YOUFA STEEL PIPE GROUP

TOP 500 ENTERPRISES OF CHINA INDUSTRY LEADING BRANDS

STOCK CODE：601686

TIANJIN YOUFA INTERNATIONAL TRADE CO., LTD

CARBON STEEL

WeChat Public Platform

Youtube

Tiktok

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Hongqiao Distr ., Tianjin City, China 300120

www.youfasteelpipe.com / www.chinayoufa.com

YOUFA STEEL PIPE GROUP

STOCK CODE：601686

Listed enterprises on the main board of the Shanghai Stock Exchange

Youfa is the strongest welded steel pipe manufacturing group around China.

Brand "YOUFA" is the leading and outstanding brand in the industry.

Brand "ZHENGJINYUAN" is the growing champion in the industry.

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Profile of the Group

Tianjin Youfa Steel Pipe Group Co., Ltd. was established on July 1,2000,and its head-quarters is located in Tianjin Daqiuzhuang Town, the largest steel pipe production base in China.The company is a largest scale steel pipe manufacturing enterprise integrating the production of various pipe products such as ERW steel pipe, spiral welded pipe, hot-dip galvanized steel pipe,plastic lining composite pipe,plastic coated steel pipe,square and rectangular steel pipe, hot-dip galvanized square and rectangular steel pipe, stainless Steel Pipe,pipe fitting and scaffolding,etc. Output is over 20 million tons every year.

In addition to its headquarters in Tianjin, the company currently has a number of subsidiaries in Tangshan, Handan, Shaanxi, Liyang and other cities, with more than 9000 employees, 368 production lines of steel pipe and scaffolding. 3 national accreditation laboratories and 2 Tianjin accreditation enterprise technology centers. In 2024, the annual sales of Youfa steel pipes will be nearly 20 million tons.By the end of 2017.the whole group had 88 utility model patents and 4 invention patents. There are 32 patents in the process of application and acceptance.

The "Youfa" was recognized as a well known trademark in China by the Trademark Office of the State Administration for Industry and Commerce in March 2008. Youfa Group products have been awarded the title of “Tianjin Famous-brand Products" by the Tianjin Municipal Government for many consecutive years. The steel pipes of "Youfa"brand and"Zhengjinyuan"brand won the Gold Cup Award, the highest award in China's metallurgical industry.Since 2006, Youfa Group has been ranked as the top 500 Chinese enterprises and the top 500 manufacturing enterprises in China for many consecutive years.

"Youfa" brand steel pipes sell well all over the country and are widely used in key national projects such as Three Gorges Project,Capital International Airport, Shanghai Pudong International Airport, the 2008 Olympic Games venues,and 2010 Shanghai World Expo exhibition hall. They are exported to 100 countries and regions in European Union, North America, South America, Africa, South-east Asia and the Middle East.They are recognized by the industry, with a domestic comprehensive market share of more than 30%.

Tianjin Youfa Steel Pipe Factory

Production Base	Factory Name	Products Hane	Production Lines
Tianjin Production Base	Tianjin Youfa Steel Pipe Group Co.,Ltd .-No.1 Branch Company	Hot Dipped Galvanized Steel Pipe	16
		ERW Steel Pipe	9
	Tianjin Youfa Steel Pipe Group Co.,Ltd .-No.2 Branch Company	ERW Steel Pipe	7
	Tianjin Youfa Dezhong Steel Pipe Co.,Ltd.	Square/Rectangular Steel Pipe	15
		Galvanized Square/Rectangular Steel Pipe	6
	Tianjin Youfa Pipeline Technology Co.,Ltd	SSAW Steel Pipe	9
		Lined With Plastic Composite Pipe	17
		Plastic Composite Steel Pipe	8
	Tianjin Youfa Ruida Traffic Facilities Co.,Ltd.	High-Speed Guardrail (Galvanized, Aluminized and Plastic Sprayed)	6
		ERW Steel Pipe	1
		Square/Rectangular Steel Pipe	1
		Plastic Composite Steel Pipe	2
	Tianjin Youfa Stainless Steel Pipe Co.,Ltd.	Stainless Steel Pipe	15
		Stainless Steel Pipe Fitting	3
Tangshan Production Base	Tangshan Zhengyuan Pipeline Industry Co., Ltd.	Hot Dipped Galvanized Steel Pipe	12
		ERW Steel Pipe	17
		Galvanized Angle Steel	1
	Tangshan Youfa Steel Pipe Manufacture Co.,Ltd.	ERW Steel Pipe	11
	Tangshan Youfa New Building Equipment Co., Ltd.	ERW Steel Pipe	12
		Square/Rectangular Steel Pipe	14
		Galvanized Square/Rectangular Steel Pipe	4
		Ringlock Scaffolding System	28
Handan Production Base	Handan Youfa Steel Pipe Co.,Ltd.	Hot Dipped Galvanized Steel Pipe	9
		ERW Steel Pipe	11
		Square/Rectangular Steel Pipe	12
		Galvanized Square/Rectangular Steel Pipe	4
Hancheng Production Base	Shaanxi Youfa Steel Pipe Co., Ltd.	Hot Dipped Galvanized Steel Pipe	6
		ERW Steel Pipe	10
		Square/Rectangular Steel Pipe	7
		Galvanized Square/Rectangular Steel Pipe	2
		Metal Structural Accessories	3
Liyang Production Base	Jiangsu Youfa Steel Pipe Co., Ltd.	Hot Dipped Galvanized Steel Pipe	8
		ERW Steel Pipe	14
		Square/Rectangular Steel Pipe	9
		Galvanized Square/Rectangular Steel Pipe	6
Yuxi Production Base	Yunnan Youfa Fangyuan Pipe Industry Co., Ltd.	Hot Dipped Galvanized Steel Pipe	4
		ERW Steel Pipe	17
		SSAW Steel Pipe	9
		Plastic Composite Steel Pipe	9
Huludao Production Base	Huludao City Steel Pipe Industrial Co., Ltd.	ERW Steel Pipe	7
		Square/Rectangular Steel Pipe	1
Linquan Production Base	Anhui Youfa Pipeline TechnologyCo.,Ltd.	Steelmesh Reinforcement Polyethylene Composite Pipe	3
		Plastic Composite Steel Pipe	1
		PE Pipe	2
	Chengdu Yunganglian Logistics Co., Ltd	Logistics Centre	
Total			368

TIANJIN YOUFA PRODUCTION BASE

TANGSHAN YOUFA PRODUCTION BASE

HANDAN YOUFA PRODUCTION BASE

SHAANXI YOUFA PRODUCTION BASE

HULUDAO YOUFA PRODUCTION BASE

LIYANG YOUFA PRODUCTION BASE

ANHUI YOUFA PRODUCTION BASE

YUXI YOUFA PRODUCTION BASE

Tianjin Youfa Steel Pipe Project

Year	Country	Project	Usage
2014-2015	-	Chevron Corporation Oil Platform	Scaffolding steel pipe
2015	Ethiopia	Adama Industrial Parks	Construction steel pipe
2017	Jordan	Mafrac	Solar mounting systems steel pipe
2017	Mexico	Kaixo	Solar mounting systems steel pipe
2018	Viet Nam	Cong ty TNHH Gain Lucky Textile Factory	Solar mounting systems steel pipe
2019	Kuwait	Kuwait International Airport	Construction steel pipe
2019	Ethiopia	Polaroid Airport	Conduit steel pipe
2019	Egypt	New Cairo Business Center	Fire sprinkler and water delivery steel pipe
2019	Morocco	Fire Fighting Pipeline of Moroccan Chemical Plant	Fire sprinkler steel pipe
2020	Cambodia	Phnom Penh Airport	Galvanized steel pipe,Spiral welded pipe and Seamless pipe
2021	Bangladesh	Dhaka Airport	Galvanized steel pipe
2021	Chile	Puerto Williams	LSAW steel pipes piles for bridge
2022	Bolivia	Bolivia Civil Gas Pipeline	Galvanized steel pipe
2023	Egypt	Egyptian Ministry of Defense National Irrigation Project	Water delivery spiral welded steel pipe
2023-2024	Viet nam	Terminal 3-Tan Son Nhat Airport	Construction steel pipe
2024	Ethiopia	Abay Bank	Construction steel pipe

Galvanized Steel Pipe used in ADAMA INDUSTRIAL PARK PROJECT in ETHIOPIA

Scaffolding Steel Pipes used in Chevron Corporation Oil Platform

Construction Steel Pipe used in Beijing National Stadium-Bird's Nest

Core member of national important industry association

Council member of CAQ

Standing director unit of SCS

Vice president unit of Steel Pipe Branch of SCS

Vice President Unit of CCMSA

Vice President Unit of Supply Chain and Labor Management Branch of CCIA

President Unit of CAMT

President unit of Welded Pipe Branch of CAMT

Corporate member of the WPC

Unit member of CFPA

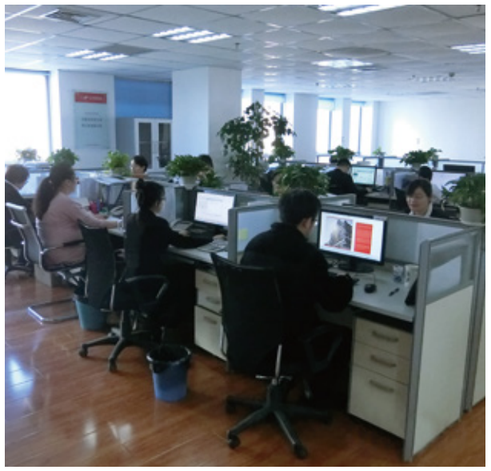
Group member of CGA

Tianjin Youfa International Trade Co., Ltd

Tianjin Youfa International Trade Co., Ltd, was founded in March, 2010, as the foreign trade window of Youfa Steel Pipe Group. The company is located in 7-8th Floor, Guotou Building, Dafeng Road, Hongqiao District, Tianjin City. The office covers an area of 1000㎡. There are about 80 staffs; among them more than 50 have CET-6 certificates and some even better. Our annual sales of steel products are nearly 300,000.00 tons.

Through several years of hard work, we have established export business relationship with many big Transnational Enterprises. Based on the high quality and the considerate service, our products have set up a prominent brand image at home and abroad. Our sales markets mainly are: Middle & South America, the Southeast Asia, Middle East and Africa and so on, nearly covering 125 countries and regions, obtaining a well-deserved reputation. We have built a long-term cooperation with many clients, and have received word of praise from customers all over the world.

Carbon steel pipes meet the following standards: API 5L, ASTM A53/A500, ASTM A795, EN10219/10255, BS1387, BS1139, EN39, ISO65, DIN2440, JIS G3444/3466, etc. and are approved by the Third Party. They are widely used in oil and natural gas, low pressure liquid and mineral powder delivery, and for industrial and civil construction fields and for piles field. Paying attention to the quality of products and services,



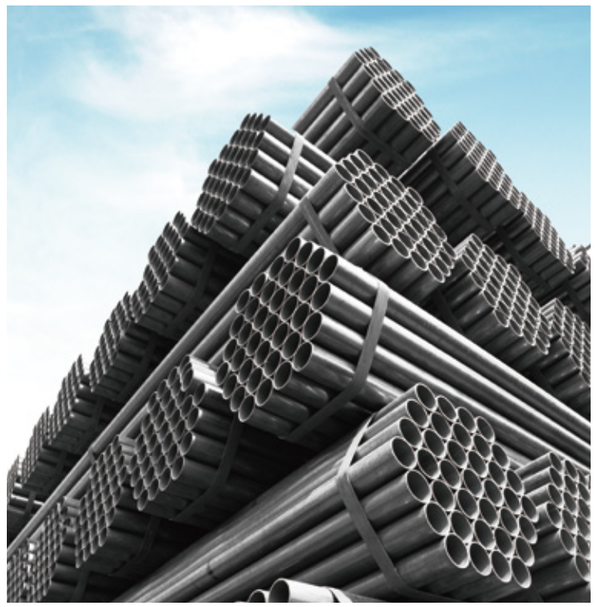
possessing normative QAS, we have acquired certificates of API5L, ISO9001, ISO14000, ISO18000, FPC, BSI and UL/FM quality system.

In order to provide customers a more personalized service, we founded Tianjin Youfa Hongtuo Steel Pipe Manufacture Co., Ltd as processing factory, specially designed for foreign trade service. It covers an area of 20000 square meters. There are about 200 employees, 10 lathes, 7 cutting machines, 2 sets of grooving machine, 2 sets of automatic paint or oil production line. We are committed to meet customer’ s various after-processing requirements.

Pursuing the “Customer first, Integrity first” principle, we are sincerely expecting to cooperate with you!

ERW Steel Pipe Production Line

ERW Steel Pipe Yard



ERW Steel Pipe

Size: DN15-600mm
Thickness:1.2mm to 18.0mm
Usage:low pressure liquid delivery such as water、gas、air、oil and steam and for machine structural purposes

Manufacturer

Tianjin Youfa Steel Pipe Group Co.,Ltd .-No.1 Branch Company
Tianjin Youfa Steel Pipe Group Co., Ltd - No.2 Branch Company
Tangshan Youfa Steel Pipe Manufacture Co., Ltd
Tangshan Zhengyuan Pipeline Industry Co., Ltd
Yunnan Youfa Fangyuan Pipe Industry Co., Ltd
Huludao City Steel Pipe Industrial Co., Ltd
Handan Youfa Steel Pipe Co., Ltd
Shaanxi Youfa Steel Pipe Co., Ltd
Jiangsu Youfa Steel Pipe Co., Ltd

Hot Dipped Galvanized Steel Pipe

Round Pipe:DN15-200mm
Square Pipe:15x15-1000x1000mm
Rectangular Pipe:20x40-100x200mm
Spiral Pipe:219-1420mm

Usage: delivery of low pressure liquid such as water、gas、air、steam for heating and for machine stuctural purposes

Manufacturer

Tianjin Youfa Steel Pipe Group Co.,Ltd .-No.1 Branch Company
Tianjin Youfa Dezhong Steel Pipe Co.,Ltd.
Tangshan Zhengyuan Pipeline Industry Co., Ltd
Tangshan Youfa New Building Equipment Co., Ltd
Handan Youfa Steel Pipe Co.,Ltd
Shaanxi Youfa Steel Pipe Co., Ltd
Jiangsu Youfa Steel Pipe Co., Ltd
Yunnan Youfa Fangyuan Pipe Industry Co., Ltd.

Tangshan Zhengyuan Hot Dipped Galvanized Steel Pipe Yard

Hot Dipped Galvanized Square Pipe

Hot Dipped Galvanized Spiral Welded Steel Pipe

Hot Dipped Galvanized ERW Steel Pipe

Square /Rectangular Steel Pipe

Square Steel Pipe:20x20-400x400mm
Rectangular Pipe:20x40-1000x1200mm
Thickness:1.2mm to 30.0mm

Usage:steel struction,mechanical,manufacturing,construction,
automobile manufacturing,shipbuilding,electricity and so on.

Manufacturer

Tianjin Youfa Dezhong Steel Pipe Co., Ltd

Tangshan Youfa New Building Equipment Co., Ltd

Handan Youfa Steel Pipe Co., Ltd

Shaanxi Youfa Steel Pipe Co., Ltd

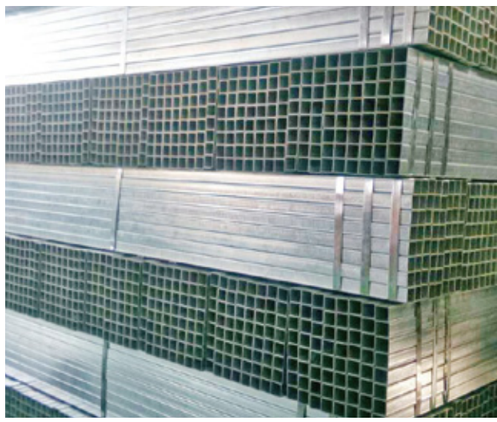
Jiangsu Youfa Steel Pipe Co., Ltd

Huludao City Steel Pipe Industrial Co., Ltd

Square Tube Production Line

Rectangular Tube Yard

Rectangular Tube



Square Tube

Lined With Plastic Composite Pipe

Size: DN15-300mm

Usage: high-level drinking water convey

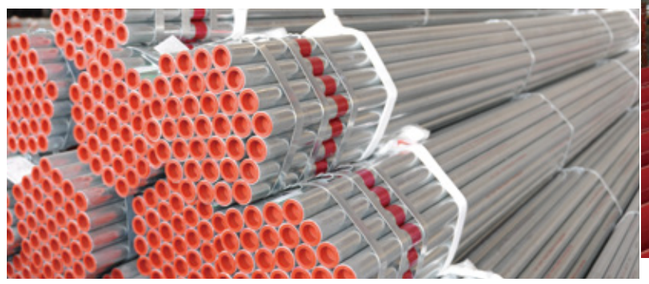
Manufacturer

Tianjin Youfa Steel Pipe Group Co., Ltd- No. 1 Branch Company.

Tangshan Zhengyuan Steel Pipe Co., Ltd

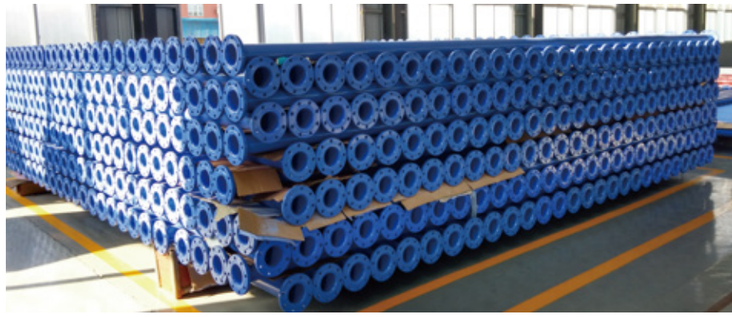
Handan Youfa Steel Pipe Co., Ltd

Lined With Plastic Composite Pipe for Cold Water



Lined With Plastic Composite Pipe for Hot Water

Lined With Plastic Composite Pipe Production Line



Plastic Composite Steel Pipe Production Workshop

Plastic Composite Steel Pipe Production Workshop

Plastic Composite Steel Pipe

Size: DN15-DN500

Usage: water supply、fire protection、wire and cable pipe、vent pipe

Manufacturer

Tianjin Youfa Pipeline Technology Co.,Ltd

Yunnan Youfa Fangyuan Pipe Industry Co., Ltd

Anhui Youfa Pipeline TechnologyCo.,Ltd

SSAW Steel Pipe

Specification: OD219-4000mm

Thickness: 6.0mm to 28.0mm

Usage: the line pipe of petroleum 、gas and delivery of low pressure liquid such as water、gas、air、steam for heating,and for piles and the construction field for structure

Manufacturer

Tianjin Youfa Pipeline Technology Co.,Ltd

Yunnan Youfa Fangyuan Pipe Industry Co., Ltd

Spiral Steel Pipe Production Line

Spiral Steel Pipe Yard

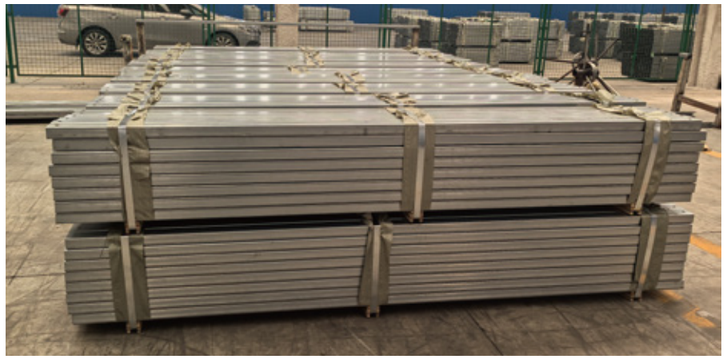
3PE Spiral Steel Pipe

Solar Structure

C-profile with holes, Square tube, Solar Photovoltaic Brackets,
CU shaped steel(Zinc aluminum magnesium, Pre-galvanized, Hot-dipped galvanized)
Ground Piles, Steel column, Purlins
Material: S350GD Q235A/B Q355B

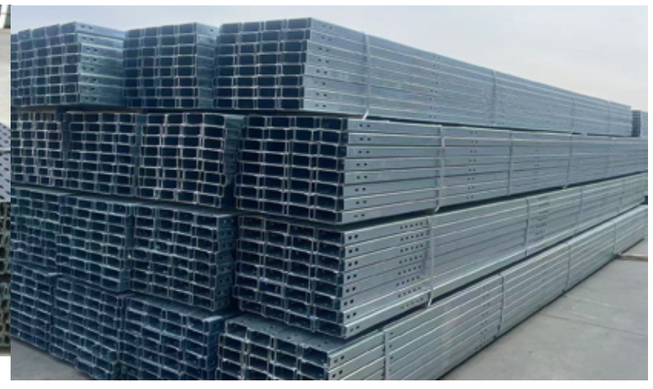
Manufacturer

Tianjin Youfa Ruida Traffic Facilities Co., Ltd
Tangshan Youfa New Construction Equipment Co.,Ltd

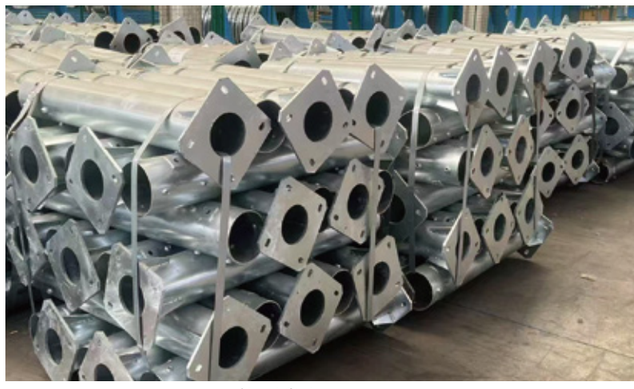


Zinc Aluminum Magnesium C steel

Groud piles



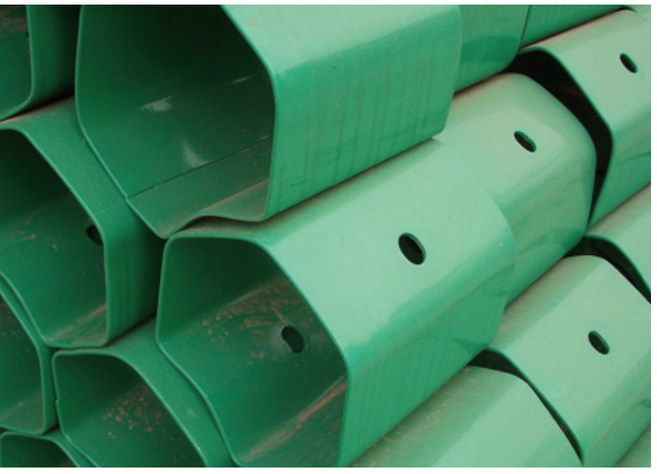
Hot dipped galvanized C steel



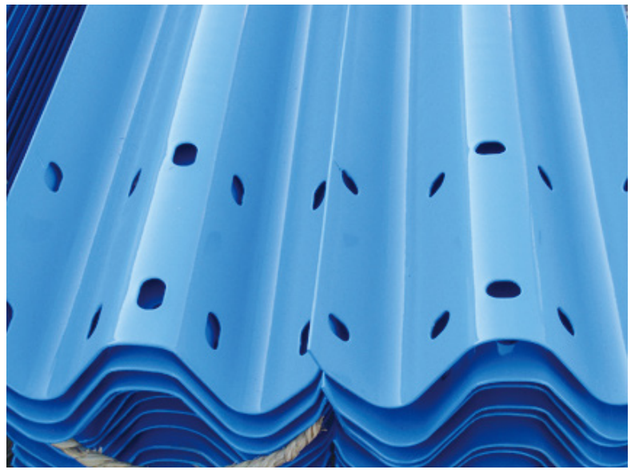
Steel Column

Purlins

Wave Beam Steel Guardrail



Discourage Block Column Cap



Spray Wave Beam Steel Guardrail

Highway Materials

Wave beam steel guardrail steel column
discourage block column cap ends

Manufacturer

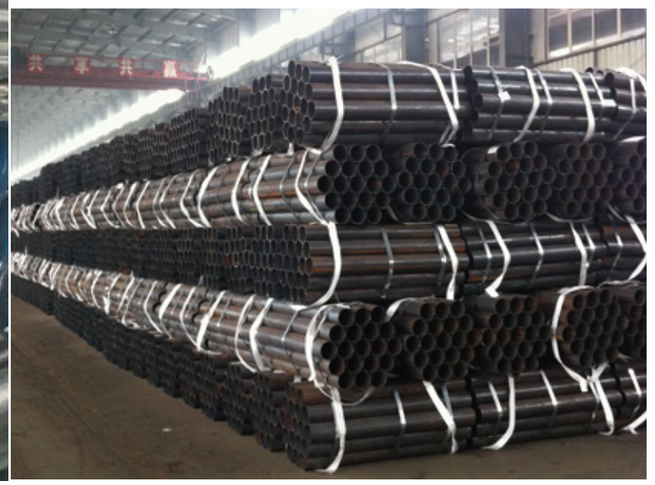
Tianjin Youfa Ruida Traffic Facilities Co., Ltd

Round Steel Columns

Grooved with Caps

Processing Factory

Tianjin Youfa Hongtuo Steel Pipe Manufacture Co., Ltd



Cut in Short Length

PVC Wrapped

Oiled and PVC Wrapped

Threaded with Coupling

Painted

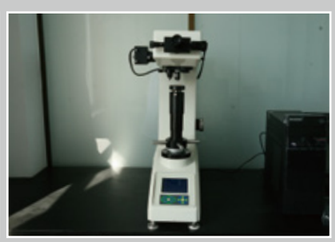
Youfa Laboratory and Quality Control

直读光谱仪
Direct reading spectrometer

落锤冲击试验机
Drop hammer impact test machine

快速智能定硫仪
Fast intelligent sulfur determination instrument

电子万能试验机
Electronic universal testing machine



维氏硬度计
Vivtorinox hardness tester

盐雾试验箱
Salt spray test box

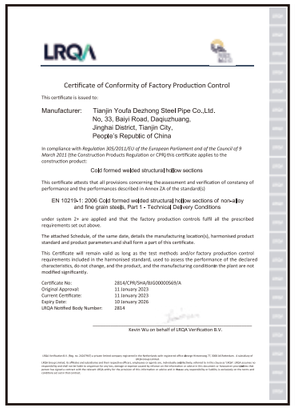
Honor & Certificates


Certificate of Compliance


FACTORY PRODUCTION CONTROL CERTIFICATE


CERTIFICATE OF WORKS APPROVAL


SNI MARKING PRODUCT CERTIFICATE


Certificate of Conformity of Factory Production Control


Certificate of Conformity of Factory Production Control


Certificate


RECOGNITION FOR BV MODE II SCHEME


Certificate of Authority to use the Official API Monogram


Certificate of Authority to use the Official API Monogram

Steel Pipe Standards

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 EN39	S235GT	Scaffolding tube	0.2	a,b	1.4	0.04	0.045	0.020(Al)	340/520	235
BS EN10255	L	Carbon Steel pipes for ordinary piping	0.2	-	1.4	0.035	0.03	-	320-520MPa	195MPa
	M							-		
	H							-		
BS EN10219	S235JRH	Colded formed hollow section	0.17	-	1.4	0.045	0.045	0.009(N)	360-510Mpa (<3mm) 340-470Mpa (⩾3 ⩽ 40mm)	235Mpa (⩽16mm) 225Mpa (>16⩽ 40mm)
	S275JOH		0.2	-	1.5	0.04	0.04	0.009(N)	430-580Mpa (<3mm) 410-560Mpa (⩾3 ⩽ 40mm)	275Mpa (⩽16mm) 265Mpa (>16⩽40mm)
	S275J2H		0.2	-	1.5	0.035	0.035	-		
	S355JOH		0.2	0.55	1.6	0.04	0.04	0.009(N)	510-680Mpa (<3mm) 490-630Mpa (⩾3 ⩽ 40mm)	355Mpa (⩽16mm) 345Mpa (>16⩽ 40mm)
	S355J2H		0.2	0.55	1.6	0.035	0.035	-		
BS1387	CLASS A	Carbon steel pipe	0.2	-	1.2	0.045	0.045	-	320-460Mpa	195Mpa
	CLASS B									
	CLASS C									
BS3059	320	For Boiler	0.16	0.35	0.30-0.70	0.04	0.04	-	320-480Mpa	195Mpa
BS3601	320	Pipes for Pressure Service	0.16	-	0.30-0.70	0.04	0.04	-	320-460Mpa	195Mpa
	360		0.17	0.35	0.40-0.80			-	360-500Mpa	235Mpa
	430		0.21		0.40-1.20			-	430-570Mpa	275Mpa
BS6323 Part 5 Type KM	ERW 1	Carbon Steel pipes for Mechanical Structural Purposes and General Structural Purposes	0.13	-	0.6	0.05	0.05	-	300Mpa	200Mpa
	ERW 2		0.16	-	0.7			-	340Mpa	250Mpa
	ERW 3		0.2	0.35	0.9			-	400Mpa	300Mpa
	ERW 4		0.25		1.2			-	450Mpa	350Mpa
	ERW 5		0.23	0.5	1.5			-	500Mpa	420Mpa
ISO65	L II	Carbon steel tubes for screwing	0.2	-	1.4	0.035	0.03	-	320-520MPa	195MPa
	L I									
	M									
	H									

Elongation Min(%)		Flattening Test	Bend Test	Hydrostatic & NDT	Others
Longitudinal Direction	Transverse Direction				
24	-	at 0℃ or 90℃ to the direction of flattening	-	-	-
20	-	Larger thanDN50 Weld portion :H=0.75D The other side of weld portion:H=0.6D	DN 50 and Smaller D 21 27 34 42 48 60 r 65 85 100 150 170 220	50Bar or NDT	*Copper sulfate test: 4 times(1 minute)
24 ≤40mm)	20 (℃)	-	-	-	-
20 ≤40mm)	0				
	-20				
20 ≤40mm)	0				
	-20				
20	-	≤DN50 without showing either crack or flaw	≤DN50 withstand the test without showing any signs of fracture or failure	50Bar or NDT	hot dip galvanized steel pipe,Threaded if need
25		H=(1+C)t/(C+1/D) ; C:0.10	-	P=20Sa/D Or NDT P:Test Pressure(bar) D:Outside Diameter(mm) a:Specified Thickness(mm) S:80% of the specified minimum yield strength (N/m㎡)	*Drift expanding test *Full body Normalizing
25		H=(1+C)t/(C+1/D) *C: Constant Gr / Weld Portion / Other 320 0.029 0.1 360 0.026 0.09 430 0.023 0.08	-	P=20Sa/D Or NDT	*Heat treatment on the weld seam area
25					
22					
10	D/t≤20	H=0.66D	-	50 Bars or P=20Sa/D P: Test Pressure(bar) D: Outside Diameter(mm) a: Specified Thickness(mm) S:60% of the specified minimum yield strength(N/m㎡) or NDT	*Minimum expansion drift
8		H=0.75D			*Type GKM,GZF
7		H=0.85D			annealing
6		H=0.85D			*Type NKM,NZF:
6		H=0.85D			Normalizing
20	-	-	-	50Bar	-

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)
API 5L (PSL1)	L175(A25)	Line Pipe	0.21	-	0.6	0.03	0.03	-	310Mpa (45000 psi)	175Mpa (25400 psi)
	L175P(A25P)					0.045~0.08		-	310Mpa (45000 psi)	175Mpa (25400 psi)
	L210(A)		0.22		0.9	0.03		-	335Mpa (48600 psi)	210Mpa (30500 psi)
	L245(B)		0.26		1.2			-	415Mpa (60200 psi)	245Mpa (35500 psi)
	L290(X42)				1.3			-	415Mpa (60200 psi)	290Mpa (42100 psi)
	L320(X46)				1.4			-	435Mpa (63100 psi)	320Mpa (46400 psi)
	L360(X52)							-	460Mpa (66700 psi)	360Mpa (52200 psi)
	L390(X56)							-	490Mpa (71100 psi)	390Mpa (56600 psi)
	L415(X60)							-	520Mpa (75400 psi)	415Mpa (60200 psi)
	L450(X65)				1.45			-	535Mpa (77600 psi)	450Mpa (65300 psi)
	L485(X70)				1.65			-	570Mpa (82700 psi)	485Mpa (70300 psi)
API 5L (PSL2)	L245M(BM)	Line Pipe	0.22	0.45	1.2	0.025	0.015	CE(Pcm) ≤0.25% CE(IIW) ≤0.43%	415~760Mpa (60200~110200 psi)	245~450Mpa (35500~65300 psi)
	L290M(X42M)				1.3				415~760Mpa (60200~110200 psi)	290~495Mpa (42100~71800 psi)
	L320M(X46M)				1.3				435~760Mpa (63100~110200 psi)	320~525Mpa (46400~76100 psi)
	L360M(X52M)				1.4				460~760Mpa (66700~110200 psi)	360~530Mpa (52200~76900 psi)
	L390M(X56M)				1.4				490~760Mpa (71100~110200 psi)	390~545Mpa (56600~79000 psi)
	L415M(X60M)		0.12		1.6				520~760Mpa (75400~110200 psi)	415~565Mpa (60200~81900 psi)
	L450M(X65M)				1.6				535~760Mpa (77600~110200 psi)	450~600Mpa (65300~87000 psi)
	L485M(X70M)				1.7				570~760Mpa (82700~110200 psi)	485~635Mpa (70300~92100 psi)
	L555M(X80M)				1.85				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)	552~758Mpa (80000~11000 psi)
	L-80		-	-	-				655Mpa (95000 psi)	552~655Mpa (80000~95000 psi)
	P-110		-	-	-				862Mpa (125000 psi)	758~965Mpa (11000~14000 psi)

Elongation Min (%)		Flattening Test	Bend Test	Hydrostatic & NDT	Others
Longitudinal Direction	Transverse Direction				
$e=625{,}000\ \frac{A^{0.2}}{U^{0.9}}$ 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 D<323.9mm t≥12.7mm Weld portion; H=2/3D The other side of weld portion H=1/2D Weld ductility test D/t>10 The other side of weld portion;H=1/3D Weld ductility Test H=3.07T/(0.07+3t/D) less than X 52 H=3.05T/(0.05+3t/D) X 52 and higher	2 3/8 and smaller 90° X 12D -	P=2st/D P=hydrostatic test Pressure(psi) S= fiber stress, is the hoop stress expressed in megapascals 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 Grade / Size Designation / percent of specified min. yield stress: Standard Test Pressure / Alternate Test Pressure A25 — 5 9/16 — 60 — 75 A — 2 3/8 and larger — 60 — 75 B — 2 3/8 and larger — 60 — 75 X42-X80 — 5 9/16 and smaller — 60 — 75 5 9/16 and 8 5/8 — 75 — 75 8 5/8~20 inch — 85 — 85 20 and larger — 90 — 90	*Heat treatment on the weld seam area *Metallographic Examination *Fracture Toughness Test(PSL2)
$e=625{,}000\ \frac{A^{0.2}}{U^{0.9}}$ 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		≥16，0.65D 3,93 to 16 DX(0,980-0,020 6 D/t) <3,93 DX(1,104-0,051 8 D/t) 9 to 28，D(1.074-0.0194 D/t) 9 to 28，D(1.074-0,0194 D/t) All DX(1.086-0.0163 D/t)	-	P=2(f X Ys min X t)/D and NDT. P=hydrostatic test pressure test pressure in megapascals. f=a factor of 0.6 or 0.8,Yp=specified yield strength for the pipebod in megapascals.t= specified wall thickness in mm D= Specified Outside diameter in mm Factor f Standard Test Pressure: SIZE 9 5/8 < — H40 0.8 — J55.K55 0.8 — L80.N80 0.8; SIZE ≥9 5/8 — H40 0.6 — J55.K55 0..6 — L80.N80 0.8 Alternative Test Pressure: All size — H40 0.8 — J55.K55 0.8 — L80.N80 ---	*Heat treatment on the weld seam area *Fracture Toughness Test

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 Vs0.08	330Mpa (48000 psi)	205Mpa (30000 psi)
	B		0.30	-	1.20	0.05	0.045		415Mpa (60000 psi)	240Mpa (35000 psi)
ASTM A178	A	Boiler Tube	0.06~ 0.18	-	0.27~ 0.63	0.035	0.035	-	325Mpa	180Mpa
	C		0.35	-	0.8	0.035	0.035		415Mpa	255Mpa
	D		0.27	0.1 min	1.5	0.03	0.015		485Mpa	275Mpa
ASTM A214	-	Heat-Exchanger & Condenser Tube	0.18	-	0.27~ 0.63	0.035	0.035	-	-	-
ASTM A252	Grade I	-	-	-	-	-	0.05	-	345Mpa (50000 psi)	205Mpa (30000 psi)
	Grade II								415Mpa (60000 psi)	240Mpa (35000 psi)
	Grade III								455Mpa (66000 psi)	310Mpa (45000 psi)
ASTM A500	A	Structural Carbon Steel Pipes In Round	0.30	-	1.40	0.045	0.045	Cu≥0.20 When required	310Mpa (45000 psi)	230Mpa (33000 psi)
	B		0.30	-	1.40	0.045	0.045		400Mpa (58000 psi)	290Mpa (42000 psi)
	C		0.27	-	1.40	0.045	0.045		425Mpa (62000 psi)	315Mpa (46000 psi)
	D		0.30	-	1.40	0.045	0.045		400Mpa (58000 psi)	250Mpa (36000 psi)
	A	Structural Carbon Steel Pipes In Square & Rectangular	0.30	-	1.40	0.045	0.045	Cu≥0.20 When Required	310Mpa (45000 psi)	270Mpa (39000 psi)
	B		0.30	-	1.40	0.045	0.045		400Mpa (58000 psi)	315Mpa (46000 psi)
	C		0.27	-	1.40	0.045	0.045		425Mpa (62000 psi)	345Mpa (50000 psi)
	D		0.30	-	1.40	0.045	0.045		400Mpa (58000 psi)	250Mpa (36000 psi)
ASTM A589 (Type IV)	A	Water-well piping pipe	-	-	-	0.05	0.06	-	330Mpa (48000 psi)	205Mpa (30000 psi)
	B		-	-	-	0.05	0.06		415Mpa (60000 psi)	240Mpa (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			

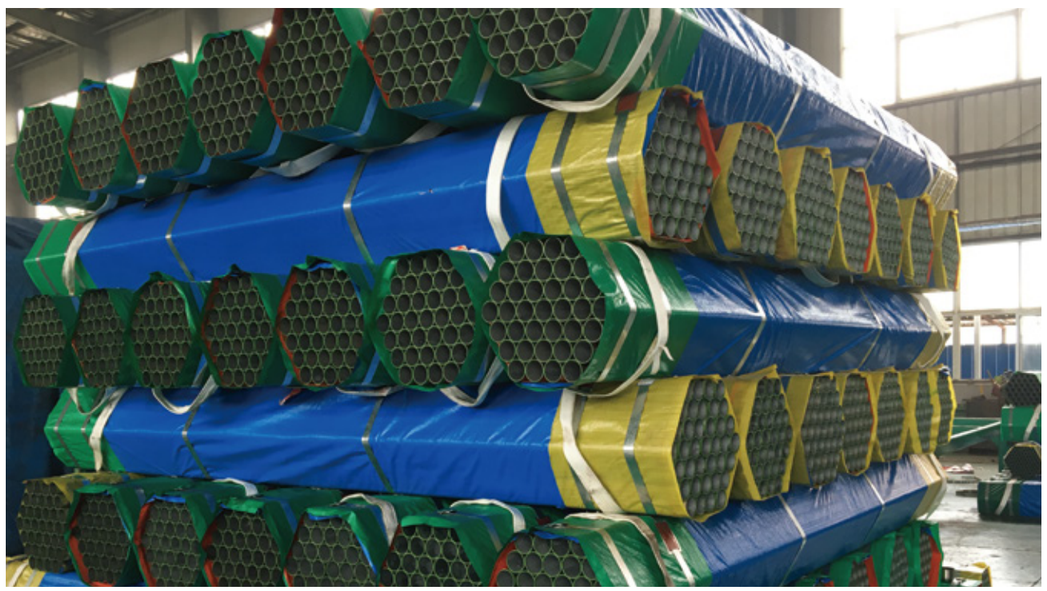
Elongation Min (%)		Flattening Test	Bend Test	Hydrostatic & NDT	Others
Longitudinal Direction	Transverse Direction				
$e=625,000 \times \frac{A^{0.2}}{U^{0.9}}$ e;minimum elongation in 2 in(50.8mm) A;Cross-Sectional area of the test specimen in sq in U;Specified minimum ultimate tensile strength in Psi ;		For pipe over NPS 2 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=2st/D) The min pressure NPS 3 ≤ P=2,500 Psi NPS >3 P=2,800Psi at least 5S NDT And NDT (NPS 2 and over)	*ZN Coating Weight 550 g/m2(min) *Heat treatment on the weld seem area (Grade B)
35		H=(1+e)t/(e+t/D) e:0.07(C≥0.19) 0.09（C≤0.18）	-	P=220.6t/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=(1+e)t/(e+t/D) e:0.07(C≥0.19) 0.09（C≤0.18）	-	P=220.6t/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		H=(1+e)t/(e+t/D) A; e=0.09 B; e=0.07 C; e=0.06	-	-	If necessary, stress relieved, anneaeld
23					
21					
23					
25		-			
23					
21					
23					
$e=625,000 \times \frac{A^{0.2}}{U^{0.9}}$ 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 ;		-	-	In accordance with the specified hydrostatic pressures	*ZN Coating Weight 550 g/m2(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 460 g/m2(min)

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

Series	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/ft	kg/m	lb/ft	kg/ft	kg/m
L	1/2	15	0.854	21.7	0.827	21.0	0.091	2.3	0.726	0.329	1.08	0.732	0.332	1.09
	3/4	20	1.067	27.1	1.039	26.4	0.091	2.3	0.941	0.427	1.4	0.947	0.430	1.41
	1	25	1.339	34.0	1.307	33.2	0.114	2.9	1.478	0.671	2.2	1.492	0.677	2.22
	1 1/4	32	1.681	42.7	1.650	41.9	0.114	2.9	1.895	0.860	2.82	1.915	0.869	2.85
	1 1/2	40	1.913	48.6	1.882	47.8	0.114	2.9	2.184	0.991	3.25	2.211	1.003	3.29
	2	50	2.390	60.7	2.346	59.6	0.126	3.2	3.031	1.375	4.51	3.078	1.396	4.58
	2 1/2	65	2.992	76.0	2.961	75.2	0.126	3.2	3.864	1.753	5.75	3.944	1.789	5.87
	3	80	3.492	88.7	3.461	87.9	0.126	3.2	4.543	2.060	6.76	4.657	2.112	6.93
	3 1/2	90	3.984	101.2	3.949	100.3	0.142	3.6	5.846	2.652	8.7	5.967	2.707	8.88
	4	100	4.484	113.9	4.449	113.0	0.142	3.6	6.605	2.996	9.83	6.787	3.078	10.1
	5	125	5.543	140.8	5.453	138.5	0.117	4.5	10.080	4.572	15	10.416	4.724	15.5
	6	150	6.555	166.5	6.453	163.9	0.117	4.5	11.961	5.425	17.8	12.364	5.608	18.4
L1	1/2	15	0.854	21.7	0.827	21.0	0.091	2.3	0.726	0.329	1.08	0.732	0.332	1.09
	3/4	20	1.067	27.1	1.039	26.4	0.091	2.3	0.934	0.424	1.39	0.941	0.427	1.4
	1	25	1.339	34.0	1.307	33.2	0.114	2.9	1.478	0.671	2.2	1.492	0.677	2.22
	1 1/4	32	1.681	42.7	1.650	41.9	0.114	2.9	1.895	0.860	2.82	1.915	0.869	2.85
	1 1/2	40	1.913	48.6	1.882	47.8	0.114	2.9	2.177	0.988	3.24	2.204	1.000	3.28
	2	50	2.390	60.7	2.346	59.6	0.126	3.2	3.017	1.369	4.49	3.064	1.390	4.56
	2 1/2	65	3.004	76.3	2.961	75.2	0.126	3.2	3.850	1.747	5.73	3.931	1.783	5.85
	3	80	3.520	89.4	3.461	87.9	0.142	3.6	5.073	2.301	7.55	5.188	2.353	7.72
	4	100	4.524	114.9	4.449	113.0	0.157	4.0	7.257	3.292	10.8	7.459	3.383	11.1
L2	1/2	15	0.843	21.4	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	26.9	1.039	26.4	0.091	2.3	0.927	0.421	1.38	0.934	0.424	1.39
	1	25	1.331	33.8	1.307	33.2	0.102	2.6	1.331	0.604	1.98	1.344	0.610	2
	1 1/4	32	1.673	42.5	1.650	41.9	0.102	2.6	1.707	0.774	2.54	1.727	0.783	2.57
	1 1/2	40	1.906	48.4	1.882	47.8	0.114	2.9	2.170	0.985	3.23	2.197	0.997	3.27
	2	50	2.370	60.2	2.346	59.6	0.114	2.9	2.742	1.244	4.08	2.789	1.265	4.15
	2 1/2	65	2.992	76.0	2.961	75.2	0.126	3.2	3.837	1.740	5.71	3.918	1.777	5.83
	3	80	3.492	88.7	3.461	87.9	0.126	3.2	4.516	2.048	6.72	4.630	2.100	6.89
	4	100	4.484	113.9	4.449	113.0	0.142	3.6	6.552	2.972	9.75	6.720	3.048	10
H	1/2	15	0.858	21.8	0.827	21.0	0.126	3.2	0.968	0.439	1.44	0.974	0.442	1.45
	3/4	20	1.075	27.3	1.043	26.5	0.126	3.2	1.257	0.570	1.87	1.263	0.573	1.88
	1	25	1.346	34.2	1.311	33.3	0.157	4.0	1.969	0.893	2.93	1.982	0.899	2.95
	1 1/4	32	1.689	42.9	1.654	42.0	0.157	4.0	2.547	1.155	3.79	2.567	1.164	3.82
	1 1/2	40	1.921	48.8	1.886	47.9	0.157	4.0	2.937	1.332	4.37	2.963	1.344	4.41
	2	50	2.394	60.8	2.350	59.7	0.177	4.5	4.159	1.887	6.19	4.207	1.908	6.26
	2 1/2	65	3.016	76.6	2.965	75.3	0.177	4.5	5.329	2.417	7.93	5.409	2.454	8.05
	3	80	3.524	89.5	3.465	88.0	0.197	5.0	6.921	3.139	10.3	7.056	3.200	10.5
	4	100	4.528	115.0	4.453	113.1	0.213	5.4	9.744	4.420	14.5	9.945	4.511	14.8
	5	125	5.543	140.8	5.453	138.5	0.213	5.4	12.028	5.456	17.9	12.364	5.608	18.4
	6	150	6.555	166.5	6.453	163.9	0.213	5.4	14.313	6.492	21.3	14.716	6.675	21.9
M	1/2	15	0.858	21.8	0.827	21.0	0.102	2.6	0.813	0.369	1.21	0.820	0.372	1.22
	3/4	20	1.075	27.3	1.043	26.5	0.102	2.6	1.048	0.475	1.56	1.055	0.479	1.57
	1	25	1.346	34.2	1.311	33.3	0.126	3.2	1.619	0.735	2.41	1.633	0.741	2.43
	1 1/4	32	1.689	42.9	1.654	42.0	0.126	3.2	2.083	0.945	3.1	2.103	0.954	3.13
	1 1/2	40	1.921	48.8	1.886	47.9	0.126	3.2	2.392	1.085	3.56	2.419	1.097	3.6
	2	50	2.394	60.8	2.350	59.7	0.142	3.6	3.380	1.533	5.03	3.427	1.554	5.1
	2 1/2	65	3.016	76.6	2.965	75.3	0.142	3.6	4.314	1.957	6.42	4.395	1.993	6.54
	3	80	3.524	89.5	3.465	88.0	0.157	4.0	5.618	2.548	8.36	5.732	2.600	8.53
	4	100	4.528	115.0	4.453	113.1	0.177	4.5	8.198	3.179	12.2	8.400	3.810	12.5
	5	125	5.543	140.8	5.453	138.5	0.197	5.0	11.155	5.060	16.6	11.491	5.212	17.1
	6	150	6.555	166.5	6.453	163.9	0.197	5.0	13.305	6.035	19.8	13.703	6.218	20.4

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

Series	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/ft	kg/m	lb/ft	kg/ft	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	1.330	0.604	1.98	1.360	0.617	2
	1 1/4	32	1.670	42.5	1.650	41.9	0.104	2.6	1.710	0.774	2.54	1.750	0.794	2.57
	1 1/2	40	1.903	48.4	1.882	47.8	0.116	2.9	2.170	0.985	3.23	2.220	1.010	3.27
	2	50	2.370	60.2	2.347	59.6	0.116	2.9	2.740	1.240	4.08	2.810	1.270	4.15
	2 1/2	65	2.991	76.0	2.960	75.2	0.126	3.2	3.840	1.740	5.71	3.980	1.810	5.83
	3	80	3.491	88.7	3.460	87.9	0.126	3.2	4.520	2.050	6.72	4.490	2.130	6.89
	4	100	4.481	113.9	4.450	113.0	0.142	3.6	6.550	2.970	9.75	6.840	3.100	10
Medium	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	1.050	0.475	1.56	1.070	0.485	1.57
	1	25	1.346	34.2	1.316	33.4	0.126	3.2	1.620	0.735	2.41	1.650	0.748	2.43
	1 1/4	32	1.687	42.9	1.657	42.1	0.126	3.2	2.080	0.945	3.1	2.130	0.966	3.13
	1 1/2	40	1.919	48.8	1.889	48.0	0.126	3.2	2.400	1.090	3.57	2.460	1.120	3.61
	2	50	2.394	60.8	2.354	59.8	0.142	3.6	3.380	1.530	5.03	3.470	1.570	5.1
	2 1/2	65	3.014	76.6	2.969	75.4	0.142	3.6	4.320	1.960	6.43	4.460	2.020	6.55
	3	80	3.524	89.5	3.469	88.1	0.157	4.0	5.620	2.550	8.37	5.800	2.630	8.54
	4	100	4.524	114.9	4.459	113.3	0.177	4.5	8.200	3.720	12.2	8.340	3.780	12.5
	5	125	5.534	140.6	5.549	138.7	0.196	5.0	11.15	5.060	16.6	11.20	5.080	17.1
	6	150	6.539	166.1	6.459	164.1	0.196	5.0	13.24	6.000	19.7	13.30	6.030	20.3
Heavy	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	1.260	0.570	1.87	1.280	0.581	1.88
	1	25	1.346	34.2	1.136	33.4	0.157	4.0	1.980	0.896	2.94	2.010	0.912	2.96
	1 1/4	32	1.687	42.9	1.657	42.1	0.157	4.0	2.550	1.160	3.8	2.600	1.180	3.83
	1 1/2	40	1.919	48.8	1.889	48.0	0.157	4.0	2.940	1.340	4.38	3.010	1.370	4.42
	2	50	2.394	60.8	2.354	59.8	0.177	4.5	4.160	1.890	6.19	4.190	1.900	6.26
	2 1/2	65	3.014	76.6	2.969	75.4	0.177	4.5	5.330	2.420	7.93	5.390	2.440	8.05
	3	80	3.524	89.5	3.469	88.1	0.196	5.0	6.920	3.140	10.3	6.870	3.120	10.5
	4	100	4.524	114.9	4.459	113.3	0.212	5.4	9.740	4.420	14.5	9.910	4.500	14.8
	5	125	5.534	140.6	5.459	138.7	0.212	5.4	12.30	5.460	17.9	12.30	5.580	18.4
	6	150	6.539	166.1	6.459	164.1	0.212	5.4	14.31	6.490	21.3	14.70	6.670	21.9



Round Steel Pipe as per EN 10219/2001

Specified side diameter	Specified thickness	Mass per unit length	Cross-sectional area	Second moment of area	Radius of gyration	Elastic section modulus	Plastic section modulus	Torsional intertia constant	Torsional modulus constant	Super-ficial area per metre length	Nominal length per tonne
D	T	M	A	I	i	W_{el}	W_{pl}	I_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2/m	m
21.3	2	0.95	1.21	0.571	0.686	0.536	0.748	1.14	1.07	0.067	1050
21.3	2.5	1.16	1.48	0.664	0.671	0.623	0.889	1.33	1.25	0.067	863
21.3	3	1.35	1.72	0.741	0.656	0.696	1.01	1.48	1.39	0.067	739
26.9	2	1.23	1.56	1.22	0.883	0.907	1.24	2.44	1.81	0.085	814
26.9	2.5	1.5	1.92	1.44	0.867	1.07	1.49	2.88	2.14	0.085	665
26.9	3	1.77	2.25	1.63	0.852	1.21	1.72	3.27	2.43	0.085	566
33.7	2	1.56	1.99	2.51	1.12	1.49	2.01	5.02	2.98	0.106	640
33.7	2.5	1.92	2.45	3	1.11	1.78	2.44	6	3.56	0.106	520
33.7	3	2.27	2.89	3.44	1.09	2.04	2.84	6.88	4.08	0.106	440
42.4	2	1.99	2.54	5.19	1.43	2.45	3.27	10.4	4.9	0.133	502
42.4	2.5	2.46	3.13	6.26	1.41	2.95	3.99	12.5	5.91	0.133	407
42.4	3	2.91	3.71	7.25	1.4	3.42	4.67	14.5	6.84	0.133	343
42.4	4	3.79	4.83	8.99	1.36	4.24	5.92	18	8.48	0.133	264
48.3	2	2.28	2.91	7.81	1.64	3.23	4.29	15.6	6.47	0.152	438
48.3	2.5	2.82	3.6	9.46	1.62	3.92	5.25	18.9	7.83	0.152	354
48.3	3	3.35	4.27	11	1.61	4.55	6.17	22	9.11	0.152	298
48.3	4	4.37	5.57	13.8	1.57	5.7	7.87	27.5	11.4	0.152	229
48.3	5	5.34	6.8	16.2	1.54	6.69	9.42	32.3	13.4	0.152	187
60.3	2	2.88	3.66	15.6	2.06	5.17	6.8	31.2	10.3	0.189	348
60.3	2.5	3.56	4.54	19	2.05	6.3	8.36	38	12.6	0.189	281
60.3	3	4.24	5.4	22.2	2.03	7.37	9.86	44.4	14.7	0.189	236
60.3	4	5.55	7.07	28.2	2	9.34	12.7	56.3	18.7	0.189	180
60.3	5	6.82	8.69	33.5	1.96	11.1	15.3	67	22.2	0.189	147
76.1	2	3.65	4.66	32	2.62	8.4	11	64	16.8	0.239	274
76.1	2.5	4.54	5.78	39.2	2.6	10.3	13.5	78.4	20.6	0.239	220
76.1	3	5.41	6.89	46.1	2.59	12.1	16	92.2	24.2	0.239	185
76.1	4	7.11	9.06	59.1	2.55	15.5	20.8	118	31	0.239	141
76.1	5	8.77	11.2	70.9	2.52	18.6	25.3	142	37.3	0.239	114
76.1	6	10.4	13.2	81.8	2.49	21.5	29.6	164	43	0.239	96.4
76.1	6.3	10.8	13.8	84.8	2.48	22.3	30.8	170	44.6	0.239	92.2
88.9	2	4.29	5.46	51.6	3.07	11.6	15.1	103	23.2	0.279	233
88.9	2.5	5.33	6.79	63.4	3.06	14.3	18.7	127	28.5	0.279	188
88.9	3	6.36	8.1	74.8	3.04	16.8	22.1	150	33.6	0.279	157
88.9	4	8.38	10.7	96.3	3	21.7	28.9	193	43.3	0.279	119
88.9	5	10.3	13.2	116	2.97	26.2	35.2	233	52.4	0.279	96.7
88.9	6	12.3	15.6	135	2.94	30.4	41.3	270	60.7	0.279	81.5
88.9	6.3	12.8	16.3	140	2.93	31.5	43.1	280	63.1	0.279	77.9
101.6	2	4.91	6.26	77.6	3.52	15.3	19.8	155	30.6	0.319	204
101.6	2.5	6.11	7.78	95.6	3.5	18.8	24.6	191	37.6	0.319	164
101.6	3	7.29	9.29	113	3.49	22.3	29.2	226	44.5	0.319	137
101.6	4	9.63	12.3	146	3.45	28.8	38.1	293	57.6	0.319	104
101.6	5	11.9	15.2	177	3.42	34.9	46.7	355	69.9	0.319	84
101.6	6	14.1	18	207	3.39	40.7	54.9	413	81.4	0.319	70.7
101.6	6.3	14.8	18.9	215	3.38	42.3	57.3	430	84.7	0.319	67.5
114.3	2.5	6.89	8.78	137	3.95	24	31.3	275	48	0.359	145
114.3	3	8.23	10.5	163	3.94	28.4	37.2	325	56.9	0.359	121
114.3	4	10.9	13.9	211	3.9	36.9	48.7	422	73.9	0.359	91.9
114.3	5	13.5	17.2	257	3.87	45	59.8	514	89.9	0.359	74.2
114.3	6	16	20.4	300	3.83	52.5	70.4	600	105	0.359	62.4
114.3	6.3	16.8	21.4	313	3.82	54.7	73.6	625	109	0.359	59.6
114.3	8	21	26.7	379	3.77	66.4	90.6	759	133	0.359	47.7
139.7	3	10.1	12.9	301	4.83	43.1	56.1	602	86.2	0.439	98.9
139.7	4	13.4	17.1	393	4.8	56.2	73.7	786	112	0.439	74.7
139.7	5	16.6	21.2	481	4.77	68.8	90.8	961	138	0.439	60.2
139.7	6	19.8	25.2	564	4.73	80.8	107	1129	162	0.439	50.5
139.7	6.3	20.7	26.4	589	4.72	84.3	112	1177	169	0.439	48.2
139.7	8	26	33.1	720	4.66	103	139	1441	206	0.439	38.5
139.7	10	32	40.7	862	4.6	123	169	1724	247	0.439	31.3
168.3	3	12.2	15.6	532	5.85	63.3	82	1065	127	0.529	81.8
168.3	4	16.2	20.6	697	5.81	82.8	108	1394	166	0.529	61.7
168.3	5	20.1	25.7	856	5.78	102	133	1712	203	0.529	49.7
168.3	6	24	30.6	1009	5.74	120	158	2017	240	0.529	41.6
168.3	6.3	25.2	32.1	1053	5.73	125	165	2107	250	0.529	39.7
168.3	8	31.6	40.3	1297	5.67	154	206	2595	308	0.529	31.6
168.3	10	39	49.7	1564	5.61	186	251	3128	372	0.529	25.6
177.8	4	17.1	21.8	825	6.15	92.8	121	1650	186	0.559	58.3
177.8	5	21.3	27.1	1014	6.11	114	149	2028	228	0.559	46.9
177.8	6	25.4	32.4	1196	6.08	135	177	2392	269	0.559	39.3
177.8	6.3	26.6	33.9	1250	6.07	141	185	2499	281	0.559	37.5
177.8	8	33.5	42.7	1541	6.01	173	231	3083	347	0.559	29.9
177.8	10	41.4	52.7	1862	5.94	209	282	3724	419	0.559	24.2
177.8	12	49.1	62.5	2159	5.88	243	330	4318	486	0.559	20.4
177.8	12.5	51	64.9	2230	5.86	251	342	4460	502	0.559	19.6

Round Steel Pipe as per EN 10219/2001

Specified side diameter	Specified thickness	Mass per unit length	Cross-sectional area	Second moment of area	Radius of gyration	Elastic section modulus	Plastic section modulus	Torsional intertia constant	Torsional modulus constant	Super-ficial area per metre length	Nominal length per tonne
D	T	M	A	I	i	W_{el}	W_{pl}	I_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2/m	m
193.7	4	18.7	23.8	1073	6.71	111	144	2146	222	0.609	53.4
193.7	5	23.3	29.6	1320	6.67	136	178	2640	273	0.609	43
193.7	6	27.8	35.4	1560	6.64	161	211	3119	322	0.609	36
193.7	6.3	29.1	37.1	1630	6.63	168	221	3260	337	0.609	34.3
193.7	8	36.6	46.7	2016	6.57	208	276	4031	416	0.609	27.3
193.7	10	45.3	57.7	2442	6.5	252	338	4883	504	0.609	22.1
193.7	12	53.8	68.5	2839	6.44	293	397	5678	586	0.609	18.6
193.7	12.5	55.9	71.2	2934	6.42	303	411	5869	606	0.609	17.9
219.1	4	21.2	27	1564	7.61	143	185	3128	286	0.688	47.1
219.1	5	26.4	33.6	1928	7.57	176	229	3856	352	0.688	37.9
219.1	6	31.5	40.2	2282	7.54	208	273	4564	417	0.688	31.7
219.1	6.3	33.1	42.1	2386	7.53	218	285	4772	436	0.688	30.2
219.1	8	41.6	53.1	2960	7.47	270	357	5919	540	0.688	24
219.1	10	51.6	65.7	3598	7.4	328	438	7197	657	0.688	19.4
219.1	12	61.3	78.1	4200	7.33	383	515	8400	767	0.688	16.3
219.1	12.5	63.7	81.1	4345	7.32	397	534	8689	793	0.688	15.7
244.5	5	29.5	37.6	2699	8.47	221	287	5397	441	0.768	33.9
244.5	6	35.3	45	3199	8.43	262	341	6397	523	0.768	28.3
244.5	6.3	37	47.1	3346	8.42	274	358	6692	547	0.768	27
244.5	8	46.7	59.4	4160	8.37	340	448	8321	681	0.768	21.4
244.5	10	57.8	73.7	5073	8.3	415	550	10150	830	0.768	17.3
244.5	12	68.8	87.7	5938	8.23	486	649	11880	972	0.768	14.5
244.5	12.5	71.5	91.1	6147	8.21	503	673	12300	1006	0.768	14
273	5	33	42.1	3781	9.48	277	359	7562	554	0.858	30.3
273	6	39.5	50.3	4487	9.44	329	428	8974	657	0.858	25.3
273	6.3	41.4	52.8	4696	9.43	344	448	9392	688	0.858	24.1
273	8	52.3	66.6	5852	9.37	429	562	11700	857	0.858	19.1
273	10	64.9	82.6	7154	9.31	524	692	14310	1048	0.858	15.4
273	12	77.2	98.4	8396	9.24	615	818	16790	1230	0.858	12.9
273	12.5	80.3	102	8697	9.22	637	849	17400	1274	0.858	12.5
323.9	5	39.3	50.1	6369	11.3	393	509	12740	787	1.02	25.4
323.9	6	47	59.9	7572	11.2	468	606	15150	935	1.02	21.3
323.9	6.3	49.3	62.9	7929	11.2	490	636	15860	979	1.02	20.3
323.9	8	62.3	79.4	9910	11.2	612	799	19820	1224	1.02	16
323.9	10	77.4	98.6	12160	11.1	751	986	24320	1501	1.02	12.9
323.9	12	92.3	118	14320	11	884	1168	28640	1768	1.02	10.8
323.9	12.5	96	122	14850	11	917	1213	29690	1833	1.02	10.4
355.6	5	43.2	55.1	8464	12.4	476	615	16930	952	1.12	23.1
355.6	6	51.7	65.9	10070	12.4	566	733	20140	1133	1.12	19.3
355.6	6.3	54.3	69.1	10550	12.4	593	769	21090	1186	1.12	18.4
355.6	8	68.6	87.4	13200	12.3	742	967	26400	1485	1.12	14.6
355.6	10	85.2	109	16220	12.2	912	1195	32450	1825	1.12	11.7
355.6	12	102	130	19140	12.2	1076	1417	38280	2153	1.12	9.83
355.6	12.5	106	135	19850	12.1	1117	1472	39700	2233	1.12	9.45
355.6	16	134	171	24660	12	1387	1847	49330	2774	1.12	7.46
355.6	20	166	211	29800	11.9	1676	2255	59580	3351	1.12	6.04
406.4	6	59.2	75.5	15130	14.2	745	962	30260	1489	1.28	16.9
406.4	6.3	62.2	79.2	15850	14.1	780	1009	31700	1560	1.28	16.1
406.4	8	78.6	100	19870	14.1	978	1270	39750	1956	1.28	12.7
406.4	10	97.8	125	24480	14	1205	1572	48950	2409	1.28	10.2
406.4	12	117	149	28940	14	1424	1867	57870	2848	1.28	8.57
406.4	12.5	121	155	30030	13.9	1478	1940	60060	2956	1.28	8.24
406.4	16	154	196	37450	13.8	1843	2440	74900	3686	1.28	6.49
406.4	20	191	243	45430	13.7	2236	2989	90860	4472	1.28	5.25
406.4	25	235	300	54700	13.5	2692	3642	109400	5384	1.28	4.25
457	6	66.7	85	21620	15.9	946	1220	43240	1892	1.44	15
457	6.3	70	89.2	22650	15.9	991	1280	45310	1983	1.44	14.3
457	8	88.6	113	28450	15.9	1245	1613	56900	2490	1.44	11.3
457	10	110	140	35090	15.8	1536	1998	70180	3071	1.44	9.07
457	12	132	168	41560	15.7	1819	2377	83110	3637	1.44	7.59
457	12.5	137	175	43150	15.7	1888	2470	86290	3776	1.44	7.3
457	16	174	222	53960	15.6	2361	3113	107900	4723	1.44	5.75
457	20	216	275	65680	15.5	2874	3822	131400	5749	1.44	4.64
457	25	266	339	79420	15.3	3475	4671	158800	6951	1.44	3.75
457	30	316	402	92170	15.1	4034	5479	184400	8068	1.44	3.17
508	6	74.3	94.6	29810	17.7	1174	1512	59620	2347	1.6	13.5
508	6.3	77.9	99.3	31250	17.7	1230	1586	62490	2460	1.6	12.8
508	8	98.6	126	39280	17.7	1546	2000	78560	3093	1.6	10.1
508	10	123	156	48520	17.6	1910	2480	97040	3820	1.6	8.14
508	12	147	187	57540	17.5	2265	2953	115100	4530	1.6	6.81
508	12.5	153	195	59760	17.5	2353	3070	119500	4705	1.6	6.55
508	16	194	247	74910	17.4	2949	3874	149800	5898	1.6	6.15
508	20	241	307	91430	17.3	3600	4766	182900	7199	1.6	4.15
508	25	298	379	111000	17.1	4367	5837	221800	8734	1.6	3.36
508	30	354	451	129200	16.9	5086	6864	258400	10170	1.6	2.83

Rectangular Steel Pipe as per EN 10219/2001

Specified Outside Diameter		Specified Thickness	Mass per Unit Length	Cross-Sectional Area	Second Moment of Area		Radius of Gyration		Elastic Section Modulus		Plastic Section Modulus		Torsional Inertia Constant	Super-Ficial Area per Metre Length		Nominal Length per Tonne
B*H		T	M	A	Iyy	Izz	Iyy	Izz	W_{elyy}	W_{elzz}	W_{plyy}	W_{plzz}	I_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3	cm^4	cm^3	m^2/m	m
40	20	2	1.68	2.14	4.05	1.34	1.38	0.793	2.02	1.34	2.61	1.6	3.45	2.36	0.113	596
40	20	2.5	2.03	2.59	4.69	1.54	1.35	0.77	2.35	1.54	3.09	1.88	4.06	2.72	0.111	492
40	20	3	2.36	3.01	5.21	1.68	1.32	0.748	2.6	1.68	3.5	2.12	4.57	3.00	0.110	423
50	30	2	2.31	2.94	9.54	4.29	1.8	1.21	3.81	2.86	4.74	3.33	9.77	4.84	0.153	434
50	30	2.5	2.82	3.59	11.3	5.05	1.77	1.19	4.52	3.37	5.7	3.98	11.7	5.72	0.151	355
50	30	3	3.3	4.21	12.8	5.7	1.75	1.16	5.13	3.8	6.57	4.58	13.5	6.49	0.150	303
50	30	4	4.2	5.35	15.3	6.69	1.69	1.12	6.1	4.46	8.05	5.58	16.5	7.71	0.146	238
60	40	2	2.93	3.74	18.4	9.83	2.22	1.62	6.14	4.92	7.47	5.65	20.7	8.12	0.193	341
60	40	2.5	3.6	4.59	22.1	11.7	2.19	1.6	7.36	5.87	9.06	6.84	25.1	9.72	0.191	278
60	40	3	4.25	5.41	25.4	13.4	2.17	1.58	8.46	6.72	10.5	7.94	29.3	11.20	0.190	236
60	40	4	5.45	6.95	31	16.3	2.11	1.53	10.3	8.14	13.2	9.89	36.7	13.70	0.186	183
60	40	5	6.56	8.36	35.3	18.4	2.06	1.48	11.8	9.21	15.4	11.5	42.8	15.60	0.183	152
70	50	2	3.56	4.54	31.5	18.8	2.63	2.03	8.99	7.5	10.8	8.58	37.5	12.20	0.233	281
70	50	2.5	4.39	5.59	38	22.6	2.61	2.01	10.9	9.04	13.2	10.4	45.8	14.70	0.231	228
70	50	3	5.19	6.61	44.1	26.1	2.58	1.99	12.6	10.4	15.4	12.2	53.6	17.10	0.230	193
70	50	4	6.71	8.55	54.7	32.2	2.53	1.94	15.6	12.9	19.5	15.4	68.1	21.20	0.226	149
70	50	5	8.13	10.4	63.5	37.2	2.48	1.9	18.1	14.9	23.1	18.2	80.8	24.60	0.223	123
80	40	2	3.56	4.54	37.4	12.7	2.87	1.67	9.34	6.36	11.6	7.17	30.9	11.00	0.233	281
80	40	2.5	4.39	5.59	45.1	15.3	2.84	1.65	11.3	7.63	14.1	8.72	37.6	13.20	0.231	228
80	40	3	5.19	6.61	52.3	17.6	2.81	1.63	13.1	8.78	16.5	10.2	43.9	15.30	0.230	193
80	40	4	6.71	8.55	64.8	21.5	2.75	1.59	16.2	10.7	20.9	12.8	55.2	18.80	0.226	149
80	40	5	8.13	10.4	75.1	24.6	2.69	1.54	18.8	12.3	24.7	15	65	21.70	0.223	123
80	60	2	4.19	5.34	49.5	31.9	3.05	2.44	12.4	10.6	14.7	12.1	61.2	17.10	0.273	239
80	60	2.5	5.17	6.59	60.1	38.6	3.02	2.42	15	12.9	18	14.8	75.1	20.70	0.271	193
80	60	3	6.13	7.81	70	44.9	3	2.4	17.5	15	21.2	17.4	88.3	24.10	0.270	163
80	60	4	7.97	10.1	87.9	56.1	2.94	2.35	22	18.7	27	22.1	113	30.30	0.266	126
80	60	5	9.7	12.4	103	65.7	2.89	2.31	25.8	21.9	32.2	26.4	136	35.70	0.263	103
90	50	2	4.19	5.34	57.9	23.4	3.29	2.09	12.9	9.35	15.7	10.5	53.4	15.90	0.273	239
90	50	2.5	5.17	6.59	70.3	28.2	3.27	2.07	15.6	11.3	19.3	12.8	65.3	19.20	0.271	193
90	50	3	6.13	7.81	81.9	32.7	3.24	2.05	18.2	13.1	22.6	15	76.7	22.40	0.270	163
90	50	4	7.97	10.1	103	40.7	3.18	2	22.8	16.3	28.8	19.1	97.7	28.00	0.266	126
90	50	5	9.7	12.4	121	47.4	3.12	1.96	26.8	18.9	34.4	22.7	116	32.70	0.263	103
100	40	2.5	5.17	6.59	79.3	18.8	3.47	1.69	15.9	9.39	20.2	10.6	50.5	16.80	0.271	193
100	40	3	6.13	7.81	92.3	21.7	3.44	1.67	18.5	10.8	23.7	12.4	59	19.40	0.270	163
100	40	4	7.97	10.1	116	26.7	3.38	1.62	23.1	13.3	30.3	15.7	74.5	24.00	0.266	126
100	40	5	9.7	12.4	136	30.8	3.31	1.58	27.1	15.4	36.1	18.5	87.9	27.90	0.263	103
100	50	2.5	5.56	7.09	91.2	31.1	3.59	2.09	18.2	12.4	22.7	14	75.4	21.50	0.291	180
100	50	3	6.6	8.41	106	36.1	3.56	2.07	21.3	14.4	26.7	16.4	88.6	25.00	0.290	152
100	50	4	8.59	10.9	134	44.9	3.5	2.03	26.8	18	34.1	20.9	113	31.30	0.286	116
100	50	5	10.5	13.4	158	52.5	3.44	1.98	31.6	21	40.8	25	135	36.80	0.283	95.4
100	50	6	12.3	15.6	179	58.7	3.38	1.94	35.8	23.5	46.9	28.5	154	41.40	0.279	81.5
100	50	6.3	12.5	15.9	176	58.2	3.32	1.91	35.1	23.3	45.9	28.6	158	42.10	0.273	79.9
100	60	2.5	5.96	7.59	103	46.9	3.69	2.49	20.6	15.6	25.1	17.7	103	26.20	0.311	168
100	60	3	7.07	9.01	121	54.6	3.66	2.46	24.1	18.2	29.6	20.8	122	30.60	0.310	141
100	60	4	9.22	11.7	153	68.7	3.6	2.42	30.5	22.9	37.9	26.6	156	38.70	0.306	108
100	60	5	11.3	14.4	181	80.8	3.55	2.37	36.2	26.9	45.6	31.9	188	45.80	0.303	88.7
100	60	6	13.2	16.8	205	91.2	3.49	2.33	41.1	30.4	52.5	36.6	216	51.90	0.299	75.7
100	60	6.3	13.5	17.2	203	90.9	3.44	2.3	40.7	30.3	52.8	36.9	223	53.00	0.293	74
100	80	2.5	6.74	8.59	127	90.2	3.84	3.24	25.4	22.5	30	25.8	166	35.70	0.351	148
100	80	3	8.01	10.2	149	106	3.82	3.22	29.8	26.4	35.4	30.4	196	41.90	0.350	125
100	80	4	10.5	13.3	189	134	3.77	3.17	37.9	33.5	45.6	39.2	254	53.40	0.346	95.4
100	80	5	12.8	16.4	226	160	3.72	3.12	45.2	39.9	55.1	47.2	308	63.7	0.343	77.9
100	80	6	15.1	19.2	258	182	3.67	3.08	51.7	45.5	63.8	54.7	357	73.00	0.339	66.2
100	80	6.3	15.5	19.7	259	183	3.62	3.04	51.8	45.7	64.6	55.4	371	75.00	0.333	64.6

Rectangular Steel Pipe as per EN 10219/2001

Specified Outside Diameter		Specified Thickness	Mass per Unit Length	Cross-Sectional Area	Second Moment of Area		Radius of Gyration		Elastic Section Modulus		Plastic Section Modulus		Torsional Inertia Constant	Super-Ficial Area per Metre Length		Nominal Length per Tonne
B*H		T	M	A	Iyy	Izz	Iyy	Izz	W_{elyy}	W_{elzz}	W_{plyy}	W_{plzz}	I_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm^4	cm^4	cm	cm	cm^3	cm^3	cm^3	cm^3	cm^4	cm^3	m^2/m	m
250	150	5	30.1	38.4	3304	1508	9.28	6.27	264	201	320	225	3285	337.00	0.783	33.2
250	150	6	35.8	45.6	3886	1768	9.23	6.23	311	236	378	266	3886	396.00	0.779	27.9
250	150	6.3	37.2	47.4	4001	1825	9.18	6.2	320	243	391	276	4078	412.00	0.773	26.8
250	150	8	46.5	59.2	4886	2219	9.08	6.12	391	296	482	340	5050	504.00	0.766	21.5
250	150	10	57	72.6	5825	2634	8.96	6.02	466	351	582	409	6121	602.00	0.757	17.6
250	150	12	66	84.1	6458	2925	8.77	5.9	517	390	658	463	7088	684.00	0.738	15.2
250	150	12.5	68.3	87	6633	3002	8.73	5.87	531	400	678	477	7315	704.00	0.736	14.6
250	150	16	83.8	106.8	7660	3453	8.47	5.69	613	460	805	566	8713	823.00	0.718	11.9
260	180	5	33.2	42.4	4121	2350	9.86	7.45	317	261	377	294	4695	426.00	0.863	30.1
260	180	6.3	41.2	52.5	5013	2856	9.77	7.38	386	317	463	361	5844	523.00	0.853	24.3
260	180	8	51.5	65.6	6145	3493	9.68	7.29	473	388	573	446	7267	642.00	0.846	19.4
260	180	10	63.2	80.6	7363	4174	9.56	7.2	566	464	694	540	8850	772.00	0.837	15.8
260	180	12	73.5	93.7	8245	4679	9.38	7.07	634	520	790	615	10330	884.00	0.818	13.6
260	180	12.5	76.2	97	8482	4812	9.35	7.04	652	535	815	635	10680	911.00	0.816	13.1
260	180	16	93.9	120	9923	5614	9.11	6.85	763	624	977	759	12890	1079.00	0.798	10.7
300	100	6	35.8	45.6	4777	842	10.2	4.3	318	168	411	188	2403	306.00	0.779	27.9
300	100	6.3	37.2	47.4	4907	868	10.2	4.28	327	174	425	194	2515	318.00	0.773	26.8
300	100	8	46.5	59.2	5978	1045	10	4.2	399	209	523	238	3080	385.00	0.766	21.5
300	100	10	57	72.6	7016	1224	9.9	4.11	474	245	631	285	3681	455.00	0.757	17.6
300	100	12	66	84.1	7808	1343	9.64	4	521	269	710	321	4177	508.00	0.738	15.2
300	100	12.5	68.3	87	8010	1374	9.59	3.97	534	275	732	330	4292	521.00	0.736	14.6
300	100	16	83.8	107	9157	1543	9.26	3.8	610	309	865	386	4939	592.00	0.718	11.9
300	150	6	40.5	51.6	6074	2080	10.8	6.35	405	277	500	309	4988	479.00	0.879	24.7
300	150	6.3	42.2	53.7	6266	2150	10.8	6.32	418	287	517	321	5234	499.00	0.873	23.7
300	150	8	52.8	67.2	7684	2623	10.7	6.25	512	350	640	396	6491	612.00	0.866	18.9
300	150	10	64.8	82.6	9209	3125	10.6	6.15	614	417	776	479	7879	733.00	0.857	15.4
300	150	12	75.4	96.1	10300	3498	10.4	6.03	687	466	883	546	9153	837.00	0.838	13.3
300	150	12.5	78.1	99.5	10590	3595	10.3	6.01	706	479	912	563	9452	862.00	0.836	12.8
300	150	16	96.4	123	12390	4174	10	5.83	826	557	1092	673	11330	1015.00	0.818	10.4
300	200	6	45.2	57.6	7370	3962	11.3	8.29	491	396	588	446	8115	651.00	0.979	22.1
300	200	6.3	47.1	60	7624	4104	11.3	8.27	508	410	610	463	8524	680.00	0.973	21.2
300	200	8	59.1	75.2	9389	5042	11.2	8.19	626	504	757	574	10630	838.00	0.966	16.9
300	200	10	72.7	92.6	11310	6058	11.1	8.09	754	606	921	698	12990	1012.00	0.957	13.8
300	200	12	84.8	108	12790	6854	10.9	7.96	853	685	1056	801	15240	1167.00	0.938	11.8
300	200	12.5	88	112	13180	7060	10.8	7.94	879	706	1091	828	15770	1204.00	0.936	11.4
300	200	16	109	139	15620	8340	10.6	7.75	1041	834	1319	1000	19220	1442.00	0.918	9.18
350	250	6	54.7	69.6	12460	7458	13.4	10.3	712	597	843	671	14550	967.00	1.180	18.3
350	250	6.3	57	72.6	12920	7744	13.3	10.3	738	620	876	698	15290	1010.00	1.170	17.5
350	250	8	71.6	91.2	16000	9573	13.2	10.2	914	766	1092	869	19140	1253.00	1.170	14
350	250	10	88.4	113	19410	11590	13.1	10.1	1109	927	1335	1062	23500	1522.00	1.160	11.3
350	250	12	104	132	22200	13260	13	10	1268	1061	1544	1229	27750	1770.00	1.140	9.65
350	250	12.5	108	137	22920	13690	12.9	9.99	1310	1095	1598	1272	28770	1830.00	1.140	9.3
350	250	16	134	171	27580	16430	12.7	9.81	1576	1315	1954	1554	35500	2220.00	1.120	7.46
400	200	8	71.6	91.2	18970	6517	14.4	8.45	949	652	1173	728	15820	1133.00	1.170	14
400	200	12.5	108	137	27100	9260	14.1	8.22	1355	926	1714	1062	23600	1644.00	1.140	9.3
400	200	16	134	171	32550	11060	13.8	8.05	1627	1106	2093	1294	28930	1984.00	1.120	7.46
400	300	8	84.2	107	25120	16210	15.3	12.3	1256	1081	1487	1224	31180	1747.00	1.370	11.9
400	300	10	104	133	30610	19730	15.2	12.2	1530	1315	1824	1501	38410	2132.00	1.360	9.61
400	300	12	123	156	35280	22750	15	12.1	1764	1516	2122	1747	45530	2492.00	1.340	8.16
400	300	12.5	127	162	36490	23520	15	12	1824	1568	2198	1810	47240	2580.00	1.340	7.86
400	300	16	159	203	44350	28540	14.8	11.9	2218	1902	2708	2228	58730	3159.00	1.320	6.28

Square Steel Pipe as per EN 10219/2001

Specified Outside Diameter	Specified Thickness	Mass per Unit Length	Cross-Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Section Modulus	Plastic Section Modulus	Torsional Inertia Constant	Torsional Modulus Constant	Super-Ficial Area per Metre Length	Nominal Length per Tonne
B	T	M	A	I	i	W_{el}	W_{pl}	L_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2/m	m
20	2	1.05	1.34	0.692	0.72	0.692	0.877	1.21	1.06	0.0731	953
25	2	1.36	1.74	1.48	0.924	1.19	1.47	2.53	1.8	0.0931	733
25	2.5	1.64	2.09	1.69	0.899	1.35	1.71	2.97	2.07	0.0914	610
25	3	1.89	2.41	1.84	0.874	1.47	1.91	3.33	2.27	0.0897	529
30	2	1.68	2.14	2.72	1.13	1.81	2.21	4.54	2.75	0.113	596
30	2.5	2.03	2.59	3.16	1.1	2.1	2.61	5.4	3.2	0.111	492
30	3	2.36	3.01	3.5	1.08	2.34	2.96	6.15	3.58	0.11	423
40	2	2.31	2.94	6.94	1.54	3.47	4.13	11.3	5.23	0.153	434
40	2.5	2.82	3.59	8.22	1.51	4.11	4.97	13.6	6.21	0.151	355
40	3	3.3	4.21	9.32	1.49	4.66	5.72	15.8	7.07	0.15	303
40	4	4.2	5.35	11.1	1.44	5.54	7.01	19.4	8.48	0.146	238
50	2	2.93	3.74	14.1	1.95	5.66	6.66	22.6	8.51	0.193	341
50	2.5	3.6	4.59	16.9	1.92	6.78	8.07	27.5	10.2	0.191	278
50	3	4.25	5.41	19.5	1.9	7.79	9.39	32.1	11.8	0.19	236
50	4	5.45	6.95	23.7	1.85	9.49	11.7	40.4	14.4	0.186	183
50	5	6.56	8.36	27	1.8	10.8	13.7	47.5	16.6	0.183	152
60	2	3.56	4.54	25.1	2.35	8.38	9.79	39.8	12.6	0.233	281
60	2.5	4.39	5.59	30.3	2.33	10.1	11.9	48.7	15.2	0.231	228
60	3	5.19	6.61	35.1	2.31	11.7	14	57.1	17.7	0.23	193
60	4	6.71	8.55	43.6	2.26	14.5	17.6	72.6	22	0.226	149
60	5	8.13	10.4	50.5	2.21	16.8	20.9	86.4	25.6	0.223	123
60	6	9.45	12	56.1	2.16	18.7	23.7	98.4	28.6	0.219	106
60	6.3	9.55	12.2	54.4	2.11	18.1	23.4	100	28.8	0.213	105
70	2.5	5.17	6.59	49.4	2.74	14.1	16.5	78.5	21.2	0.271	193
70	3	6.13	7.81	57.5	2.71	16.4	19.4	92.4	24.7	0.27	163
70	4	7.97	10.1	72.1	2.67	20.6	24.8	119	31.1	0.266	126
70	5	9.7	12.4	84.6	2.62	24.2	29.6	142	36.7	0.263	103
70	6	11.3	14.4	95.2	2.57	27.2	33.8	163	41.4	0.259	88.3
70	6.3	11.5	14.7	93.8	2.53	26.8	33.8	168	42.1	0.253	86.7
80	3	7.07	9.01	87.8	3.12	22	25.8	140	33	0.31	141
80	4	9.22	11.7	111	3.07	27.8	33.1	180	41.8	0.306	108
80	5	11.3	14.4	131	3.03	32.9	39.7	218	49.7	0.303	88.7
80	6	13.2	16.8	149	2.98	37.3	45.8	252	56.6	0.299	75.7
80	6.3	13.5	17.2	149	2.94	37.1	46.1	261	57.9	0.293	74
80	8	16.4	20.8	168	2.84	42.1	53.9	307	66.6	0.286	61.1
90	3	8.01	10.2	127	3.53	28.3	33	201	42.5	0.35	125
90	4	10.5	13.3	162	3.48	36	42.6	261	54.2	0.346	95.4
90	5	12.8	16.4	193	3.43	42.9	51.4	316	64.7	0.343	77.9
90	6	15.1	19.2	220	3.39	49	59.5	368	74.2	0.339	66.2
90	6.3	15.5	19.7	221	3.35	49.1	60.3	382	76.2	0.333	64.6
90	8	18.9	24	255	3.25	56.6	71.3	456	88.8	0.326	53
100	3	8.96	11.4	177	3.94	35.4	41.2	279	53.2	0.39	112
100	4	11.7	14.9	226	3.89	45.3	53.3	362	68.1	0.386	85.2
100	5	14.4	18.4	271	3.84	54.2	64.6	441	81.7	0.383	69.4
100	6	17	21.6	311	3.79	62.3	75.1	514	94.1	0.379	58.9
100	6.3	17.5	22.2	314	3.76	62.8	76.4	536	97	0.373	57.3
100	8	21.4	27.2	366	3.67	73.2	91.1	645	114	0.366	46.8
100	10	25.6	32.6	411	3.55	82.2	105	750	130	0.357	39.1
100	12	28.3	36.1	408	3.36	81.6	110	794	136	0.338	35.3
100	12.5	29.1	37	410	3.33	82.1	111	804	137	0.336	34.4
120	3	10.8	13.8	312	4.76	52.1	60.2	488	78.2	0.47	92.3
120	4	14.2	18.1	402	4.71	67	78.3	637	101	0.466	70.2
120	5	17.5	22.4	485	4.66	80.9	95.4	778	122	0.463	57
120	6	20.7	26.4	562	4.61	93.7	112	913	141	0.459	48.2
120	6.3	21.4	27.3	572	4.58	95.3	114	955	146	0.453	46.7
120	8	26.4	33.6	677	4.49	113	138	1163	175	0.446	37.9
120	10	31.8	40.6	777	4.38	129	162	1376	203	0.437	31.4
120	12	35.8	45.7	806	4.2	134	174	1518	219	0.418	27.9
120	12.5	36.9	47	817	4.17	136	178	1551	223	0.416	27.1

Square Steel Pipe as per EN 10219/2001

Specified Outside Diameter	Specified Thickness	Mass per Unit Length	Cross-Sectional Area	Second Moment of Area	Radius of Gyration	Elastic Section Modulus	Plastic Section Modulus	Torsional Inertia Constant	Torsional Modulus Constant	Super-Ficial Area per Metre Length	Nominal Length per Tonne
B	T	M	A	I	i	W_{el}	W_{pl}	L_t	C_t	A_s	
mm	mm	kg/m	cm^2	cm^4	cm	cm^3	cm^3	cm^4	cm^3	m^2/m	m
260	6	47.1	60	6405	10.3	493	569	9970	739	1.02	21.2
260	6.3	49.1	62.6	6635	10.3	510	591	10480	772	1.01	20.4
260	8	61.6	78.4	8178	10.2	629	734	13090	955	1.01	16.2
260	10	75.8	96.6	9865	10.1	759	894	16040	1156	0.997	13.2
260	12	88.6	113	11200	9.96	862	1028	18880	1337	0.978	11.3
260	12.5	91.9	117	11550	9.93	888	1063	19550	1381	0.976	10.9
260	16	114	145	13740	9.73	1057	1289	23990	1663	0.958	8.77
300	6	54.7	69.6	9964	12	664	764	15430	997	1.18	18.3
300	6.3	57	72.6	10340	11.9	689	795	16220	1042	1.17	17.5
300	8	71.6	91.2	12800	11.8	853	991	20310	1293	1.17	14
300	10	88.4	113	15520	11.7	1035	1211	24970	1572	1.16	11.3
300	12	104	132	17770	11.6	1184	1402	29510	1829	1.14	9.65
300	12.5	108	137	18350	11.6	1223	1451	30600	1892	1.14	9.3
300	16	134	171	22080	11.4	1472	1774	37840	2299	1.12	7.46
350	8	84.2	107	20680	13.9	1182	1366	32560	1787	1.37	11.9
350	10	104	133	25190	13.8	1439	1675	40130	2182	1.36	9.61
350	12	123	156	29050	13.6	1660	1949	47600	2552	1.34	8.16
350	12.5	127	162	30050	13.6	1717	2020	49390	2642	1.34	7.86
350	16	159	203	36510	13.4	2086	2488	61480	3238	1.32	6.28
400	10	120	153	38220	15.8	1911	2214	60430	2892	1.56	8.35
400	12	141	180	44320	15.7	2216	2587	71840	3395	1.54	7.07
400	12.5	147	187	45880	15.7	2294	2683	74600	3518	1.54	6.81
400	16	184	235	56150	15.5	2808	3322	93280	4336	1.52	5.43

ISO 65- Carbon Steel Tubes Suitable for Screwing in acc. ISO 7/1

DN	Designation of Thread	Outside Diameter	Thicknesses (T) and masses per unit length (M) according to the series											
			Heavy Series			Medium Series			Light Series 1			Light Series 2		
		D (mm)	T (mm)	Plain End	Screwed Socketed	T (mm)	Plain End	Screwed Socketed	T (mm)	Plain End	Screwed Socketed	T (mm)	Plain End	Screwed Socketed
				M (kg/m)	M (kg/m)		M (kg/m)	M (kg/m)		M (kg/m)	M (kg/m)		M (kg/m)	M (kg/m)
6	1/8	10.2	2.6	0.487	0.49	2	0.404	0.407	1.8	0.366	0.369	1.8	0.36	0.363
8	1/4	13.5	2.9	0.765	0.769	2.3	0.641	0.645	2	0.57	0.574	1.8	0.515	0.519
10	3/8	17.2	2.9	1.02	1.03	2.3	0.839	0.845	2	0.742	0.748	1.8	0.67	0.676
15	1/2	21.3	3.2	1.44	1.45	2.6	1.21	1.22	2.3	1.08	1.09	2	0.947	0.956
20	3/4	26.9	3.2	1.87	1.88	2.6	1.56	1.57	2.3	1.39	1.4	2.3	1.38	1.39
25	1	33.7	4	2.93	2.95	3.2	2.41	2.43	2.9	2.2	2.22	2.6	1.98	2
32	1 1/4	42.4	4	3.79	3.82	3.2	3.1	3.13	2.9	2.82	2.85	2.6	2.54	2.57
40	1 1/2	48.3	4	4.37	4.41	3.2	3.56	3.6	2.9	3.24	3.28	2.9	3.23	3.27
50	2	60.3	4.5	6.19	6.26	3.6	5.03	5.1	3.2	4.49	4.56	2.9	4.08	4.15
65	2 1/2	76.1	4.5	7.93	8.05	3.6	6.42	6.54	3.2	5.73	5.85	3.2	5.71	5.83
80	3	88.9	5	10.3	10.5	4	8.36	8.53	3.6	7.55	7.72	3.2	6.72	6.89
100	4	114.3	5.4	14.5	14.8	4.5	12.2	12.5	4	10.8	11.1	3.6	9.75	10
125	5	139.7	5.4	17.9	18.4	5	16.6	17.1						
150	6	165.1	5.4	21.3	21.9	5	19.8	20.4						

API 5L Line Pipe

Note 1.1psi=0.07031 kg/cm² 2.1lb/ft=0.45359kg/ft

Nominal Size	Outside Diameter(D)		Wall Thickness(t)		Weight(Wpe)		Calculated Inside Diameter(d)		Hydrostatic Test Pressure(psi)				
									Grade A25(Std)	Grade A (L210)		Grade B (L245)	
	in	mm	in	mm	lb/ft	kg/m	in	mm		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	1.7	0.824	20.9	700	700	-	700	-
			0.154	3.9	1.48	2.19	0.742	18.9	850	850		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=0.45359kg/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 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)
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	2410
									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
			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

ASTM A53 Welded Pipes / A106 Seamless Pipes

Dimensions, Weights (Masses) per Unit Length, and Test Pressures for Plain-End Pipe

Note 1.1psi=0.07031kg/cm2 2.1lb/ft=0.45359kg/ft

NPS Designator	DN Designator	Specified Outside Diameter, in.(mm)	Specified Wall Thickness, in.(mm)	Nominal Weight (Mass) per Unit Length, Plain End, lb/ft(kg/m)	Weight Class	Schedule No.	Test Pressure, psi [mPa]	
							Grade A	Grade B
1/2	15	0.840(21.3)	0.109(2.77)	0.85(1.27)	STD	40	700(4.8)	700(4.8)
			0.147(3.73)	1.09(1.62)	XS	80	850(5.9)	850(5.9)
			0.188(4.78)	1.31(1.95)	–	160	900(6.2)	900(6.2)
			0.294(7.47)	1.72(2.55)	XXS	--	1000(6.9)	1000(6.9)
3/4	20	1.050(26.7)	0.113(2.87)	1.13(1.69)	STD	40	700(4.8)	700(4.8)
			0.154(3.91)	1.48(2.20)	XS	80	850(5.9)	850(5.9)
			0.219(5.56)	1.95(2.90)	–	160	950(6.5)	950(6.5)
			0.308(7.82)	2.44(3.64)	XXS	--	1000(6.9)	1000(6.9)
1	25	1.315(33.4)	0.133(3.38)	1.68(2.50)	STD	40	700(4.8)	700(4.8)
			0.179(4.55)	2.17(3.24)	XS	80	850(5.9)	850(5.9)
			0.250(6.35)	2.85(4.24)	–	160	950(6.5)	950(6.5)
			0.358(9.09)	3.66(5.45)	XXS	--	1000(6.9)	1000(6.9)
1 1/4	32	1.660(42.2)	0.140(3.56)	2.27(3.39)	STD	40	1200(8.3)	1300(9.0)
			0.191(4.85)	3.00(4.47)	XS	80	1800(12.4)	1900(13.1)
			0.250(6.35)	3.77(5.61)	–	160	1900(13.1)	2000(13.8)
			0.382(9.70)	5.22(7.77)	XXS	--	2200(15.2)	2300(15.9)
1 1/2	40	1.900(48.3)	0.145(3.68)	2.72(4.05)	STD	40	1200(8.3)	1300(9.0)
			0.200(5.08)	3.63(5.41)	XS	80	1800(12.4)	1900(13.1)
			0.281(7.14)	4.86(7.25)	–	160	1950(13.4)	2050(14.1)
			0.400(10.16)	6.41(9.56)	XXS	--	2200(15.2)	2300(15.9)
2	50	2.375(60.3)	0.154(3.91)	3.66(5.44)	STD	40	2300(15.9)	2500(17.2)
			0.218(5.54)	5.03(7.48)	XS	80	2500(17.2)	2500(17.2)
			0.344(8.74)	7.47(11.11)	–	160	2500(17.2)	2500(17.2)
			0.436(11.07)	9.04(13.44)	XXS	--	2500(17.2)	2500(17.2)
2 1/2	65	2.875(73.0)	0.203(5.16)	5.80(8.63)	STD	40	2500(17.2)	2500(17.2)
			0.276(7.01)	7.67(11.41)	XS	80	2500(17.2)	2500(17.2)
			0.375(9.52)	10.02(14.90)	–	160	2500(17.2)	2500(17.2)
			0.552(14.02)	13.71(20.39)	XXS	--	2500(17.2)	2500(17.2)
3	80	3.500(88.9)	0.125(3.18)	4.51(6.72)	–	--	1290(8.9)	1500(10.0)
			0.156(3.96)	5.58(8.29)	–	--	1600(11.0)	1870(12.9)
			0.188(4.78)	6.66(9.92)	–	--	1930(13.33)	2260(15.6)
			0.216(5.49)	7.58(11.29)	STD	40	2220(15.3)	2500(17.2)
			0.250(6.35)	8.69(12.93)	–	--	2500(17.2)	2500(17.2)
			0.281(7.14)	9.67(14.40)	–	--	2500(17.2)	2500(17.2)
			0.300(7.62)	10.26(15.27)	XS	80	2500(17.2)	2500(17.2)
			0.438(11.13)	14.34(21.35)	–	160	2500(17.2)	2500(17.2)
			0.600(15.24)	18.60(27.68)	XXS	--	2500(17.2)	2500(17.2)
3 1/2	90	4.000(101.6)	0.125(3.18)	5.18(7.72)	–	--	1120(7.7)	1310(9.0)
			0.156(3.96)	6.41(9.53)	–	--	1400(9.7)	1640(11.3)
			0.188(4.78)	7.66(11.41)	–	--	1690(11.7)	1970(13.6)
			0.226(5.74)	9.12(13.57)	STD	40	2030(14.0)	2370(16.3)
			0.250(6.35)	10.02(14.92)	–	--	2250(15.5)	2500(17.2)
			0.281(7.14)	11.17(16.63)	–	--	2500(17.2)	2500(17.2)
			0.318(8.08)	12.52(18.63)	XS	80	2800(19.3)	2800(19.3)

ASTM A53 Welded Pipes / A106 Seamless Pipes

Dimensions, Weights (Masses) per Unit Length, and Test Pressures for Plain-End Pipe

Note 1.1psi=0.07031kg/cm2 2.1lb/ft=0.45359kg/ft								
NPS Designator	DN Designator	Specified Outside Diameter, in.(mm)	Specified Wall Thickness, in.(mm)	Nominal Weight (Mass) per Unit Length, Plain End, lb/ft(kg/m)	Weight Class	Schedule No.	Test Pressure, psi [mPa]	
							Grade A	Grade B
20	500	20.000(508)	0.250 (6.35)	52.78(78.55)	–	10	450(3.1)	520(3.6)
			0.281 (7.14)	59.23(88.19)	–	–	510 (3.5)	590 (4.1)
			0.312 (7.92)	65.66(97.67)	–	–	560 (3.9)	660(4.5)
			0.344 (8.74)	72.28(107.60)	–	–	620 (4.3)	720 (5.0)
			0.375 (9.52)	78.67(117.02)	STD	20	680 (4.7)	790 (5.4)
			0.406(10.31)	84.04(126.53)	–	–	730 (5.0)	850 (5.9)
			0.438 (11.13)	91.59(136.37)	–	–	790 (5.4)	920 (6.3)
			0.469(11.91)	97.92(145.70)	–	–	850 (5.9)	950 (6.5)
			0.500(12.70)	104.23(155.12)	XS	30	900 (6.2)	1050 (7.2)
			0.594(15.09)	123.23(183.42)	–	40	1170(8.1)	1250 (8.6)
			0.812(20.62)	166.56(247.83)	–	60	1460 (10.1)	1710(11.80)
			1.031(26.19)	209.06(311.17)	–	80	1860 (12.8)	2170 (15.0)
			1.281(32.54)	256.34(381.53)	–	100	2310 (15.9)	2690 (18.5)
			1.500(38.10)	296.65(441.49)	–	120	2700 (18.6)	2800 (19.3)
			1.750(44.45)	341.41(508.11)	–	140	2800 (19.3)	2800 (19.3)
			1.969(50.01)	379.53(564.81)	–	160	2800 (19.3)	2800 (19.3)
24	600	24.000(610)	0.250 (6.35)	63.47(94.46)	–	10	380(2.6)	440(3.0)
			0.281 (7.14)	71.25(106.08)	–	–	420 (2.9)	490 (3.4)
			0.312 (7.92)	79.01(117.51)	–	–	470(3.2)	550(3.8)
			0.344 (8.74)	86.99(129.5)	–	–	520 (3.6)	600 (4.1)
			0.375 (9.52)	94.71(140.88)	STD	20	560 (3.9)	660 (4.5)
			0.406(10.31)	102.40(152.37)	–	–	610 (4.2)	710 (4.9)
			0.438 (11.13)	110.32(164.26)	–	–	660 (4.5)	770 (5.3)
			0.469(11.91)	117.98(175.54)	–	–	700 (4.8)	820 (5.7)
			0.500(12.70)	125.61(186.94)	XS	–	750 (5.2)	880 (6.1)
			0.562(14.27)	140.81(209.50)	–	30	840(5.8)	980 (6.8)
			0.688(17.48)	171.45(255.24)	–	40	1030 (7.1)	1200(8.3)
			0.938 (23.83)	231.25(344.23)	–	–	1410 (9.7)	1640 (11.3)
			0.969 (24.61)	238.57(355.02)	–	60	1450 (10.0)	1700 (11.7)
			1.219(30.96)	296.86(441.78)	–	80	1830 (12.6)	2130 (14.7)
			1.531(38.89)	367.74(547.33)	–	100	2300 (15.9)	2680 (18.5)
			1.812(46.02)	429.79(639.58)	–	120	2720 (18.8)	2800 (19.3)
			2.062(52.37)	483.57(719.63)	–	140	2800 (19.3)	2800 (19.3)
			2.344(59.54)	542.64(807.63)	–	160	2800 (19.3)	2800 (19.3)
26	650	26.000(660)	0.250 (6.35)	68.82(102.42)	–	–	350(2.4)	400(2.8)
			0.281 (7.14)	77.26(115.02)	–	–	390 (2.7)	450 (3.1)
			0.312 (7.92)	85.68(127.43)	–	10	430(3.0)	500(3.4)
			0.344 (8.74)	94.35(140.45)	–	–	480(3.3)	560 (3.9)
			0.375 (9.52)	102.72(152.80)	STD	–	520 (3.6)	610 (4.2)
			0.406(10.31)	111.08(165.28)	–	–	560 (3.9)	660 (4.5)
			0.438 (11.13)	119.69(178.20)	–	–	610 (4.2)	710 (4.9)
			0.469(11.91)	128.00(190.46)	–	–	650 (4.5)	760 (5.2)
			0.500(12.70)	136.30(202.85)	XS	20	690 (4.8)	810 (5.6)
			0.562(14.27)	152.83(227.37)	–	–	780(5.4)	910 (6.3)

ASTM A53 Welded Pipes / A106 Seamless Pipes

Dimensions, Weights (Masses) per Unit Length, and Test Pressures for Threaded and Coupled Pipe

Note 1.1psi=0.07031kg/cm^2 2.1lb/ft=0.45359kg/ft

NPS Designator	DN Designator	Specified Outside Diameter, in.(mm)	Specified Wall Thickness, in.(mm)	Nominal Weight (Mass) per Unit Length, Plain End, lb/ft(kg/m)	Weight Class	Schedule No.	Test Pressure, psi [mPa]	
							Grade A	Grade B
1/2	15	0.840(21.3)	0.109(2.77)	0.86(1.27)	STD	40	700(4.8)	700(4.8)
			0.147(3.73)	1.09(1.62)	XS	80	850(5.9)	850(5.9)
			0.294(7.47)	1.72(2.54)	XXS	--	1000(6.9)	1000(6.9)
3/4	20	1.050(26.7)	0.113(2.87)	1.14(1.69)	STD	40	700(4.8)	700(4.8)
			0.154(3.91)	1.48(2.21)	XS	80	850(5.9)	850(5.9)
			0.308(7.82)	2.45(3.64)	XXS	--	1000(6.9)	1000(6.9)
1	25	1.315(33.4)	0.133(3.38)	1.69(2.50)	STD	40	700(4.8)	700(4.8)
			0.179(4.55)	2.19(3.25)	XS	80	850(5.9)	850(5.9)
			0.358(9.09)	3.66(5.45)	XXS	--	1000(6.9)	1000(6.9)
1 1/4	32	1.660(42.2)	0.140(3.56)	2.28(3.40)	STD	40	1000(6.9)	1100(7.6)
			0.191(4.85)	3.03(4.49)	XS	80	1500(10.3)	1600(11.0)
			0.382(9.70)	5.23(7.76)	XXS	--	1800(12.4)	1900(13.1)
1 1/2	40	1.900(48.3)	0.145(3.68)	2.74(4.04)	STD	40	1000(6.9)	1100(7.6)
			0.200(5.08)	3.65(5.39)	XS	80	1500(10.3)	1600(11.0)
			0.400(10.16)	6.41(9.56)	XXS	--	1800(12.4)	1900(13.1)
2	50	2.375(60.3)	0.154(3.91)	3.68(5.46)	STD	40	2300(15.9)	2500(17.2)
			0.218(5.54)	5.08(7.55)	XS	80	2500(17.2)	2500(17.2)
			0.436(11.07)	9.06(13.44)	XXS	--	2500(17.2)	2500(17.2)
2 1/2	65	2.875(73.0)	0.203(5.16)	5.85(8.67)	STD	40	2500(17.2)	2500(17.2)
			0.276(7.01)	7.75(11.52)	XS	80	2500(17.2)	2500(17.2)
			0.552(14.02)	13.72(20.39)	XXS	--	2500(17.2)	2500(17.2)
3	80	3.500(88.9)	0.216(5.49)	7.68(11.35)	STD	40	2200(15.2)	2500(17.2)
			0.300(7.62)	10.35(15.39)	XS	80	2500(17.2)	2500(17.2)
			0.600(15.24)	18.60(27.66)	XXS	--	2500(17.2)	2500(17.2)
3 1/2	90	4.000(101.6)	0.226(5.74)	9.27(13.71)	STD	40	2000(13.8)	2400(16.5)
			0.318(8.08)	12.67(18.82)	XS	80	2800(19.3)	2800(19.3)
4	100	4.500(114.3)	0.237 (6.02)	10.92(16.23)	STD	40	1900 (13.1)	2200 (15.2)
			0.337 (8.56)	15.20(22.60)	XS	80	2700 (18.6)	2800 (19.3)
			0.674(17.12)	27.62(41.09)	XXS	--	2800 (19.3)	2800 (19.3)
5	125	5.563(141.3)	0.258 (6.55)	14.90(22.07)	STD	40	1700 (11.7)	1900 (13.1)
			0.375 (9.52)	21.04(31.42)	XS	80	2400 (16.5)	2800 (19.3)
			0.750(19.05)	38.63(57.53)	XXS	--	2800 (19.3)	2800 (19.3)
6	150	6.625(168.3)	0.280 (7.11)	19.34(28.58)	STD	40	1500 (10.3)	1800 (12.4)
			0.432(10.97)	28.88(43.05)	XS	80	2300 (15.9)	2700 (18.6)
			0.864(21.95)	53.19(79.18)	XXS	--	2800(19.3)	2800(19.3)
8	200	8.625(219.1)	0.277 (7.04)	25.53(38.07)	--	30	1200 (8.3)	1300 (9.0)
			0.322 (8.18)	29.35(43.73)	STD	40	1300 (9.0)	1600 (11.0)
			0.500(12.70)	44.00(65.41)	XS	80	2100(14.5)	2400 (16.5)
			0.875(22.22)	72.69(107.94)	XXS	--	2800 (19.3)	2800 (19.3)
10	250	10.750(273.0)	0.279 (7.09)	32.33(48.80)	--	--	950 (6.5)	1100 (7.6)
			0.307 (7.80)	35.33(53.27)	--	30	1000 (6.9)	1200 (8.3)
			0.365 (9.27)	41.49(63.36)	STD	40	1200 (8.3)	1400 (9.7)
			0.500(12.70)	55.55(83.17)	XS	60	1700 (11.7)	2000 (13.8)
12	300	12.750(323.8)	0.330 (8.38)	45.47(67.72)	--	30	950 (6.5)	1100 (7.6)
			0.375 (9.52)	51.28(76.21)	STD	--	1100 (7.6)	1200 (8.3)
			0.500(12.7)	66.91(99.4)	XS	--	1400 (9.7)	1600 (11.0)

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Outside Diameter in.	Nominal wall Thickness in.	Weight Per Unit Lengths lb/ft
6	0.134	8.4
	0.141	8.83
	0.156	9.75
	0.164	10.23
	0.172	10.72
8	0.141	11.85
	0.172	14.39
8 5/8	0.109	9.92
	0.141	12.79
	0.172	15.54
	0.188	16.96
	0.203	18.28
	0.219	19.68
	0.25	22.38
	0.277	24.72
	0.312	27.73
	0.322	28.58
	0.344	30.45
	0.375	33.07
	0.438	38.33
	0.5	43.43
10	0.109	11.53
	0.12	12.67
	0.134	14.13
	0.141	14.86
	0.15	15.79
	0.164	17.24
	0.172	18.07
	0.179	18.79
	0.188	19.72
	0.203	21.26
	0.219	22.9
	0.23	24.02
	0.25	26.06
10 3/4	0.109	12.4
	0.12	13.64
	0.134	15.21
	0.141	15.99
	0.15	17
	0.164	18.56
	0.172	19.45
	0.179	20.23
	0.188	21.23
	0.203	22.89
	0.219	24.65
	0.23	25.87
	0.25	28.06
	0.279	31.23
	0.307	34.27
	0.344	38.27
	0.365	40.52
	0.438	48.28
	0.5	54.79

Outside Diameter in.	Nominal wall Thickness in.	Weight Per Unit Lengths lb/ft
10 3/4	0.365	40.52
	0.438	48.28
	0.5	54.79
12	0.134	17
	0.141	17.87
	0.15	19
	0.164	20.75
	0.172	21.75
	0.179	22.62
	0.188	23.74
	0.203	25.6
	0.219	27.58
	0.23	28.94
	0.25	31.4
	0.281	35.2
	0.312	38.98
12 3/4	0.109	14.73
	0.134	18.07
	0.141	19.01
	0.15	20.2
	0.164	22.07
	0.172	23.13
	0.179	24.05
	0.188	25.25
	0.203	27.23
	0.219	29.34
	0.23	30.78
	0.25	33.41
	0.281	37.46
	0.312	41.48
	0.33	43.81
	0.344	45.62
	0.375	49.61
	0.438	57.65
	0.5	65.48
14	0.134	19.86
	0.141	20.89
	0.15	22.21
	0.164	24.26
	0.172	25.43
	0.179	26.45
	0.188	27.76
	0.203	29.94
	0.219	32.26
	0.23	33.86
	0.25	36.75
	0.281	41.21
	0.312	45.65
	0.344	50.22
	0.375	54.62
	0.438	63.5
	0.469	67.84
	0.5	72.16

Outside Diameter in.	Nominal wall Thickness in.	Weight Per Unit Lengths lb/ft
16	0.134	22.73
	0.141	23.9
	0.15	25.42
	0.164	27.76
	0.172	29.1
	0.179	30.27
	0.188	31.78
	0.203	34.28
	0.219	36.95
	0.23	38.77
	0.25	42.09
	0.281	47.22
	0.312	52.32
	0.344	57.57
	0.375	62.64
	0.438	72.86
	0.469	77.87
	0.5	82.85
18	0.141	26.92
	0.172	32.78
	0.188	35.8
	0.219	41.63
	0.23	43.69
	0.25	47.44
	0.281	53.23
	0.312	58.99
	0.344	64.93
	0.375	70.65
	0.438	82.23
	0.469	87.89
	0.5	93.54
20	0.141	29.93
	0.172	36.46
	0.188	39.82
	0.219	46.31
	0.25	52.78
	0.281	59.23
	0.312	65.66
	0.344	72.28
	0.375	78.67
	0.438	91.59
	0.469	97.92
	0.5	104.23
22	0.172	40.13
	0.188	43.84
	0.219	50.99
	0.25	58.13
	0.281	65.24
	0.312	72.34
	0.375	86.69
	0.438	100.96
	0.469	107.95
	0.5	114.92
24	0.172	43.81
	0.188	47.86
	0.219	55.67
	0.25	63.47
	0.281	71.25
	0.312	79.01
	0.375	94.71
	0.438	110.32
	0.469	117.98
	0.5	125.62

ASTM A500 Round Pipes

Nominal Size	Outside Diameter		Wall Thickness		Weight		
	inch	mm	inch	mm	lb/ft	kg/ft	kg/m
1/2	0.840	21.3	0.109	2.77	0.85	0.39	1.27
3/4	1.050	26.7	0.113	2.87	1.13	0.51	1.69
1	1.315	33.4	0.104	2.64	1.34	0.61	2.00
1 1/4	1.660	42.2	0.110	2.79	1.81	0.82	2.71
	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 1/2	1.900	48.3	0.114	2.90	2.17	0.98	3.25
	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	2.375	60.3	0.121	3.07	2.92	1.32	4.33
	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 1/2	2.875	73	0.156	3.96	4.53	2.05	6.74
	2.875	73	0.188	4.78	5.40	2.45	8.04
	2.875	73	0.203	5.16	5.79	2.63	8.63
	2.875	73	0.276	7.01	7.66	3.47	11.41
3	3.500	88.9	0.156	3.96	5.58	2.53	8.30
	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	9.54
	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	16.08
	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	8.625	219.1	0.322	8.18	28.55	12.95	42.55
	8.625	219.1	0.500	12.7	43.39	19.68	64.64
10	10.750	273.0	0.365	9.27	40.48	18.36	60.29
	10.750	273.0	0.500	12.7	54.74	24.83	81.53
12	12.750	323.8	0.375	9.52	49.56	22.48	73.79
	12.750	323.8	0.500	12.7	65.42	29.67	97.44
14	14.000	355.6	0.375	9.52	54.57	24.75	81.25
	14.000	355.6	0.500	12.7	72.09	32.70	107.40
16	16.000	406.4	0.375	9.52	62.58	28.39	93.18
	16.000	406.4	0.500	12.7	82.77	37.54	123.31
18	18.000	457	0.375	9.52			105.06
	18.000	457	0.500	12.7			139.16
20	20.000	508	0.375	9.52			117.03
	20.000	508	0.500	12.7			155.13
24	24.000	609.6	0.375	9.52			140.89
	24.000	609.6	0.500	12.7			186.95

ASTM A500 GR.A/B/C Cold Formed Hollow Section

Square Pipes		Rectangular Pipes	
Size(mm)	Thickness(mm)	Size(mm)	Thickness(mm)
10 x 10	0.6 - 1.0	20 x 10	0.6 - 1.0
12 x 12	0.6 - 1.0	25 x 12	0.6 - 1.0
16 x 16	0.6 - 1.2	38 x 19	0.6 - 1.5
19 x 19	0.6 - 1.5	50 x 25	0.6 - 1.5
20 x 20	0.6 - 1.5	50 x 30	1.0 - 3.0
25 x 25	1.0 - 2.75	60 x 40	1.5 - 3.5
30 x 30	1.0 - 2.75	75 x 50	1.5 - 4.0
32 x 32	1.0 - 3.0	80 x 40	1.5 - 4.0
38 x 38	1.0 - 3.0	100 x 50	2.0 - 6.0
40 x 40	1.0 - 3.5	100 x 60	2.0 - 6.0
50 x 50	1.0 - 5.0	100 x 75	2.0 - 6.0
60 x 60	1.0 - 6.0	120 x 60	3.0 - 6.0
63.5 x 63.5	1.0 - 6.0	120 x 80	3.0 - 6.0
70 x 70	1.5 - 6.0	125 x 50	3.0 - 6.0
75 x 75	1.5 - 6.0	125 x 75	3.0 - 6.0
80 x 80	2.0 - 6.0	150 x 50	3.0 - 6.0
90 x 90	2.0 - 6.0	150 x 75	3.0 - 6.0
100 x 100	2.3 - 6.0	150 x 100	4.0 - 12
120 x 120	4.0 - 6.0	160 x 80	4.0 - 6.0
125 x 125	4.0 - 6.0	175 x 100	4.0 - 12
150 x 150	4.0 - 8.0	200 x 100	4.0 - 12
200 x 200	6.0 - 12	200 x 150	4.0 - 12
250 x 250	6.0 - 12	250 x 150	5.0 - 12
300 x 300	6.0 - 12	300 x 200	5.0 - 12
350x350	6.0 - 12	350x250	5.0 - 12
400 x 400	6.0 - 12	400 x 200	5.0 - 12
500x500	6.0 - 16	500x300	5.0-16

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

Dimensions, Weights, and Test Pressure For Light-Weight Fire Protection Pipe—Schedule 10 A									
NPS Designator	DN Designator	Outside Diameter		Wall Thickness		Weight Plain End		Test Pressure Seamless and Electric-Resistance-Welded	
		in	mm	in	mm	lb/ft	kg/m	psi	MPa
3/4	20	1.05	26.7	0.083	2.11	0.86	1.28	700	4.8
1	25	1.315	33.4	0.109	2.77	1.41	2.09	700	4.8
1 1/4	32	1.66	42.2	0.109	2.77	1.81	2.69	1000	6.9
1 1/2	40	1.9	48.3	0.109	2.77	2.09	3.11	1000	6.9
2	50	2.375	60.3	0.109	2.77	2.64	3.93	1000	6.9
2 1/2	65	2.875	73	0.12	3.05	3.53	5.26	1000	6.9
3	80	3.5	88.9	0.12	3.05	4.34	6.46	1000	6.9
3 1/2	90	4	101.6	0.12	3.05	4.98	7.41	1200	8.3
4	100	4.5	114.3	0.12	3.05	5.62	8.37	1200	8.3
5	125	5.563	141.3	0.134	3.4	7.78	11.58	1200	8.3
6	150	6.625	168.3	0.134	3.4	9.3	13.85	1000	6.9
8	200	8.625	219.1	0.188	4.78	16.96	25.26	800	5.5
10	250	10.75	273.1	0.188	4.78	21.23	31.62	700	4.8

Dimensions, Weights, Test Pressures For Standard-Weight Fire Protection Pipe—Schedule 30 and Schedule 40									
NPS Designator	DN Designator	Outside Diameter		Wall Thickness		Weight Plain End		Test Pressure Seamless and Electric-Resistance-Welded	
		in	mm	in	mm	lb/ft	kg/m	psi	MPa
1/2	15	0.84	21.3	0.109	2.77	0.85	1.27	700	4.8
3/4	20	1.05	26.7	0.113	2.87	1.13	1.68	700	4.8
1	25	1.315	33.4	0.133	3.38	1.68	2.5	700	4.8
1 1/4	32	1.66	42.2	0.14	3.58	2.27	3.4	1000	6.9
1 1/2	40	1.9	48.3	0.145	3.68	2.72	4.07	1000	6.9
2	50	2.375	60.3	0.154	3.91	3.66	5.5	1000	6.9
2 1/2	65	2.875	73	0.203	5.16	5.8	8.68	1000	6.9
3	80	3.5	88.9	0.216	5.49	7.58	11.35	1000	6.9
3 1/3	90	4	101.6	0.226	5.74	9.12	13.71	1200	8.3
4	100	4.5	114.3	0.237	6.02	10.8	16.25	1200	8.3
5	125	5.563	141.3	0.258	6.55	14.63	22.07	1200	8.3
6	150	6.625	168.3	0.28	7.11	18.99	28.6	1200	8.3
8	200	8.625	219.1	0.277	7.04	24.72	38.09	1200	8.3
10	250	10.75	273.1	0.307	7.8	34.27	53.29	1000	6.9

Note 1.1psi=0.07031kg/cm2 2.1lb/ft=0.45359kg/ft

All Staff of Tianjin Youfa International Trade Co., Ltd

Tianjin Youfa Steel Pipe Group Culture

YOUFA'S MISSION: 友发的使命
TO LET ITS EMPLOYEES GROW HAPPILY; 让员工幸福成长
TO PROMOTE THE HEALTHY DEVELOPMENT OF THE INDUSTRY. 促行业健康发展

YOUFA'S VISION: 友发的愿景
TO BECOME A GLOBAL EXPERT OF PIPELINE SYSTEM. 做全球管道系统专家

YOUFA'S CORE VALUE: 友发核心价值观
TO BE WIN-WIN WITH INTEGRITY POLICY; 共赢互利信为本
TO ADVANCE TOGETHER WITH VIRTUE FIRST. 同心并进德为先

YOUFA'S SPIRIT: 友发的精神
TO DISCIPLINE OURSELVES,BENEFIT OTHERS; 律己利他
COOPERATE AND FORGE AHEAD. 合作进取