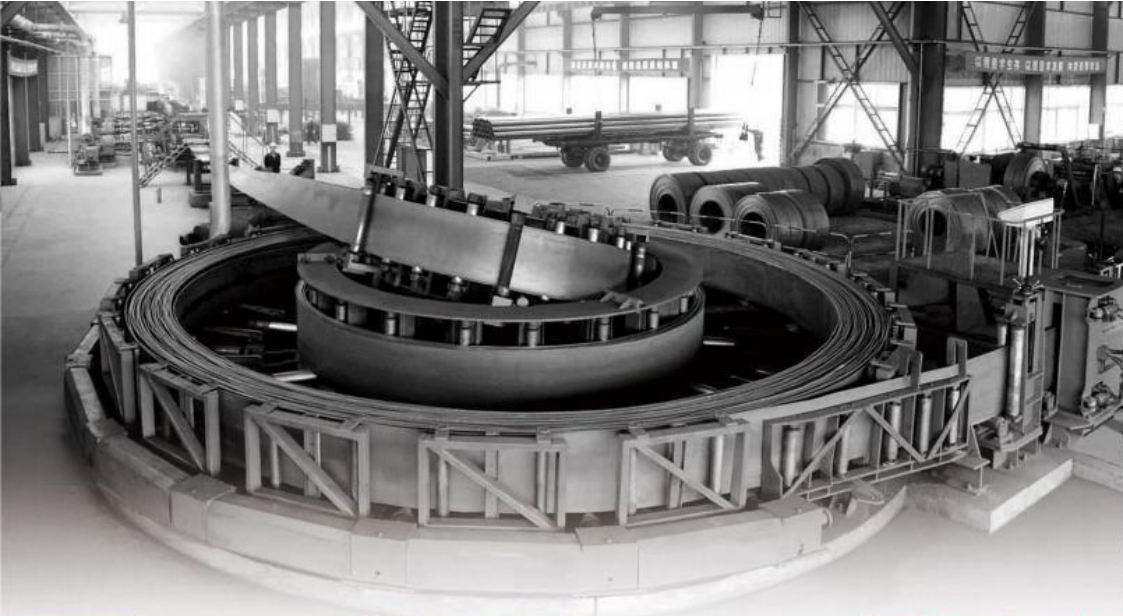
COMPANY PROFILE

Tianjin Baolai Steel Group Co., Ltd is a comprehensive company, which focus on steel pipes and other steel products. Established in 1991, Baolai is among the first few specialized companies that develop and manufacture ordinary and special diameter steel pipes. We manufacture API, ASTM, BS, DIN and JIS standards pipes with galvanizing facility. Our annual capacity is approximately 2,300,000MT in various specifications and export 150,000MT to all over the world.

We have been awarded "Top Ten Collective and Private Exporters of Tianjin" by Tianjin Commerce Department, "Top Ten Exporters of Hexi District" by Tianjin Hexi Commerce Department, "Top 100 Enterprises of Tianjin" and "Top 300 International Trade companies of Tianjin" by Tianjin government, and a credit rating "AAA" by banks.

Apart from being the supplier of a comprehensive range of our products, Baolai aims to extend its commitment to customers by enhancing its services and adding new facilities. A dedicated team is tasked to provide technical support so as to advise the proper usage of steel and assist customers in using the products to its best advantage.







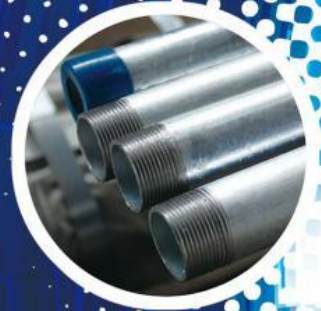
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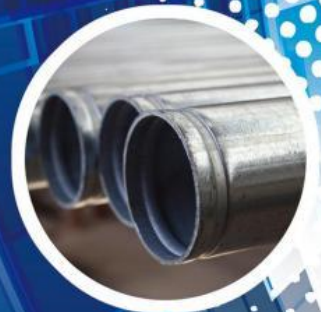
Galvanizing
Fabrication



Painted Pipe Workshop



Threaded Galvanized Pipe



Grooved Pipe

BAOLAI 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	—	340-460MPa	210MPa			
BSEN10255	L	Carbon Steel pipes for ordinary piping	0.20	—	1.4	0.035	0.030	—	320-520MPa	195MPa			
	M												
	H												
BS 3059	320	For Boiler	0.16	0.35	1.30-0.70	0.040	0.040	—	340-480MPa	195MPa			
320	Pipes for Pressure Service	0.16	—	—	340-480MPa			195MPa					
BS 3601	360	Pipes for Pressure Service	0.17	0.35	1.40-0.80	0.040	0.040	—	360-500MPa	235MPa			
	430		1.40-1.20		—			430-570MPa	275MPa				
	ERW 1		0.13		—			0.60	—	300MPa	200MPa		
BS 6323 Part 5 Type KM	ERW 2	Carbon steel pipes for Mechanical Structural Purposes and General Structural Purposes	0.16	—	0.70	0.050	0.050	—	340MPa	250MPa			
	ERW 3		0.20	—	0.90			—	400MPa	300MPa			
	ERW 4		0.25	0.35	1.20			—	450MPa	350MPa			
	ERW 5		0.23	—	1.50			—	500MPa	420MPa			
	L175(A25)		0.21	0.50	0.60			—	—	—	310MPa (45000 psi)	175MPa (25400 psi)	
API 5L (PSL 1)	L175P(A25P)	Line Pipe	0.26	—	0.90	0.030	0.030	—	310MPa (45000 psi)	175MPa (25400 psi)			
	L210(A)							0.22	0.045-0.080	—	335MPa (48000 psi)	210MPa (30500 psi)	
	L245(B)							—	1.20	—	415MPa (60200 psi)	290MPa (42100 psi)	
	L290(X42)							—	1.30	—	415MPa (60200 psi)	320MPa (46400 psi)	
	L320(X46)							—	—	—	435MPa (63100 psi)	290MPa (42100 psi)	
	L360(X52)							—	1.40	0.030	—	460MPa (66700 psi)	360MPa (52000 psi)
	L390(X56)							—	—	—	—	490MPa (71100 psi)	390MPa (56000 psi)
	L415(X60)							—	1.45	—	—	520MPa (75400 psi)	415MPa (60200 psi)
	L450(X65)							—	1.65	—	—	535MPa (77600 psi)	450MPa (65300 psi)
	L480(X70)							—	1.85	—	—	570MPa (82700 psi)	465MPa (67300 psi)
	L245M(BM)							—	1.20	—	—	415-760MPa (60200-110200 psi)	245-450MPa (35500-65300 psi)
	L290M(X42M)							—	1.30	—	—	415-760MPa (60200-110200 psi)	290-495MPa (42100-71800 psi)
	L320M(X46M)							—	—	—	—	435-760MPa (60100-110200 psi)	320-525MPa (46400-76100 psi)
	L360M(X52M)							—	1.40	0.025	0.015	465-760MPa (66700-110200 psi)	360-530MPa (52200-76900 psi)
L390M(X56M)	—	—	—	—	490-760MPa (71100-110200 psi)	390-545MPa (56000-79000 psi)							
L415M(X60M)	—	1.45	—	—	490-760MPa (71100-110200 psi)	390-545MPa (56000-79000 psi)							
L460M(X66M)	—	1.65	—	—	520-760MPa (75400-110200 psi)	415-565MPa (60200-81900 psi)							
L485M(X70M)	—	1.85	—	—	520-760MPa (82700-110200 psi)	485-635MPa (70300-92100 psi)							
L555M(X80M)	—	—	—	—	625-825MPa (90600-119700 psi)	555-705MPa (80500-102300 psi)							
API 5CT	J-55	Casing & Tubing	—	—	—	0.03	0.03	—	517MPa (75000 psi)	379-552MPa (55000-80000 psi)			
	K-55		—	—	—			655MPa (95000 psi)	379-552MPa (55000-80000 psi)				
	N-80		—	—	—			689MPa (100000 psi)	552-655MPa (80000-93000 psi)				
	L-80		—	—	—			655MPa (95000 psi)	552-655MPa (80000-93000 psi)				
	P-110		—	—	—			—	758-965MPa (110000-140000 psi)				

Specifications	Application	Elongation Min(%)	Flattening Test	Bend Test	Hydrostatic & NDT	Others							
							Longitudinal Direction	Transverse Direction					
BS 1139	—	22	—	Black: 190°X6D Galva: 90°X3D	—	* Copper sulfate test: 4times(1 minute) * Zn Coating Weight: 300 g/m ² min							
BSEN10255	Carbon Steel pipes for ordinary piping	20	—	Larger than DN 50 Weld portion:H=0.75D The other side of weld portion:H=0.6D	DN 50 and Smaller D 21.3, 26.8, 33.7, 42.4, 48.3, 60.3 R 48.3, 60.3, 100, 130, 178, 220	50Bar or NDT	* Copper sulfate test: 4times(1 minute)						
								25	H= $\frac{(1+C)}{C+10}$ C:0.10	P= $\frac{2\sigma_s}{D}$ or NDT	* Heat treatment on the weld seam area		
								25	H= $\frac{(1+C)}{C+10}$ C:0.10 Gr: 320 0.023 0.10 *C: Constant 360 0.026 0.09 430 0.023 0.08				
BS 6323 Part 5 Type KM	Carbon steel pipes for Mechanical Structural Purposes and General Structural Purposes	10	D/t ≤ 20	H = 0.66D	—	50Bar or P = $\frac{2\sigma_s}{D}$	* Minimum expansion drift expanding test * Type GKM, GZF: annealing * Type NKM, NZF: Normalizing						
								8	H = 0.75D				
								7	H = 0.85D				
								6	H = 0.85D				
								6	H = 0.85D				
								6	H = 0.85D				
API 5L (PSL 1)	Line Pipe	e-625,000 x $\frac{A^{0.2}}{UTS}$	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= $\frac{3.07t}{0.07+3t/D}$ less than x 52 H= $\frac{3.05t}{0.05+3t/D}$ x 52 and higher	2 1/2 and Smaller 90° X 12D	P= $\frac{2\sigma_s}{D}$ σs: 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(PSL2)						
								L210(A)	Grade	Size Designation	Percent of specified min. yield strength / Standard Test Pressure		
								L245(B)	A25	5 9/16	60	—	
								L290(X42)	A	2 3/8 and larger	80	75	
								L320(X46)	B	5 9/16 and smaller	80	75	
								L360(X52)	X42-X60	5 9/16 and smaller	60	75	
								L390(X56)		6 5/8 and 8 5/8	75	75	
								L415(X60)		10 3/4 in flared	85	80	
								L450(X65)		20 and larger	90	90	
								L480(X70)					
								L245M(BM)					
								L290M(X42M)					
								L320M(X46M)					
								L360M(X52M)					
L390M(X56M)													
L415M(X60M)													
L460M(X66M)													
L485M(X70M)													
L555M(X80M)													
API 5CT	Casing & Tubing	e-625,000 x $\frac{A^{0.2}}{UTS}$	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) 9 ≤ D/t ≤ 28, H=D(1.074-0.0194 D/t) HD = D(1.086-0.0163 D/t)	—	P= $\frac{2\sigma_s}{D}$ t type and NDT. P= hydrostatic test pressure in psi t = a factor of 0.6 or 0.8, P = specified yield strength for the pipe body in psi t = specified wall thickness in inch D = Specified Outside diameter in inch Factor f	* Heat treatment on the weld seam area * Fracture Toughness Test						
								J-55	Standard Test pressure	107	—	—	—
								K-55	107	—	—	—	
								N-80	107	—	—	—	
								L-80	107	—	—	—	
P-110	107	—	—	—									

BAOLAI 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	330MPa (48000 psi)	205MPa (30000 psi)	
	B		0.30	—	1.20	0.05	0.045	MOs0.15 V≤0.08	415MPa (60000 psi)	240MPa (35000 psi)	
ASTM A178	A	Boiler Tube	0.035	0.035	0.035	0.035	0.035	—	325MPa	180MPa	
	C								415MPa	255MPa	
	D								485MPa	275MPa	
ASTM A214	—	Heat-Exchanger & Condenser Tube	0.2	—	7~0	0.04	0	—	—		
ASTM A252	Grade I	—	—	—	—	0.05	—	—	345MPa (50000 psi)	207MPa (30000 psi)	
	Grade II								414MPa (60000 psi)	241MPa (35000 psi)	
	Grade III								455MPa (66000 psi)	310MPa (45000 psi)	
ASTM A500	A	Structural Carbon Steel Pipes in Round	0.30	—	—	0.045	0.045	cu ≥0.20	310MPa (45000 psi)	228MPa (33000 psi)	
	B		0.30	—	—	0.045	0.045		400MPa (58000 psi)	269MPa (42000 psi)	
	C		0.27	—	1.40	0.045	0.045		When required	428MPa (62000 psi)	317MPa (46000 psi)
	D		0.30	—	—	0.045	0.045		400MPa (58000 psi)	248MPa (36000 psi)	
	A	Structural Carbon Steel Pipes in Square & Rectangular	0.30	—	—	0.045	0.045	cu ≥0.20	310MPa (45000 psi)	269MPa (39000 psi)	
	B		0.30	—	—	0.045	0.045		400MPa (58000 psi)	317MPa (46000 psi)	
	C		0.27	—	1.40	0.045	0.045		When required	428MPa (62000 psi)	345MPa (50000 psi)
	D		0.30	—	—	0.045	0.045		400MPa (58000 psi)	248MPa (36000 psi)	
ASTM A589 (Type IV)	A	Water-well piping pipe	—	—	—	0.060	0.060	—	331MPa (48000 psi)	207MPa (30000 psi)	
	B		—	—	—	0.060	0.060		414MPa (60000 psi)	241MPa (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 x e: minimum elongation in 2 in (50.8) 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)	*2N Coating Weight :500 g/m ² min *Heat treatment on the weld seam area(Grade B)
35	H= (1+e)t / e+D e:0.07(C≥0.19) 0.09(C ≤ 0.18)	—	p = 220.69D 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= (1+e)t / e+D e:0.07(C≥0.19) 0.09(C ≤ 0.18)	—	p = 220.69D 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	H= (1+e)t / e+D A. e=0.07 B. e=0.09 C. e=0.06	—	—	If necessary, Stress relieved, annealed
23	—	—	—	—
21	—	—	—	—
23	—	—	—	—
25	—	—	—	—
23	—	—	—	—
21	—	—	—	—
23	—	—	—	—
e-625,000 x -A ^{1/2} / [D] 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	—	—	In accordance with the specified hydrostatic pressures	*2N Coating Weight :550 g/m ² (min)
—	Weld portion : H=2/3D The other side of weld portion: H=1/2D	—	In accordance with the specified hydrostatic pressures or NDT	*2N Coating Weight :460 g/m ² (min)

BAOLAI List of Specifications

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) SPPS 420 (STPG 410)	Pressure Service	0.25	0.35	0.30-0.90	0.040	0.040	—	380(38)	220(22)
			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) STBH 410 (STB 410) STBH 510 (STB 510)	Boiler and Heat Exchanger	0.18	0.35	0.30-0.60	0.035	0.035	—	340(35)	175(18)
			0.32	0.35	0.30-0.80	0.035	0.035	—	410(42)	255(26)
			0.25	0.35	1.00-1.50	0.035	0.035	—	510(52)	295(30)
KS C 8401 (JIS G 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 H= Distance between Flattening Plate D= Outside Diameter T= Wall Thickness	Bend Test	Hydrostatic & NDI P = Test Pressure (MPa) S = Fiber Stress (MPa)	Others																				
Specimen Type																									
11.12	5																								
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	<table border="1"> <tr> <td colspan="6">Unit = Kg/cm²</td> </tr> <tr> <td>SCH.NO</td> <td>1.0</td> <td>2.0</td> <td>3.0</td> <td>4.0</td> <td>5.0</td> <td>6.0</td> </tr> <tr> <td>test pressure</td> <td>2.0</td> <td>3.5</td> <td>5.0</td> <td>6.0</td> <td>9.0</td> <td>12.0</td> </tr> </table>	Unit = Kg/cm ²						SCH.NO	1.0	2.0	3.0	4.0	5.0	6.0	test pressure	2.0	3.5	5.0	6.0	9.0	12.0	—
Unit = Kg/cm ²																									
SCH.NO	1.0	2.0	3.0	4.0	5.0	6.0																			
test pressure	2.0	3.5	5.0	6.0	9.0	12.0																			
25	20																								
35	—	$H = \frac{(1+e)t}{e+1/D}$	—	$P = \frac{200st}{D}$ S = 60% x Yp Yp = Yield Point or NDT	* Full Body Normalizing * Flange Test * Reverse Flattening Test																				
25	—					e = 0.09																			
25	—					e = 0.08																			
25	—	e = 0.07	—	—	—																				
—	—	—	90° X 4D(G16,G22) 90° X 4D(G28)	—	Copper Sulfate test: 3 times (1 minute)																				
30	25	H = 2/3D	Outside Diameter 50mm and Under 90° X 8D	—	—																				
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	—	—	—	—																				

BAOLAI GALVANIZED FIRE PROTECTION PIPES

With superior zinc coated BAOLAI Galvanized Steel Pipes; you will maintain corrosion resistance and prevent rusting. Installation of Galvanized Pipe is allowed in wet and dry sprinkler systems.



- Widest range of UL and FM approval
- Wide production range between ½" – 6"
- Production availability acc. to ASTM and EN standards
- Reliable in easy flow light walls (min. 2 mm thickness), light series, medium series and heavy series
- Superior zinc coating (50-55 micron)
- Pressure ratings exceeding 300 psi (depending per size)
- Roll Grooved, Threaded & Coupled or Beveled options
- Custom length options (please contact with us for details)
- Inside weld bead is removed upon request
- Consistent roundness, consistent straightness
- Superior pipe end finishing
- Tight tolerances
- CE certified

- Compliant to main Project Requirements
- Maintains corrosion resistance
- Prevents rusting
- Long-lasting performance
- Easy to weld & install
- Perfect product tolerances with Lean 6 Sigma production technique
- Well established sales organization and excellent service (Voice of Customer)
- Compatible for use in wet, dry, preaction and deluge sprinkler systems
- Saves labor, time & cost



Welded steel pipe

Welded steel pipe is formed by rolling plate and welding the seam. There are ERW, LSAW and SSAW production processes. And we mainly supply HFW (High frequency welding) of ERW pipe. ERW steel pipe is cost-effective pipe with precise dimension and light weight. It is mainly used to convey fluid at low and medium pressures ambient, such as water line (cold & hot), firefighting pipeline, HVAC line, etc.

Baolai provides ERW steel pipe for fire fighting as standard:

- ▶ **ASTM A53 / A53M - 20** Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- ▶ **ASTM A795 / A795M - 21** Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
- ▶ **ASTM A135 / A135M - 16** Standard Specification for Electric-Resistance-Welded Steel Pipe
- ▶ **BS 1387:1985** Specification for Screwed and socketed steel tubes and tubulars and for plain end steel tubes suitable for welding or for screwing to BS 21 pipe threads
- ▶ **EN 10255:2004** Non-alloy steel tubes suitable for welding and threading
- ▶ **EN 10224:2002** Non-alloy steel tubes and fittings for the conveyance of water and other aqueous liquids - Technical delivery conditions
- ▶ **ASTM A312 / A312M - 17** Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic stainless Steel Pipes

ASTM A53 ERW steel pipe

ERW steel pipe is formed by rolling strip and welding the seam, with tighter dimensional tolerances and less weight. The weld seam is heat treated after welding that no untempered martensite remains, and the weld flash can be removed from both inner and outer surfaces.

ASTM A53 ERW steel pipe is a typical carbon steel pipe. It is largely used to convey fluids at low / medium pressures such as oil, gas, steam, water, air and also for mechanical applications.



- Certificate: UL Listed / FM Approved
- Standard: ASTM A53, Type E, Grade B / UL 852
- Length: 6m / 5.8m / 11.8m / 12m, customized
- End: Plain (square cut) / Beveled to 30° / Roll groove as AWWA C606 / NPT thread as ANSI B1.20.1
- Surface: Black paint to RAL 9005 / Red paint to RAL 3000 / Varnish paint / FBE to RAL3000 / Hot dip galvanized

Available size for Sch10 pipe

Size			Thickness	Mass	Test pressure	Ref. No.
NPS	DN	OD (mm)	T (mm)	kg/m	MPa	
1/2"	15	21.3	2.11	1.00	4.8	P0101 (ISO)
3/4"	20	26.7	2.11	1.28	4.8	P0102 (ISO)
1"	25	33.4	2.77	2.09	4.8	P0103 (ISO)
1-1/4"	32	42.2	2.77	2.69	9.0	P0104 (ISO)
1-1/2"	40	48.3	2.77	3.11	9.0	P0105 (ISO)
2"	50	60.3	2.77	3.93	13.2	P0106 (ISO)
2-1/2"	65	73.0	3.05	5.26	12.0	P0107 (ISO)
3"	80	88.9	3.05	6.46	9.9	P0108 (ISO)
4"	100	114.3	3.05	8.37	7.7	P0109 (ISO)
5"	125	141.3	3.40	11.56	6.9	P0110 (ISO)
6"	150	168.3	3.40	13.83	5.8	P0111 (ISO)
8"	200	219.1	3.76	19.97	4.9	P0112 (ISO)
10"	250	273.0	4.19	27.78	4.4	P0113 (ISO)
12"	300	323.8	4.57	35.96	4.1	P0114 (ISO)
14"	350	355.6	6.35	54.69	5.2	P0115 (ISO)

* Baolai refer to ASME B36.10M for listing Sch10 pipe. And the manufacturing method is HFW (high frequency electric resistance welding).

ASTM A53 ERW steel pipe

Available size for Sch40 pipe

Size			Thickness	Mass	Test pressure	Ref. No.
NPS	DN	OD (mm)	T (mm)	kg/m	MPa	
1/2"	15	21.3	2.77	1.27	4.8	P0121 (UL/FM)
3/4"	20	26.7	2.87	1.69	4.8	P0122 (UL/FM)
1"	25	33.4	3.38	2.50	4.8	P0123 (UL/FM)
1-1/4"	32	42.2	3.56	3.39	9.0	P0124 (UL/FM)
1-1/2"	40	48.3	3.68	4.05	9.0	P0125 (UL/FM)
2"	50	60.3	3.91	5.44	17.2	P0126 (UL/FM)
2-1/2"	65	73.0	5.16	8.63	17.2	P0127 (UL/FM)
3"	80	88.9	5.49	11.29	17.2	P0128 (UL/FM)
4"	100	114.3	6.02	16.08	15.2	P0129 (UL/FM)
5"	125	141.3	6.55	21.77	13.4	P0130 (UL/FM)
6"	150	168.3	7.11	28.26	12.3	P0131 (UL/FM)
8"	200	219.1	8.18	42.55	10.8	P0132 (UL/FM)
10"	250	273.0	9.27	60.29	9.9	P0133 (UL)
12"	300	323.8	10.31	79.71	9.2	P0134 (UL)
14"	350	355.6	11.13	94.55	9.0	P0135 (ISO)

* The manufacturing method is HFW (high frequency electric resistance welding), and available UOE/JCOE of LSAW for large size.

Permissible variations

Size			OD tolerance	THK tolerance		Remark
NPS	DN	OD (mm)	mm	Sch10 (mm)	Sch40 (mm)	
1/2"	15	21.3	20.9 ~ 21.7	1.85 ~ 2.53	2.42 ~ 3.32	1. For pipe ≤ NPS 1-1/2", OD tolerance is ± 0.40mm. 2. For pipe ≥ NPS 2", OD tolerance is ± 1%. 3. The min THK at any point is not more than 12.5%. 4. The max THK is not defined in ASTM A53, and TPMC refers to ASTM A530 with 20%, 22.5% or 15% as tD ratio.
3/4"	20	26.7	26.3 ~ 27.1	1.85 ~ 2.53	2.51 ~ 3.44	
1"	25	33.4	33.0 ~ 33.8	2.42 ~ 3.32	2.96 ~ 4.06	
1-1/4"	32	42.2	41.8 ~ 42.6	2.42 ~ 3.32	3.12 ~ 4.27	
1-1/2"	40	48.3	47.9 ~ 48.7	2.42 ~ 3.32	3.22 ~ 4.42	
2"	50	60.3	59.7 ~ 60.9	2.42 ~ 3.32	3.42 ~ 4.69	
2-1/2"	65	73.0	72.3 ~ 73.7	2.67 ~ 3.66	4.52 ~ 6.19	
3"	80	88.9	88.0 ~ 89.8	2.67 ~ 3.74	4.80 ~ 6.31	
4"	100	114.3	113.2 ~ 115.4	2.67 ~ 3.74	5.27 ~ 7.37	
5"	125	141.3	139.9 ~ 142.7	2.98 ~ 4.17	5.73 ~ 8.02	
6"	150	168.3	166.6 ~ 170.0	2.98 ~ 4.17	6.22 ~ 8.71	
8"	200	219.1	216.9 ~ 221.3	3.29 ~ 4.61	7.16 ~ 10.02	
10"	250	273.0	270.3 ~ 275.7	3.67 ~ 5.13	8.11 ~ 11.36	
12"	300	323.8	320.6 ~ 327.0	4.00 ~ 5.60	9.02 ~ 12.63	
14"	350	355.6	352.0 ~ 359.2	5.56 ~ 7.78	9.74 ~ 13.63	

Note:

1. For exact length (cut length), length tolerance is -0.0mm / +6.0mm, as ASTM A530.
2. The weight (mass) tolerance of unit pipe is ±10%.
3. For pipe ≤ NPS 4", weight is measured as per bundle. For pipe > NPS 4", measured as per individual length.

ASTM A795 ERW steel pipe

ERW steel pipe is formed by rolling strip and welding the seam, with tighter dimensional tolerances and less weight. The weld seam is heat treated after welding that no untempered martensite remains, and the weld flash can be removed from both inner and outer surfaces.

ASTM A795 ERW pipe is intended for use in water-based fire protection systems for water distribution or valve trim application, such as wet, dry, preaction, or deluge sprinkler systems.



- Certificate: UL Listed / FM Approved
- Standard: ASTM A795, Type E, Grade B / UL 852
- Length: 6m / 5.8m / 11.8m / 12m, customized
- End: Plain (square cut) / Beveled to 30° / Roll groove as AWWA C606 / NPT thread as ANSI B1.20.1
- Surface: Black paint to RAL 9005 / Red paint to RAL 3000 / Varnish paint / FBE to RAL3000 / Hot dip galvanized

Available size for Sch10 pipe

Size		Thickness	Mass	Test pressure	Ref. No.
NPS	DN				
3/4"	20	2.11	1.28	4.8	P0202 (UL/FM)
1"	25	2.77	2.09	4.8	P0203 (UL/FM)
1-1/4"	32	2.77	2.69	6.9	P0204 (UL/FM)
1-1/2"	40	2.77	3.11	6.9	P0205 (UL/FM)
2"	50	2.77	3.93	6.9	P0206 (UL/FM)
2-1/2"	65	3.05	5.26	6.9	P0207 (UL/FM)
3"	80	3.05	6.46	6.9	P0208 (UL/FM)
4"	100	3.05	8.37	8.3	P0209 (UL/FM)
5"	125	3.40	11.56	8.3	P0210 (UL/FM)
6"	150	3.40	13.83	6.9	P0211 (UL/FM)
8"	200	4.78	25.26	5.5	P0212 (UL/FM)
10"	250	4.78	31.63	4.8	P0213 (UL)

- Note:**
- For pipe NPS 8" and NPS 10", the thickness follows ASTM A795, not Sch10 of ASME B36.10M (8"/3.76mm, 10"/4.19mm).
 - The manufacturing method is HFW (high frequency electric resistance welding).

ASTM A795 ERW steel pipe

Available size for Sch40 pipe

Size			Thickness	Mass	Test pressure	Ref. No.
NPS	DN	OD (mm)				
1/2"	15	21.3	2.77	1.27	4.8	P0221 (ISO)
3/4"	20	26.7	2.87	1.69	4.8	P0222 (ISO)
1"	25	33.4	3.38	2.50	4.8	P0223 (UL)
1-1/4"	32	42.2	3.56	3.39	6.9	P0224 (UL)
1-1/2"	40	48.3	3.68	4.05	6.9	P0225 (UL)
2"	50	60.3	3.91	5.44	6.9	P0226 (UL)
2-1/2"	65	73.0	5.16	8.63	6.9	P0227 (UL)
3"	80	88.9	5.49	11.29	6.9	P0228 (UL)
4"	100	114.3	6.02	16.08	8.3	P0229 (UL)
5"	125	141.3	6.55	21.77	8.3	P0230 (UL)
6"	150	168.3	7.11	28.26	8.3	P0231 (UL)
8"	200	219.1	7.04	36.82	8.3	P0232 (ISO)
10"	250	273.1	7.80	51.03	6.9	P0233 (ISO)

Note:

- For pipe NPS 8" and NPS 10", the thickness follows Sch30 of ASME B36.10M, not Sch40 of ASME B36.10M (8"/8.18mm, 10"/9.27mm).
- The manufacturing method is HFW (high frequency electric resistance welding), and available UOE/JCOE of LSAW for large size.

Permissible variations

Size			OD tolerance	THK tolerance		Remark
NPS	DN	OD (mm)		Sch10 (mm)	Sch40 (mm)	
1/2"	15	21.3	20.9 ~ 21.7	/	2.42 ~ 3.32	1. For pipe ≤ NPS 1-1/2", OD tolerance is ±0.4mm. 2. For pipe ≥ NPS 2", OD tolerance is ±1%. 3. The min THK at any point is not more than 12.5%. 4. The max THK is not defined in ASTM A795, and TPMC refers to ASTM A530 with 20%, 22.5% or 15% as t/D ratio.
3/4"	20	26.7	26.3 ~ 27.1	1.85 ~ 2.53	2.51 ~ 3.44	
1"	25	33.4	33.0 ~ 33.8	2.42 ~ 3.32	2.96 ~ 4.06	
1-1/4"	32	42.2	41.8 ~ 42.6	2.42 ~ 3.32	3.12 ~ 4.27	
1-1/2"	40	48.3	47.9 ~ 48.7	2.42 ~ 3.32	3.22 ~ 4.42	
2"	50	60.3	59.7 ~ 60.9	2.42 ~ 3.32	3.42 ~ 4.69	
2-1/2"	65	73.0	72.3 ~ 73.7	2.67 ~ 3.66	4.52 ~ 6.19	
3"	80	88.9	88.0 ~ 89.8	2.67 ~ 3.74	4.80 ~ 6.31	
4"	100	114.3	113.2 ~ 115.4	2.67 ~ 3.74	5.27 ~ 7.37	
5"	125	141.3	139.9 ~ 142.7	2.98 ~ 4.17	5.73 ~ 8.02	
6"	150	168.3	166.6 ~ 170.0	2.98 ~ 4.17	6.22 ~ 8.71	
8"	200	219.1	216.9 ~ 221.3	4.18 ~ 5.86	6.16 ~ 8.62	
10"	250	273.1	270.4 ~ 275.8	4.18 ~ 5.86	6.83 ~ 9.56	

Note:

- For exact length (cut length), length tolerance is -0.0mm / +6.0mm, as ASTM A530.
- The weight (mass) tolerance of unit pipe is ±5%.
- For pipe ≤ NPS 4", weight is measured as per bundle. For pipe > NPS 4", measured as per individual length.

EN10255 ERW steel tube

ERW steel tube is formed by rolling strip and welding the seam, with tighter dimensional tolerances and less weight. The weld seam is heat treated after welding that no untempered martensite remains, and the weld flash can be removed from both inner and outer surfaces.

EN10255 is a non-alloy steel tubes specification suitable for welding and threading with Medium, Heavy, and three Light types of designated thickness. It is suitable for water lines (Cold & Hot), firefighting pipeline, HVAC lines, etc.

- Certificate: FM Approved
- Standard: EN10255 S 195T, Type W
- Length: 6m / 5.8m / 11.8m / 12m, customized
- End: Plain (square cut) / Beveled to 30° / Roll groove as ISO 6182-12 / BSPT thread as ISO 7-1
- Surface: Black paint to RAL 9005 / Red paint to RAL 3000 / Varnish paint / FBE to RAL3000 / Hot dip galvanized



Seamless steel pipe

Seamless steel pipe is formed by drawing a solid billet without welding or seam, and the advantage is the ability of withstanding higher pressure. It is mainly used in power plant, boiler, or firefighting pipeline where the piping must transport fluid and gas in high temperature and pressure level.

BAOLAI provides seamless steel pipe for firefighting as standard:

- ▶ **ASTM A106 / A106M - 18** Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
- ▶ **ASTM A53 / A53M - 20** Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- ▶ **ASTM A795 / A795M - 21** Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
- ▶ **EN 10255:2004** Non-alloy steel tubes suitable for welding and threading
- ▶ **EN 10216-1:2013** Seamless steel tubes for pressure purposes Part 1: Non-alloy steel tubes with specified room temperature properties
- ▶ **ASTM A312 / A312M - 17** Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes

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
3/4	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	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 1/4	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 1/2	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	--	--	--	--			
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	--	--	--	--			
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 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/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	--	--	--	--	--	--	--	
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	--	--	--	--	--	--	--	
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	--	--	--	--	--	--	--	--	--	
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	--	--	--	--	--	--	--	--	--	
16	16.000	406.4	0.450	11.4	49.55	73.57	Std	--	--	2800	3000	3000	
			Alt	--	--	--	--	--	--	--	--	--	
			0.495	12.6	54.26	80.94	Std	--	--	3700	--	--	
			Alt	--	--	--	--	--	--	--	3000	3000	3000
			0.545	13.8	59.45	88.24	Std	--	--	--	--	--	--
			Alt	--	--	--	--	--	--	--	--	--	--
20	20.000	508.0	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	--	--	--	--	--	--	--	3000	--	

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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
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	--
3/4	1.050	26.7	0.113	2.9	1.13	1.70	0.824	20.9	700	700	--	700	--
			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	--
1	1.315	33.4	0.133	3.4	1.68	2.52	1.049	26.6	700	700	--	700	--
			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	--
1 1/4	1.660	42.2	0.140	3.6	2.27	3.43	1.380	35.0	1000	1200	--	1300	--
			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	--
1 1/2	1.900	48.3	0.145	3.7	2.72	4.07	1.610	40.9	1000	1200	--	1300	--
			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	--

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade					
									A25 (L175)	A (L210)	B (L245)	X 42 (L290)	X 46 (L330)	X 52 (L360)	X 56 (L390)	X 60 (L415)	X 65 (L450)	X 70 (L485)	X 80 (L565)								
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	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	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	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	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	3000	-	-	-	-
									Alt	-	2500	2500	4560	5000	5650	6080	7120	7060	7260	-	-	-	-	-	-	-	-
0.188	4.8	4.40	6.57	1.999	50.7	Std	1200	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	-	-	-	-			
						Alt	-	2500	2500	4990	5460	6170	6650	7120	7260	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	3000	3000	-	-	-	-			
						Alt	-	2500	2500	5780	6330	7160	7260	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	3000	3000	-	-	-	-			
						Alt	-	2500	2500	6630	7260	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	3000	3000	-	-	-	-			
						Alt	-	2500	2500	7260	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	3000	3000	-	-	-	-			
						Alt	-	2500	2500	7260	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	2610	2800	-	-				
									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	3000	3000	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	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	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	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	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	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	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	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	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	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	800	1120	1310	1570	1720	1940	2090	2240	2430	2620	-	-	-	-							
						Alt	-	1400	1640	1960	2150	2430	2620	2800	3040	3270	-	-	-	-	-	-					

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade			
									A25 (L175)	A (L210)	B (L245)	X 42 (L290)	X 46 (L330)	X 52 (L360)	X 56 (L390)	X 60 (L415)	X 65 (L450)	X 70 (L485)	X 80 (L565)						
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	-	-	-			
									Alt	-	1610	1880	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	3000	3000	-	-	-	
									Alt	-	1810	2120	2540	2780	2940	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	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												

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
									A25 (L175)	A (L210)	B (L245)	X 42 (L290)	X 46 (L330)	X 52 (L360)	X 56 (L390)	X 60 (L415)	X 65 (L450)	X 70 (L485)	X 80 (L555)		
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	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	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	3000
									Alt	-	2190	2560	3070	3360	3800	4090	4380	4750	5110	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	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	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	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	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	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	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	2180	
									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	
									Alt	-	1260	1470	1770	1930	2190	2360	2520	2730	2940	3370	
			0.188	4.8	10.80	16.16	5.187	131.7	Std	1010	1220	1420	1700	1870	2110	2270	2430	2640	2840	3000	
									Alt	-	1520	1770	2130	2330	2640	2840	3040	3290	3550	4060	
			0.219	5.6	12.51	18.74	5.125	130.1	Std	1180	1420	1650	1980	2170	2460	2650	2830	3000	3000	3000	
									Alt	-	1770	2070	2480	2720	3070	3310	3540	3840	4130	4720	
			0.258	6.6	14.63	21.92	5.047	128.1	Std	1200	1670	1950	2340	2560	2890	3000	3000	3000	3000	3000	
									Alt	-	2090	2430	2920	3200	3620	3900	4170	4520	4870	5570	
			0.281	7.1	15.87	23.50	5.001	127.1	Std	1520	1820	2120	2550	2790	3000	3000	3000	3000	3000	3000	
									Alt	-	2270	2650	3180	3490	3940	4240	4550	4920	5300	6060	
0.312	7.9	17.51	25.99	4.939	125.5	Std	1680	2020	2360	2830	3000	3000	3000	3000	3000	3000	3000				
						Alt	-	2520	2800	3530	3870	4370	4710	5050	5470	5890	6730				
0.344	8.7	19.19	28.45	4.875	123.9	Std	1860	2230	2600	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	-	2780	2800	3900	4270	4820	5190	5570	6030	6490	7260				
0.375	9.5	20.80	30.88	4.813	122.3	Std	2020	2430	2800	3000	3000	3000	3000	3000	3000	3000	3000				
						Alt	-	2800	2800	4250	4650	5260	5660	6070	6570	7080	7260				

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
									A (L175)	B (L210)	X 42 (L245)	X 46 (L290)	X 52 (L360)	X 56 (L390)	X 60 (L415)	X 65 (L450)	X 70 (L485)	X 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	161.1	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	2380	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					

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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 A	Grade B	Grade X 42	Grade X 46	Grade X 52	Grade X 56	Grade X 60	Grade X 65	Grade X 70	Grade X 80		
										(L175)	(L210)	(L245)	(L290)	(L360)	(L390)	(L415)	(L450)	(L485)	(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	1830	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	2280	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					

API 5L Line Pipe

Note 1. 1psi=0.07031 kg/cm² 2.1lb/ft=0.45359 kg/ft

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 A	Grade B	Grade X 42	Grade X 46	Grade X 52	Grade X 56	Grade X 60	Grade X 65	Grade X 70	Grade X 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		
			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					