SHINDA

SHINDA jointly with you to promote intelligent oil and gas exploitation.

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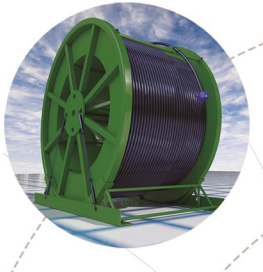
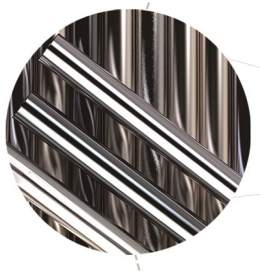
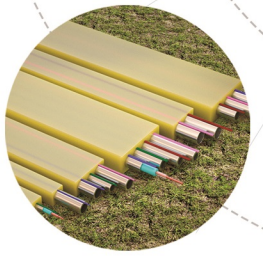
SHINDA







Coiled Tubing | Capillary Tube | Encapsulated Cable

Shinda (Tangshan) Creative Oil & Gas Equipment Co., Ltd.

SHINDA

SHINDA jointly with you to promote intelligent oil and gas exploitation.

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About Us

Company Profile

Established in 1993 with a registered capital of CNY 349 million, HEBEI HUATONG WIRES AND CABLES GROUP CO., LTD. has more than 1,500 employees, including 150 professionals. It is a large-scale modernized comprehensive enterprise integrating R&D, manufacturing, marketing and services of mining cables, submersible oil pump cables, locomotive vehicle cables, nuclear power plant cables, power cables, special cables, control lines, coiled tubing, etc.

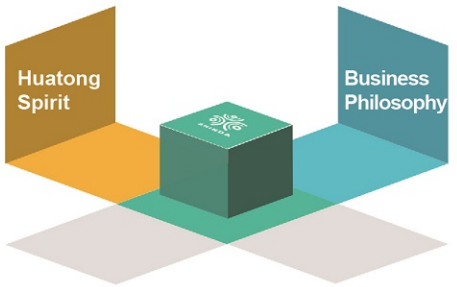
As its wholly-owned subsidiary with a registered capital of CNY 50 million, SHINDA (Tangshan) CREATIVE OIL & GAS EQUIPMENT CO., LTD. (SHINDA) specializes in the R&D and manufacturing of low-carbon alloy coiled tubing, CRA (Corrosion Resistant Alloy) coiled tubing, titanium alloy coiled tubing, hydraulic control line, chemical injection line, encapsulated cable, umbilical cables, heating pipe line, etc.

SHINDA keeps strict controls over every step including raw materials procurement, production process and inspection to ensure product quality. The company has established good partnerships with well-known enterprises both at home and abroad, and gradually formed strong advantages in talents, technologies and brand. Company' s key equipment is all imported. More than 80% of the employees have a college degree or above. We obtained the certifications of ISO9001, ISO14001, ISO45001, APIQ1, API5ST, HSE, classification society and also we are a member of AWES.

SHINDA always adheres to the enterprise spirit of "Quality is as Important as Life, and Responsibility is Heavier than Mount Tai", and provides timely services for global oil industry with high-quality products.

Company Culture

Quality is as Important as Life
Responsibility is Heavier than Mount Tai



Gratitude, Integrity, Humility, Respect and Win-Win

SHINDA jointly with you to promote intelligent oil and gas exploitation.

Quality Control

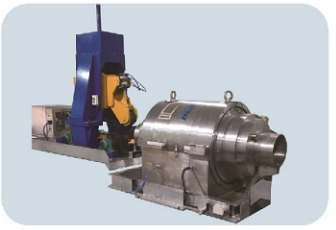
- SHINDA has established a strict quality control system in accordance with the requirements of API 5ST and Q1, and makes sure that all products are produced in strict accordance with the quality control system and meet the quality requirements.
- With the advanced manufacturing equipment, mature technology, professional team, and strict quality control system, SHINDA products will meet your needs.

Main Testing Equipment

X-ray

Spectroscope

Eddy Current Flaw Detector



Ultrasonic Flaw Detector

Tensile Tester

Fatigue Tester

Hardness Tester

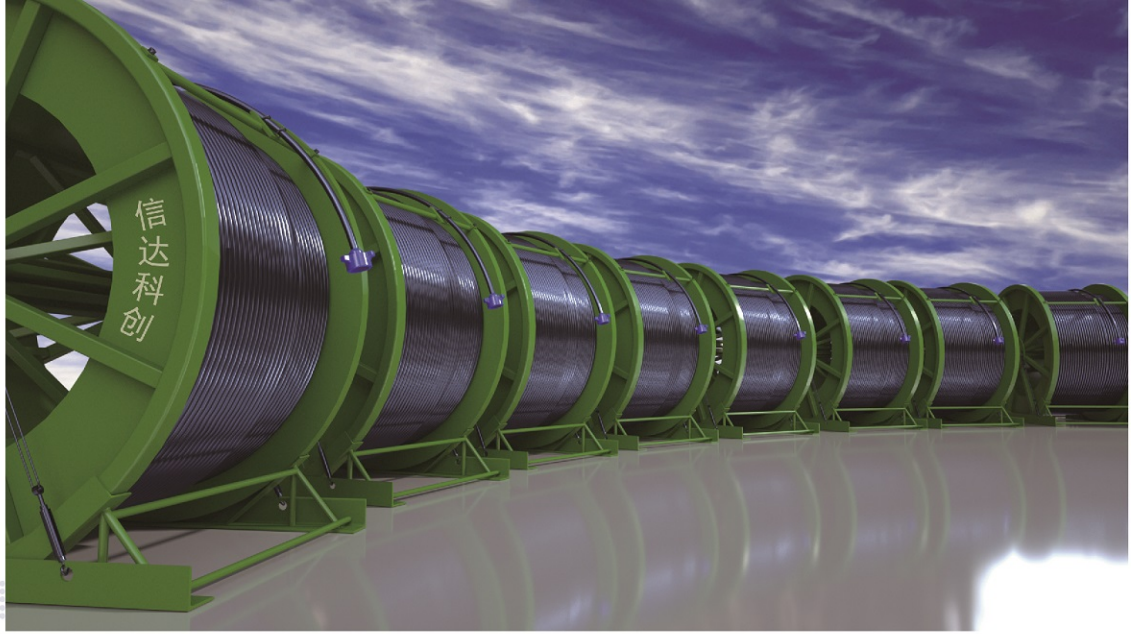
QHSE

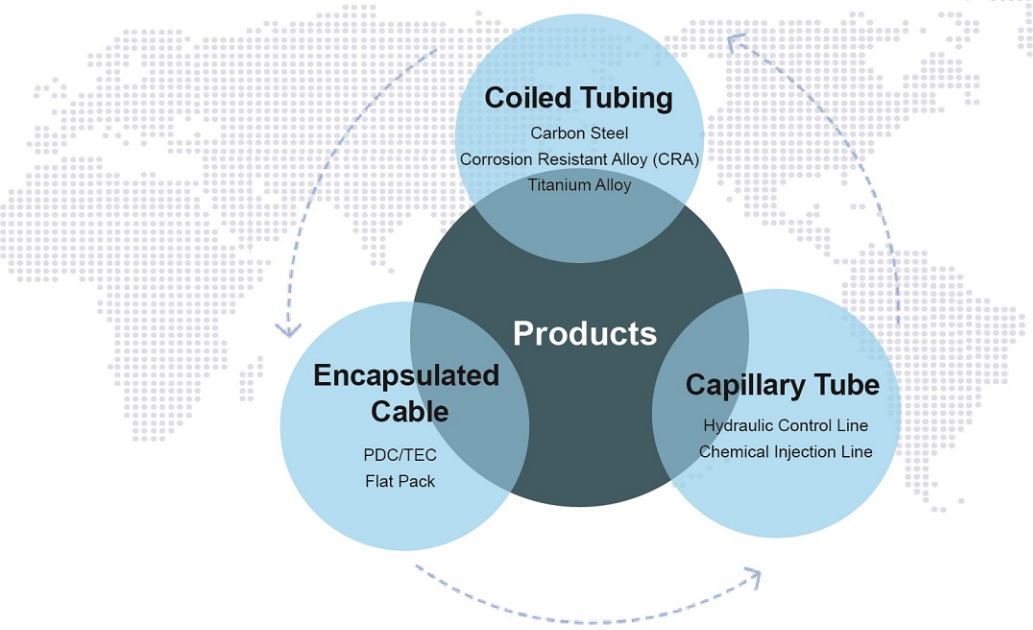
Certifications

SHINDA implements international mainstream standards strictly and has established a quality management system conforming to international standards. It has passed certifications including the API Spec 5ST, API Spec Q1, ISO9001, ISO14001 and ISO45001. The coiled tubing meets the requirements of API Spec 5ST after being inspected by CNPC Tubular Goods Research Institute (TGRI).

02

Products





Coiled Tubing (Carbon Steel, CRA, Titanium Alloy)

Coiled tubing is a jointless tubing formed by welding several sections of flexible tubing with a length of more than 100 meters through butt welding or inclined welding. The length of coiled tubing is generally up to several hundred meters to several kilometers. It can be wound on a reel and used for specific downhole operations such as workover, drilling, perforation, stimulation, well completion, and logging. For applications in acidic environments, our company has developed high-chromium corrosion-resistant alloy coiled tubing and titanium alloy coiled tubing.

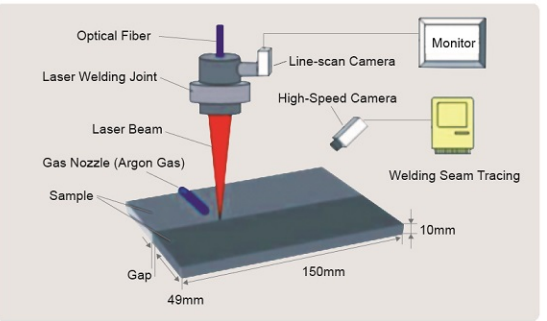
Advantages of Laser Welding

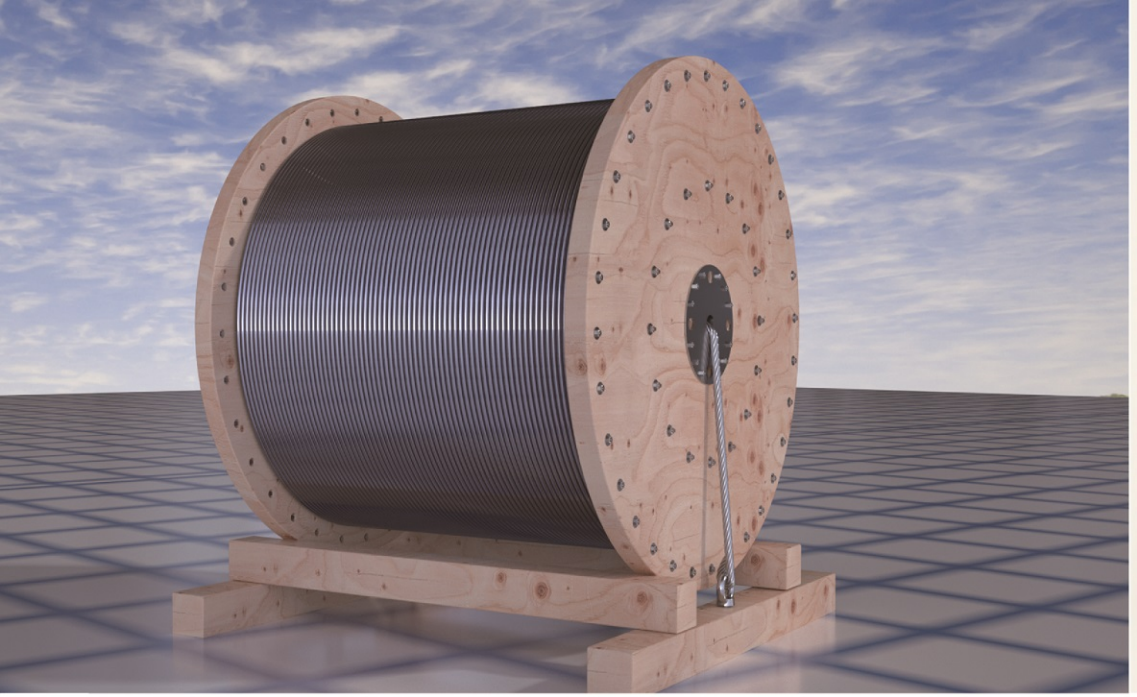
01

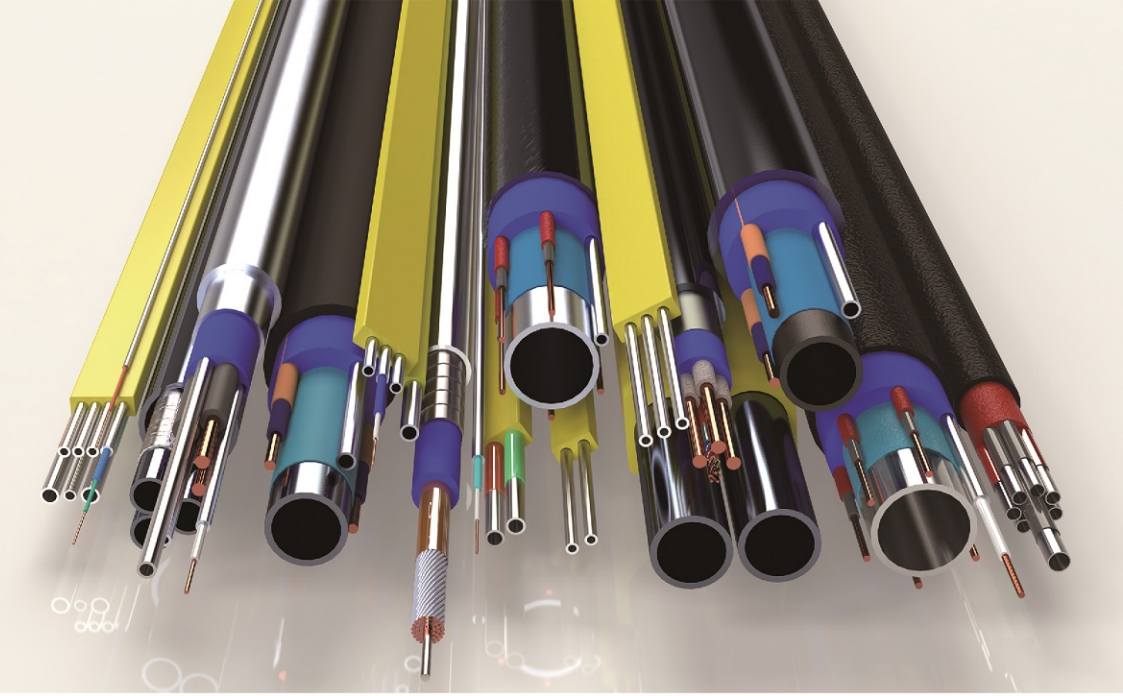
Laser welding has small internal welding collar, smooth transition of the reinforcement, and large pipe diameter. The welding seam welding is stable, and the welding collar is excellent in shape and consistency.

02

Laser welding is self-fusion welding, and the whole welding process is under the protection of inert gas, the input heat is small, the welding is firm, and it is not easy to cause defects such as desoldering, cold stacking, strip edge damage, inclusions and so on.







Capillary Tube (Hydraulic Control Line, Chemical Injection Line)

Our company provides austenitic stainless steel, duplex stainless steel, nickel-based alloy, Monel alloy welded pipe and seamless pipe. Other alloys and sizes can be manufactured according to different requirements.

Product Features

- Austenitic stainless steel has strong anti-rust and corrosion resistance, as well as excellent forming and welding characteristics.
- Duplex stainless steel has better resistance to uniform corrosion, stress corrosion, pitting corrosion, and crevice corrosion than austenitic stainless steel, and its corrosion fatigue and wear resistance properties are also very good.
- Nickel-based alloys and Monel alloys have high corrosion resistance and high-temperature strength, and can be used in high-temperature, high-pressure and high-corrosion environments.

Encapsulated Cable (PDC/TEC, Flat Pack)

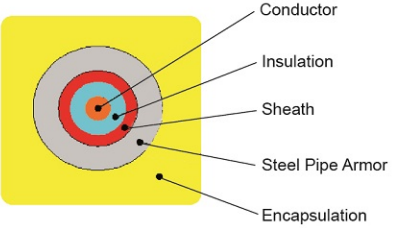
Encapsulated cable is special equipment used to deal with the harsh environment in the development and production process of oil and gas reservoirs. It is a product that uses metal materials such as stainless steel and nickel-based alloy steel to protect cables and other components from downhole pressure and corrosion environmental factors and uses polymer encapsulated materials to provide additional mechanical protection. It mainly includes PDC/TEC (Permanent Downhole Cable/Tubing Encapsulated Cable) and Flat Pack.

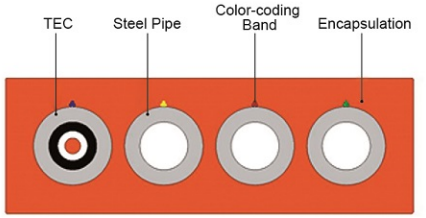
TEC Steel Pipe Armor Features

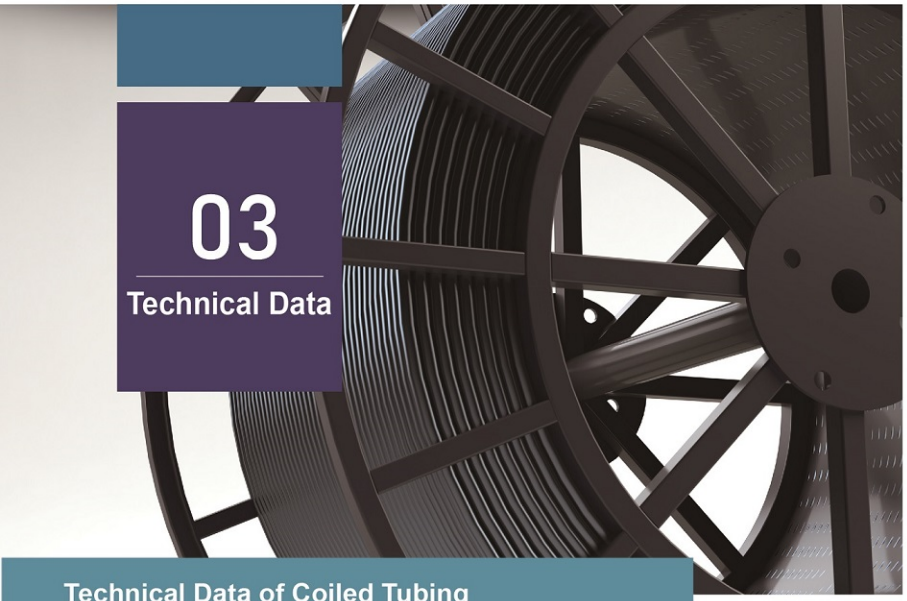
- 316L has strong anti-rust and corrosion resistance, and also has excellent forming and welding characteristics.
- 825 has high corrosion resistance and high temperature strength, and can be used in high temperature, high pressure and high corrosion environments.

Features of Flat Pack:

- Flat Pack has the features of both capillary tube and TEC. It can be designed and manufactured according to different requirements. For its technical data please see the selection tables of capillary tube and TEC.







03
Technical Data

Technical Data of Coiled Tubing

Materials		ST70 (CT70)	ST80 (CT80)	ST90 (CT90)	ST100 (CT100)	ST110 (CT110)	ST130 (CT130)	ST316L-40	ST13Cr-80	ST2205-80	ST2507-90
Chemical Composition	Cmax	0.16	0.16	0.16	0.16	0.16	0.16	0.030	0.15	0.030	0.030
	Mnmax	1.20	1.20	1.20	1.65	1.65	1.90	2.00		2.00	1.20
	Pmax	0.025	0.020	0.020	0.025	0.025	0.025	0.045	0.120	0.030	0.035
	Smax	0.005	0.005	0.005	0.005	0.005	0.005	0.030	0.030	0.020	0.020
	Simax	0.50	0.50	0.50	0.50	0.50	0.50	0.75		1.00	0.80
	Cr							16.0-18.0	≥11.5	22.0-23.0	24.0-26.0
	Ni							10.0-14.0		4.5-6.5	6.0-8.0
	Mo							2.00-3.00		3.0-3.5	3.0-5.0
Yield Strength (min), psig		70,000	80,000	90,000	100,000	110,000	130,000	40,000	80,000	80,000	90,000
Yield Strength (max), psig		80,000	90,000	100,000							
Tensile Strength (min), psig		80,000	88,000	97,000	108,000	115,000	135,000	70,000	88,000	95,000	116,000
Hardness, HRC		22	22	22	28	30	36	200HV	30	30	32
Flaring experiment		When the minimum inner diameter is reached after flaring, there will be no cracking in the weld area or the base metal.									
Flattening test		Before the distance between the plates is less than the specified value, no cracks or fractures exceeding 0.125 in (3.2mm) should occur on the outer surface of the weld or the base metal in any direction. Cracks that originate from the edge of the specimen and are less than 0.25 in (6.4mm) in length shall not be the reason for rejection.									

ST70 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Nominal Inside Diameter		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Min.Internal Yield Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	11,800	13,500	12,200	13,600	12,600
	0.083	0.078	0.59	0.584	12,200	13,900	12,900	14,300	13,200
	0.087	0.082	0.62	0.576	12,700	14,500	13,500	15,000	13,700
	0.095	0.090	0.67	0.560	13,700	15,600	14,700	16,300	14,900
	0.102	0.097	0.71	0.546	14,500	16,600	15,800	17,600	16,000
	0.109	0.104	0.75	0.532	15,400	17,600	16,400	18,200	16,500
	0.118	0.110	0.80	0.514	16,400	18,700	17,500	19,500	17,600
1.000	0.075	0.070	0.74	0.850	15,300	17,400	8,800	9,800	9,100
	0.080	0.075	0.79	0.840	16,200	18,500	9,300	10,300	9,700
	0.083	0.078	0.81	0.834	16,700	19,100	9,800	10,900	10,200
	0.087	0.082	0.85	0.826	17,500	20,000	10,300	11,400	10,600
	0.095	0.090	0.92	0.810	18,900	21,600	11,200	12,400	11,500
	0.102	0.097	0.98	0.796	20,100	23,000	12,200	13,500	12,400
	0.109	0.104	1.04	0.782	21,400	24,400	12,600	14,000	12,900
	0.118	0.110	1.11	0.764	22,900	26,200	13,500	15,000	13,700
	0.125	0.117	1.17	0.750	24,100	27,500	14,400	16,000	14,600
	0.134	0.126	1.24	0.732	25,500	29,200	15,300	17,000	15,400
1.250	0.075	0.070	0.94	1.100	19,400	22,100	7,100	7,900	6,100
	0.080	0.075	1.00	1.090	20,600	23,500	7,500	8,300	6,700
	0.087	0.082	1.08	1.076	22,300	25,400	8,300	9,200	8,100
	0.095	0.090	1.17	1.060	24,100	27,600	9,000	10,000	9,400
	0.102	0.097	1.25	1.046	25,800	29,400	9,700	10,800	10,200
	0.109	0.104	1.33	1.032	27,400	31,300	10,200	11,300	10,500
	0.118	0.110	1.43	1.014	29,400	33,600	10,900	12,100	11,300
	0.125	0.117	1.50	1.000	30,900	35,300	11,600	12,900	12,000
	0.134	0.126	1.60	0.982	32,900	37,600	12,300	13,700	12,700
	0.145	0.137	1.71	0.960	35,200	40,300	13,500	15,000	13,700
	0.156	0.148	1.82	0.938	37,500	42,900	14,600	16,200	14,700
	0.175	0.167	2.01	0.900	41,400	47,300	15,900	17,700	16,100
1.500	0.087	0.082	1.31	1.326	27,000	30,900	6,900	7,700	5,700
	0.095	0.090	1.43	1.310	29,400	33,500	7,600	8,400	6,900
	0.102	0.097	1.52	1.296	31,400	35,800	8,200	9,100	8,000
	0.109	0.104	1.62	1.282	33,300	38,100	8,600	9,500	8,500
	0.118	0.110	1.74	1.264	35,900	41,000	9,200	10,200	9,500
	0.125	0.117	1.84	1.250	37,800	43,200	9,800	10,900	10,200
	0.134	0.126	1.96	1.232	40,300	46,000	10,400	11,600	10,800
	0.145	0.137	2.10	1.210	43,200	49,400	11,300	12,600	11,700
	0.156	0.148	2.24	1.188	46,100	52,700	12,200	13,600	12,600
	0.175	0.167	2.48	1.150	51,000	58,300	13,500	15,000	13,700
	0.188	0.180	2.64	1.124	54,200	62,000	14,400	16,000	14,600
	0.204	0.196	2.83	1.092	58,100	66,400	15,600	17,300	15,700
1.750	0.095	0.090	1.68	1.560	34,600	39,500	6,500	7,200	5,000
	0.102	0.097	1.80	1.546	37,000	42,200	7,000	7,800	6,000
	0.109	0.104	1.91	1.532	39,300	45,000	7,300	8,100	6,500
	0.118	0.110	2.06	1.514	42,300	48,400	7,800	8,700	7,400
	0.125	0.117	2.17	1.500	44,700	51,100	8,400	9,300	8,400
	0.134	0.126	2.31	1.482	47,600	54,400	8,900	9,900	9,300
	0.145	0.137	2.49	1.460	51,200	58,500	9,700	10,800	10,200
	0.156	0.148	2.66	1.438	54,700	62,500	10,500	11,700	10,900
	0.175	0.167	2.95	1.400	60,600	69,300	11,600	12,900	12,000
	0.188	0.180	3.14	1.374	64,600	73,800	12,400	13,800	12,700
	0.204	0.196	3.37	1.342	69,400	79,300	13,500	15,000	13,700
	0.224	0.216	3.65	1.302	75,200	85,900	14,800	16,400	14,900
	0.250	0.242	4.01	1.250	82,500	94,200	16,500	18,300	16,600
2.000	0.109	0.104	2.20	1.782	45,300	51,800	6,400	7,100	4,900
	0.118	0.110	2.37	1.764	48,800	55,800	6,900	7,700	5,700
	0.125	0.117	2.51	1.750	51,500	58,900	7,400	8,200	6,600
	0.134	0.126	2.67	1.732	55,000	62,800	7,800	8,700	7,400
	0.145	0.137	2.88	1.710	59,200	67,600	8,600	9,500	8,700
	0.156	0.148	3.08	1.688	63,300	72,300	9,300	10,300	9,700
	0.175	0.167	3.41	1.650	70,200	80,300	10,300	11,400	10,600
	0.188	0.176	3.64	1.624	74,900	85,600	11,000	12,200	11,300
	0.204	0.192	3.92	1.592	80,600	92,100	11,900	13,200	12,200
	0.224	0.212	4.25	1.552	87,500	100,000	13,100	14,500	13,300
	0.250	0.238	4.68	1.500	96,200	110,000	14,600	16,200	14,800
	0.276	0.261	5.09	1.448	104,600	119,600	15,700	17,400	15,800
	0.281	0.266	5.16	1.438	106,200	121,400	15,900	17,700	16,000

ST70 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	54,300	62,100	5,400	6,000	3,200
	0.118	0.110	2.85	2.139	58,600	66,900	5,900	6,500	3,900
	0.125	0.117	3.01	2.125	61,900	70,700	6,200	6,900	4,600
	0.134	0.126	3.21	2.107	66,000	75,500	6,700	7,400	5,300
	0.145	0.137	3.46	2.085	71,100	81,300	7,300	8,100	6,400
	0.156	0.148	3.70	2.063	76,100	87,000	7,800	8,700	7,400
	0.175	0.167	4.12	2.025	84,700	96,800	8,600	9,600	8,800
	0.188	0.176	4.40	1.999	90,400	103,300	9,300	10,300	9,700
	0.204	0.192	4.73	1.967	97,400	111,300	10,100	11,200	10,500
	0.224	0.212	5.15	1.927	106,000	121,100	11,100	12,300	11,400
	0.250	0.238	5.68	1.875	116,800	133,500	12,400	13,800	12,700
	0.276	0.261	6.19	1.823	127,400	145,600	13,400	14,900	13,700
	0.281	0.266	6.29	1.813	129,400	147,900	13,600	15,100	13,800
	0.300	0.285	6.65	1.775	136,900	156,500	14,500	16,100	14,700
2.625	0.118	0.110	3.15	2.389	65,100	74,300	5,300	5,900	3,000
	0.125	0.117	3.33	2.375	68,700	78,500	5,700	6,300	3,600
	0.134	0.126	3.55	2.357	73,400	83,900	6,000	6,700	4,200
	0.145	0.137	3.84	2.335	79,100	90,400	6,600	7,300	5,200
	0.156	0.148	4.12	2.313	84,700	96,800	7,100	7,900	6,100
	0.175	0.167	4.58	2.275	94,300	107,800	7,800	8,700	7,400
	0.188	0.176	4.90	2.249	100,800	115,100	8,500	9,400	8,400
	0.204	0.192	5.28	2.217	108,600	124,100	9,200	10,200	9,500
	0.224	0.212	5.75	2.177	118,300	135,200	10,100	11,200	10,400
	0.250	0.238	6.35	2.125	130,600	149,200	11,300	12,500	11,600
	0.276	0.261	6.93	2.073	142,600	162,900	12,200	13,500	12,500
	0.281	0.266	7.04	2.063	144,800	165,500	12,300	13,700	12,700
	0.300	0.285	7.46	2.025	153,400	175,300	13,200	14,700	13,500
2.875	0.134	0.126	3.93	2.607	80,800	92,300	5,500	6,100	3,300
	0.145	0.137	4.23	2.585	87,100	99,500	6,000	6,700	4,200
	0.156	0.148	4.53	2.563	93,300	106,600	6,500	7,200	5,100
	0.175	0.167	5.05	2.525	103,900	118,800	7,200	8,000	6,300
	0.188	0.176	5.40	2.499	111,100	127,000	7,700	8,600	7,100
	0.204	0.192	5.82	2.467	119,800	136,900	8,400	9,300	8,300
	0.224	0.212	6.35	2.427	130,600	149,200	9,200	10,200	9,600
	0.250	0.238	7.02	2.375	144,300	164,900	10,400	11,500	10,700
	0.276	0.261	7.67	2.323	157,700	180,300	11,200	12,400	11,500
	0.281	0.266	7.79	2.313	160,300	183,200	11,300	12,600	11,700
	0.300	0.285	8.26	2.275	169,900	194,200	12,200	13,500	12,500
3.250	0.145	0.137	4.81	2.960	99,000	113,200	5,300	5,900	3,100
	0.156	0.148	5.16	2.938	106,100	121,300	5,800	6,400	3,800
	0.175	0.167	5.75	2.900	118,300	135,200	6,400	7,100	4,800
	0.188	0.176	6.15	2.874	126,600	144,700	6,800	7,600	5,600
	0.204	0.192	6.64	2.842	136,600	156,200	7,400	8,200	6,600
	0.224	0.212	7.25	2.802	149,100	170,400	8,200	9,100	7,900
	0.250	0.238	8.02	2.750	164,900	188,500	9,200	10,200	9,600
	0.276	0.261	8.77	2.698	180,500	206,300	9,900	11,000	10,300
	0.281	0.266	8.92	2.688	183,500	209,700	10,100	11,200	10,400
	0.300	0.285	9.46	2.650	194,600	222,400	10,800	12,000	11,200
3.500	0.156	0.148	5.58	3.188	114,700	131,100	5,400	6,000	3,100
	0.175	0.167	6.22	3.150	128,000	146,200	5,900	6,600	4,100
	0.188	0.176	6.66	3.124	136,900	156,500	6,400	7,100	4,800
	0.204	0.192	7.19	3.092	147,900	169,000	6,900	7,700	5,700
	0.224	0.212	7.84	3.052	161,400	184,400	7,600	8,400	6,900
	0.250	0.238	8.69	3.000	178,700	204,200	8,600	9,500	8,600
	0.276	0.261	9.51	2.948	195,700	223,600	9,300	10,300	9,600
	0.281	0.266	9.67	2.938	198,900	227,300	9,400	10,400	9,800
	0.300	0.285	10.26	2.900	211,100	241,300	10,100	11,200	10,400

ST80 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	13,500	15,200	14,000	15,600	14,400
	0.083	0.078	0.59	0.584	13,900	15,700	14,700	16,300	15,000
	0.087	0.082	0.62	0.576	14,500	16,300	15,400	17,100	15,700
	0.095	0.090	0.67	0.560	15,600	17,600	16,700	18,600	17,000
	0.102	0.097	0.71	0.546	16,600	18,700	17,500	20,100	18,300
	0.109	0.104	0.75	0.532	17,600	19,800	17,500	20,800	18,900
	0.118	0.110	0.80	0.514	18,700	21,100	17,500	22,300	20,100
1.000	0.075	0.070	0.74	0.850	17,400	19,600	10,100	11,200	10,100
	0.080	0.075	0.79	0.840	18,500	20,800	10,600	11,800	11,100
	0.083	0.078	0.81	0.834	19,100	21,500	11,200	12,400	11,600
	0.087	0.082	0.85	0.826	20,000	22,500	11,700	13,000	12,100
	0.095	0.090	0.92	0.810	21,600	24,300	12,800	14,200	13,200
	0.102	0.097	0.98	0.796	23,000	25,900	13,900	15,400	14,200
	0.109	0.104	1.04	0.782	24,400	27,500	14,400	16,000	14,700
	0.118	0.110	1.11	0.764	26,200	29,400	15,400	17,100	15,700
	0.125	0.117	1.17	0.750	27,500	30,900	16,500	18,300	16,700
	0.134	0.126	1.24	0.732	29,200	32,800	17,500	19,400	17,600
1.250	0.075	0.070	0.94	1.100	22,100	24,900	8,100	9,000	6,600
	0.080	0.075	1.00	1.090	23,500	26,500	8,600	9,500	7,400
	0.087	0.082	1.08	1.076	25,400	28,600	9,500	10,500	8,900
	0.095	0.090	1.17	1.060	27,600	31,000	10,300	11,400	10,700
	0.102	0.097	1.25	1.046	29,400	33,100	11,200	12,400	11,600
	0.109	0.104	1.33	1.032	31,300	35,200	11,600	12,900	12,000
	0.118	0.110	1.43	1.014	33,600	37,800	12,400	13,800	12,800
	0.125	0.117	1.50	1.000	35,300	39,800	13,300	14,800	13,700
	0.134	0.126	1.60	0.982	37,600	42,300	14,100	15,700	14,500
	0.145	0.137	1.71	0.960	40,300	45,300	15,400	17,100	15,700
	0.156	0.148	1.82	0.938	42,900	48,300	16,700	18,500	16,800
	0.175	0.167	2.01	0.900	47,300	53,200	17,500	20,200	18,400
1.500	0.087	0.082	1.31	1.326	30,900	34,800	7,900	8,800	6,200
	0.095	0.090	1.43	1.310	33,500	37,700	8,600	9,600	7,500
	0.102	0.097	1.52	1.296	35,800	40,300	9,400	10,400	8,800
	0.109	0.104	1.62	1.282	38,100	42,900	9,700	10,800	9,500
	0.118	0.110	1.74	1.264	41,000	46,100	10,400	11,600	10,900
	0.125	0.117	1.84	1.250	43,200	48,600	11,200	12,400	11,600
	0.134	0.126	1.96	1.232	46,000	51,800	11,900	13,200	12,300
	0.145	0.137	2.10	1.210	49,400	55,600	13,000	14,400	13,400
	0.156	0.148	2.24	1.188	52,700	59,300	14,000	15,600	14,400
	0.175	0.167	2.48	1.150	58,300	65,600	15,400	17,100	15,700
	0.188	0.180	2.64	1.124	62,000	69,700	16,500	18,300	16,700
	0.204	0.196	2.83	1.092	66,400	74,800	17,500	19,700	17,900
1.750	0.095	0.090	1.68	1.560	39,500	44,500	7,400	8,200	5,400
	0.102	0.097	1.80	1.546	42,200	47,500	8,000	8,900	6,500
	0.109	0.104	1.91	1.532	45,000	50,600	8,400	9,300	7,100
	0.118	0.110	2.06	1.514	48,400	54,400	9,000	10,000	8,200
	0.125	0.117	2.17	1.500	51,100	57,400	9,600	10,700	9,300
	0.134	0.126	2.31	1.482	54,400	61,200	10,300	11,400	10,700
	0.145	0.137	2.49	1.460	58,500	65,800	11,200	12,400	11,600
	0.156	0.148	2.66	1.438	62,500	70,300	12,100	13,400	12,500
	0.175	0.167	2.95	1.400	69,300	77,900	13,300	14,800	13,700
	0.188	0.180	3.14	1.374	73,800	83,000	14,200	15,800	14,600
	0.204	0.196	3.37	1.342	79,300	89,200	15,400	17,100	15,700
	0.224	0.216	3.65	1.302	85,900	96,600	16,800	18,700	17,100
	0.250	0.242	4.01	1.250	94,200	106,000	17,500	20,900	18,900
2.000	0.109	0.104	2.20	1.782	51,800	58,300	7,300	8,100	5,300
	0.118	0.110	2.37	1.764	55,800	62,800	7,900	8,800	6,200
	0.125	0.117	2.51	1.750	58,900	66,300	8,500	9,400	7,200
	0.134	0.126	2.67	1.732	62,800	70,700	9,000	10,000	8,200
	0.145	0.137	2.88	1.710	67,600	76,100	9,800	10,900	9,600
	0.156	0.148	3.08	1.688	72,300	81,300	10,600	11,800	11,100
	0.175	0.167	3.41	1.650	80,300	90,300	11,700	13,000	12,100
	0.188	0.176	3.64	1.624	85,600	96,300	12,500	13,900	12,900
	0.204	0.192	3.92	1.592	92,100	103,600	13,600	15,100	13,900
	0.224	0.212	4.25	1.552	100,000	112,500	14,900	16,500	15,200
	0.250	0.238	4.68	1.500	110,000	123,700	16,700	18,500	16,900
	0.276	0.261	5.09	1.448	119,600	134,500	17,500	19,900	18,100
	0.281	0.266	5.16	1.438	121,400	136,600	17,500	20,200	18,300

ST80 2.375 in to 3.50 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	62,100	69,800	6,200	6,900	3,400
	0.118	0.110	2.85	2.139	66,900	75,300	6,700	7,400	4,100
	0.125	0.117	3.01	2.125	70,700	79,500	7,100	7,900	4,900
	0.134	0.126	3.21	2.107	75,500	84,900	7,600	8,400	5,800
	0.145	0.137	3.46	2.085	81,300	91,400	8,300	9,200	7,000
	0.156	0.148	3.70	2.063	87,000	97,900	9,000	10,000	8,200
	0.175	0.167	4.12	2.025	96,800	108,900	9,900	11,000	9,800
	0.188	0.176	4.40	1.999	103,300	116,300	10,600	11,800	11,000
	0.204	0.192	4.73	1.967	111,300	125,200	11,500	12,800	11,900
	0.224	0.212	5.15	1.927	121,100	136,200	12,700	14,100	13,100
	0.250	0.238	5.68	1.875	133,500	150,200	14,200	15,800	14,600
	0.276	0.261	6.19	1.823	145,600	163,800	15,300	17,000	15,600
	0.281	0.266	6.29	1.813	147,900	166,400	15,500	17,200	15,800
	0.300	0.285	6.65	1.775	156,500	176,000	16,600	18,400	16,800
2.625	0.118	0.110	3.15	2.389	74,300	83,600	6,000	6,700	3,200
	0.125	0.117	3.33	2.375	78,500	88,400	6,500	7,200	3,800
	0.134	0.126	3.55	2.357	83,900	94,400	6,800	7,600	4,500
	0.145	0.137	3.84	2.335	90,400	101,700	7,600	8,400	5,600
	0.156	0.148	4.12	2.313	96,800	108,900	8,100	9,000	6,700
	0.175	0.167	4.58	2.275	107,800	121,200	9,000	10,000	8,200
	0.188	0.176	4.90	2.249	115,100	129,500	9,600	10,700	9,300
	0.204	0.192	5.28	2.217	124,100	139,600	10,400	11,600	10,900
	0.224	0.212	5.75	2.177	135,200	152,100	11,400	12,700	11,900
	0.250	0.238	6.35	2.125	149,200	167,900	12,900	14,300	13,300
	0.276	0.261	6.93	2.073	162,900	183,300	14,000	15,500	14,300
	0.281	0.266	7.04	2.063	165,500	186,200	14,100	15,700	14,500
	0.300	0.285	7.46	2.025	175,300	197,200	15,100	16,800	15,400
2.875	0.134	0.126	3.93	2.607	92,300	103,800	6,300	7,000	3,500
	0.145	0.137	4.23	2.585	99,500	111,900	6,800	7,600	4,500
	0.156	0.148	4.53	2.563	106,600	119,900	7,500	8,300	5,500
	0.175	0.167	5.05	2.525	118,800	133,600	8,200	9,100	6,800
	0.188	0.176	5.40	2.499	127,000	142,800	8,800	9,800	7,900
	0.204	0.192	5.82	2.467	136,900	154,100	9,500	10,600	9,200
	0.224	0.212	6.35	2.427	149,200	167,900	10,500	11,700	11,000
	0.250	0.238	7.02	2.375	164,900	185,600	11,900	13,200	12,300
	0.276	0.261	7.67	2.323	180,300	202,800	12,800	14,200	13,200
	0.281	0.266	7.79	2.313	183,200	206,100	13,000	14,400	13,300
	0.300	0.285	8.26	2.275	194,200	218,400	13,900	15,400	14,200
3.250	0.145	0.137	4.81	2.960	113,200	127,300	6,100	6,800	3,300
	0.156	0.148	5.16	2.938	121,300	136,500	6,600	7,300	4,000
	0.175	0.167	5.75	2.900	135,200	152,200	7,300	8,100	5,200
	0.188	0.176	6.15	2.874	144,700	162,800	7,800	8,700	6,100
	0.204	0.192	6.64	2.842	156,200	175,700	8,500	9,400	7,300
	0.224	0.212	7.25	2.802	170,400	191,700	9,400	10,400	8,800
	0.250	0.238	8.02	2.750	188,500	212,100	10,500	11,700	10,900
	0.276	0.261	8.77	2.698	206,300	232,100	11,300	12,600	11,800
	0.281	0.266	8.92	2.688	209,700	235,900	11,500	12,800	11,900
	0.300	0.285	9.46	2.650	222,400	250,200	12,300	13,700	12,700
3.500	0.156	0.148	5.58	3.188	131,100	147,500	6,100	6,800	3,400
	0.175	0.167	6.22	3.150	146,200	164,500	6,800	7,500	4,300
	0.188	0.176	6.66	3.124	156,500	176,100	7,300	8,100	5,100
	0.204	0.192	7.19	3.092	169,000	190,100	7,900	8,800	6,200
	0.224	0.212	7.84	3.052	184,400	207,500	8,600	9,600	7,600
	0.250	0.238	8.69	3.000	204,200	229,700	9,800	10,900	9,600
	0.276	0.261	9.51	2.948	223,600	251,600	10,500	11,700	11,000
	0.281	0.266	9.67	2.938	227,300	255,800	10,700	11,900	11,200
	0.300	0.285	10.26	2.900	241,300	271,400	11,500	12,800	11,900

ST90 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	15,200	16,300	15,800	17,500	16,100
	0.083	0.078	0.59	0.584	15,700	16,900	16,600	18,400	16,900
	0.087	0.082	0.62	0.576	16,300	17,600	17,300	19,200	17,600
	0.095	0.090	0.67	0.560	17,600	19,000	17,500	21,000	19,100
	0.102	0.097	0.71	0.546	18,700	20,100	17,500	22,600	20,500
	0.109	0.104	0.75	0.532	19,800	21,300	17,500	23,400	21,200
	0.118	0.110	0.80	0.514	21,100	22,700	17,500	25,100	22,500
1.000	0.075	0.070	0.74	0.850	19,600	21,100	11,300	12,600	11,100
	0.080	0.075	0.79	0.840	20,800	22,400	12,000	13,300	12,200
	0.083	0.078	0.81	0.834	21,500	23,200	12,600	14,000	13,000
	0.087	0.082	0.85	0.826	22,500	24,200	13,100	14,600	13,600
	0.095	0.090	0.92	0.810	24,300	26,200	14,400	16,000	14,800
	0.102	0.097	0.98	0.796	25,900	27,900	15,600	17,300	16,000
	0.109	0.104	1.04	0.782	27,500	29,600	16,200	18,000	16,500
	0.118	0.110	1.11	0.764	29,400	31,700	17,300	19,200	17,600
	0.125	0.117	1.17	0.750	30,900	33,300	17,500	20,500	18,700
	0.134	0.126	1.24	0.732	32,800	35,400	17,500	21,800	19,800
1.250	0.075	0.070	0.94	1.100	24,900	26,900	9,100	10,100	7,100
	0.080	0.075	1.00	1.090	26,500	28,500	9,600	10,700	8,000
	0.087	0.082	1.08	1.076	28,600	30,800	10,600	11,800	9,700
	0.095	0.090	1.17	1.060	31,000	33,400	11,600	12,900	11,500
	0.102	0.097	1.25	1.046	33,100	35,700	12,500	13,900	13,000
	0.109	0.104	1.33	1.032	35,200	37,900	13,100	14,500	13,500
	0.118	0.110	1.43	1.014	37,800	40,700	14,000	15,600	14,400
	0.125	0.117	1.50	1.000	39,800	42,900	14,900	16,600	15,400
	0.134	0.126	1.60	0.982	42,300	45,600	15,900	17,700	16,300
	0.145	0.137	1.71	0.960	45,300	48,800	17,300	19,200	17,600
	0.156	0.148	1.82	0.938	48,300	52,000	17,500	20,800	18,900
	0.175	0.167	2.01	0.900	53,200	57,300	17,500	22,800	20,600
1.500	0.087	0.082	1.31	1.326	34,800	37,500	8,900	9,900	6,700
	0.095	0.090	1.43	1.310	37,700	40,700	9,700	10,800	8,100
	0.102	0.097	1.52	1.296	40,300	43,500	10,500	11,700	9,600
	0.109	0.104	1.62	1.282	42,900	46,200	11,000	12,200	10,400
	0.118	0.110	1.74	1.264	46,100	49,700	11,800	13,100	11,800
	0.125	0.117	1.84	1.250	48,600	52,400	12,600	14,000	13,000
	0.134	0.126	1.96	1.232	51,800	55,800	13,400	14,900	13,800
	0.145	0.137	2.10	1.210	55,600	59,900	14,600	16,200	15,000
	0.156	0.148	2.24	1.188	59,300	63,900	15,800	17,500	16,100
	0.175	0.167	2.48	1.150	65,600	70,700	17,300	19,200	17,600
	0.188	0.180	2.64	1.124	69,700	75,200	17,500	20,500	18,700
	0.204	0.196	2.83	1.092	74,800	80,600	17,500	22,200	20,200
1.750	0.095	0.090	1.68	1.560	44,500	47,900	8,300	9,200	5,700
	0.102	0.097	1.80	1.546	47,500	51,200	9,000	10,000	7,000
	0.109	0.104	1.91	1.532	50,600	54,500	9,400	10,400	7,600
	0.118	0.110	2.06	1.514	54,400	58,700	10,100	11,200	8,900
	0.125	0.117	2.17	1.500	57,400	61,900	10,800	12,000	10,100
	0.134	0.126	2.31	1.482	61,200	66,000	11,500	12,800	11,400
	0.145	0.137	2.49	1.460	65,800	70,900	12,500	13,900	13,000
	0.156	0.148	2.66	1.438	70,300	75,800	13,600	15,100	14,000
	0.175	0.167	2.95	1.400	77,900	84,000	14,900	16,600	15,400
	0.188	0.180	3.14	1.374	83,000	89,500	15,900	17,700	16,300
	0.204	0.196	3.37	1.342	89,200	96,100	17,300	19,200	17,600
	0.224	0.216	3.65	1.302	96,600	104,200	17,500	21,100	19,200
	0.250	0.242	4.01	1.250	106,000	114,300	17,500	23,500	21,300
2.000	0.109	0.104	2.20	1.782	58,300	62,800	8,300	9,200	5,600
	0.118	0.110	2.37	1.764	62,800	67,700	8,900	9,900	6,700
	0.125	0.117	2.51	1.750	66,300	71,400	9,500	10,600	7,800
	0.134	0.126	2.67	1.732	70,700	76,200	10,100	11,200	8,900
	0.145	0.137	2.88	1.710	76,100	82,000	11,100	12,300	10,500
	0.156	0.148	3.08	1.688	81,300	87,700	12,000	13,300	12,200
	0.175	0.167	3.41	1.650	90,300	97,300	13,100	14,600	13,600
	0.188	0.176	3.64	1.624	96,300	103,800	14,000	15,600	14,500
	0.204	0.192	3.92	1.592	103,600	111,600	15,300	17,000	15,700
	0.224	0.212	4.25	1.552	112,500	121,200	16,700	18,600	17,100
	0.250	0.238	4.68	1.500	123,700	133,300	17,500	20,800	19,000
	0.276	0.261	5.09	1.448	134,500	145,000	17,500	22,400	20,300
	0.281	0.266	5.16	1.438	136,600	147,200	17,500	22,700	20,600

ST90 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min.Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	69,800	75,300	6,900	7,700	3,600
	0.118	0.110	2.85	2.139	75,300	81,200	7,500	8,300	4,300
	0.125	0.117	3.01	2.125	79,500	85,700	8,000	8,900	5,200
	0.134	0.126	3.21	2.107	84,900	91,500	8,600	9,500	6,100
	0.145	0.137	3.46	2.085	91,400	98,500	9,400	10,400	7,500
	0.156	0.148	3.70	2.063	97,900	105,500	10,100	11,200	8,900
	0.175	0.167	4.12	2.025	108,900	117,300	11,200	12,400	10,700
	0.188	0.176	4.40	1.999	116,300	125,300	12,000	13,300	12,100
	0.204	0.192	4.73	1.967	125,200	135,000	13,000	14,400	13,400
	0.224	0.212	5.15	1.927	136,200	146,800	14,200	15,800	14,700
	0.250	0.238	5.68	1.875	150,200	161,900	16,000	17,800	16,300
	0.276	0.261	6.19	1.823	163,800	176,500	17,200	19,100	17,500
	0.281	0.266	6.29	1.813	166,400	179,300	17,500	19,400	17,800
	0.300	0.285	6.65	1.775	176,000	189,700	17,500	20,700	18,900
2.625	0.118	0.110	3.15	2.389	83,600	90,100	6,800	7,500	3,400
	0.125	0.117	3.33	2.375	88,400	95,200	7,300	8,100	4,000
	0.134	0.126	3.55	2.357	94,400	101,700	7,700	8,600	4,700
	0.145	0.137	3.84	2.335	101,700	109,600	8,500	9,400	5,900
	0.156	0.148	4.12	2.313	108,900	117,400	9,200	10,200	7,200
	0.175	0.167	4.58	2.275	121,200	130,700	10,100	11,200	8,900
	0.188	0.176	4.90	2.249	129,500	139,600	10,800	12,000	10,100
	0.204	0.192	5.28	2.217	139,600	150,500	11,800	13,100	11,800
	0.224	0.212	5.75	2.177	152,100	163,900	12,900	14,300	13,400
	0.250	0.238	6.35	2.125	167,900	180,900	14,500	16,100	14,900
	0.276	0.261	6.93	2.073	183,300	197,600	15,700	17,400	16,000
	0.281	0.266	7.04	2.063	186,200	200,700	15,800	17,600	16,200
	0.300	0.285	7.46	2.025	197,200	212,600	17,000	18,900	17,300
2.875	0.134	0.126	3.93	2.607	103,800	111,900	7,100	7,900	3,800
	0.145	0.137	4.23	2.585	111,900	120,600	7,700	8,600	4,700
	0.156	0.148	4.53	2.563	119,900	129,300	8,400	9,300	5,800
	0.175	0.167	5.05	2.525	133,600	144,000	9,300	10,300	7,400
	0.188	0.176	5.40	2.499	142,800	153,900	9,900	11,000	8,500
	0.204	0.192	5.82	2.467	154,100	166,000	10,800	12,000	10,000
	0.224	0.212	6.35	2.427	167,900	181,000	11,800	13,100	11,900
	0.250	0.238	7.02	2.375	185,600	200,000	13,300	14,800	13,800
	0.276	0.261	7.67	2.323	202,800	218,600	14,400	16,000	14,800
	0.281	0.266	7.79	2.313	206,100	222,100	14,600	16,200	15,000
	0.300	0.285	8.26	2.275	218,400	235,400	15,600	17,300	16,000
3.250	0.145	0.137	4.81	2.960	127,300	137,200	6,800	7,600	3,500
	0.156	0.148	5.16	2.938	136,500	147,100	7,500	8,300	4,100
	0.175	0.167	5.75	2.900	152,200	164,000	8,200	9,100	5,500
	0.188	0.176	6.15	2.874	162,800	175,400	8,700	9,700	6,500
	0.204	0.192	6.64	2.842	175,700	189,400	9,500	10,600	7,900
	0.224	0.212	7.25	2.802	191,700	206,600	10,400	11,600	9,500
	0.250	0.238	8.02	2.750	212,100	228,600	11,800	13,100	11,900
	0.276	0.261	8.77	2.698	232,100	250,100	12,800	14,200	13,200
	0.281	0.266	8.92	2.688	235,900	254,200	13,000	14,400	13,400
	0.300	0.285	9.46	2.650	250,200	269,700	13,900	15,400	14,300
3.500	0.156	0.148	5.58	3.188	147,500	159,000	6,900	7,700	3,600
	0.175	0.167	6.22	3.150	164,500	177,300	7,700	8,500	4,500
	0.188	0.176	6.66	3.124	176,100	189,700	8,200	9,100	5,400
	0.204	0.192	7.19	3.092	190,100	204,900	8,900	9,900	6,700
	0.224	0.212	7.84	3.052	207,500	223,600	9,700	10,800	8,300
	0.250	0.238	8.69	3.000	229,700	247,600	11,000	12,200	10,500
	0.276	0.261	9.51	2.948	251,600	271,200	11,900	13,200	12,000
	0.281	0.266	9.67	2.938	255,800	275,600	12,100	13,400	12,300
	0.300	0.285	10.26	2.900	271,400	292,500	13,000	14,400	13,400

ST100 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	16,800	18,200	17,500	19,500	17,900
	0.083	0.078	0.59	0.584	17,400	18,800	17,500	20,400	18,800
	0.087	0.082	0.62	0.576	18,100	19,600	17,500	21,400	19,600
	0.095	0.090	0.67	0.560	19,500	21,100	17,500	23,300	21,200
	0.102	0.097	0.71	0.546	20,800	22,400	17,500	25,100	22,800
	0.109	0.104	0.75	0.532	21,900	23,700	17,500	26,000	23,500
	0.118	0.110	0.80	0.514	23,400	25,300	17,500	27,800	25,100
1.000	0.075	0.070	0.74	0.850	21,800	23,500	12,600	14,000	12,000
	0.080	0.075	0.79	0.840	23,100	25,000	13,300	14,800	13,300
	0.083	0.078	0.81	0.834	23,900	25,800	14,000	15,500	14,500
	0.087	0.082	0.85	0.826	25,000	27,000	14,700	16,300	15,200
	0.095	0.090	0.92	0.810	27,000	29,200	15,900	17,700	16,500
	0.102	0.097	0.98	0.796	28,800	31,100	17,300	19,200	17,700
	0.109	0.104	1.04	0.782	30,500	33,000	17,500	20,000	18,400
	0.118	0.110	1.11	0.764	32,700	35,300	17,500	21,400	19,600
	0.125	0.117	1.17	0.750	34,400	37,100	17,500	22,800	20,800
	0.134	0.126	1.24	0.732	36,500	39,400	17,500	24,200	22,000
1.250	0.075	0.070	0.94	1.100	27,700	29,900	10,100	11,200	7,600
	0.080	0.075	1.00	1.090	29,400	31,800	10,700	11,900	8,500
	0.087	0.082	1.08	1.076	31,800	34,300	11,800	13,100	10,500
	0.095	0.090	1.17	1.060	34,500	37,200	12,900	14,300	12,500
	0.102	0.097	1.25	1.046	36,800	39,700	14,000	15,500	14,500
	0.109	0.104	1.33	1.032	39,100	42,200	14,500	16,100	15,000
	0.118	0.110	1.43	1.014	42,000	45,300	15,600	17,300	16,000
	0.125	0.117	1.50	1.000	44,200	47,700	16,700	18,500	17,100
	0.134	0.126	1.60	0.982	47,000	50,700	17,500	19,600	18,100
	0.145	0.137	1.71	0.960	50,300	54,400	17,500	21,400	19,600
	0.156	0.148	1.82	0.938	53,600	57,900	17,500	23,100	21,000
	0.175	0.167	2.01	0.900	59,100	63,800	17,500	25,300	22,900
1.500	0.087	0.082	1.31	1.326	38,600	41,700	9,800	10,900	7,100
	0.095	0.090	1.43	1.310	41,900	45,300	10,800	12,000	8,700
	0.102	0.097	1.52	1.296	44,800	48,400	11,700	13,000	10,400
	0.109	0.104	1.62	1.282	47,600	51,400	12,200	13,500	11,200
	0.118	0.110	1.74	1.264	51,200	55,300	13,100	14,500	12,800
	0.125	0.117	1.84	1.250	54,000	58,300	14,000	15,500	14,500
	0.134	0.126	1.96	1.232	57,500	62,100	14,900	16,500	15,400
	0.145	0.137	2.10	1.210	61,700	66,700	16,200	18,000	16,700
	0.156	0.148	2.24	1.188	65,900	71,100	17,500	19,500	17,900
	0.175	0.167	2.48	1.150	72,800	78,700	17,500	21,400	19,600
	0.188	0.180	2.64	1.124	77,500	83,700	17,500	22,800	20,800
	0.204	0.196	2.83	1.092	83,100	89,700	17,500	24,700	22,400
1.750	0.095	0.090	1.68	1.560	49,400	53,300	9,300	10,300	6,000
	0.102	0.097	1.80	1.546	52,800	57,000	10,100	11,200	7,400
	0.109	0.104	1.91	1.532	56,200	60,700	10,400	11,600	8,100
	0.118	0.110	2.06	1.514	60,500	65,300	11,300	12,500	9,500
	0.125	0.117	2.17	1.500	63,800	68,900	12,000	13,300	10,900
	0.134	0.126	2.31	1.482	68,000	73,500	12,800	14,200	12,400
	0.145	0.137	2.49	1.460	73,100	79,000	14,000	15,500	14,500
	0.156	0.148	2.66	1.438	78,100	84,400	15,100	16,800	15,600
	0.175	0.167	2.95	1.400	86,600	93,500	16,700	18,500	17,100
	0.188	0.180	3.14	1.374	92,300	99,600	17,500	19,700	18,200
	0.204	0.196	3.37	1.342	99,100	107,000	17,500	21,400	19,600
	0.224	0.216	3.65	1.302	107,400	116,000	17,500	23,400	21,300
	0.250	0.242	4.01	1.250	117,800	127,200	17,500	26,200	23,600
2.000	0.109	0.104	2.20	1.782	64,800	69,900	9,200	10,200	5,800
	0.118	0.110	2.37	1.764	69,800	75,300	9,800	10,900	7,100
	0.125	0.117	2.51	1.750	73,600	79,500	10,500	11,700	8,300
	0.134	0.126	2.67	1.732	78,600	84,800	11,300	12,500	9,600
	0.145	0.137	2.88	1.710	84,500	91,300	12,200	13,600	11,400
	0.156	0.148	3.08	1.688	90,400	97,600	13,300	14,800	13,300
	0.175	0.167	3.41	1.650	100,300	108,400	14,700	16,300	15,200
	0.188	0.176	3.64	1.624	107,000	115,600	15,700	17,400	16,100
	0.204	0.192	3.92	1.592	115,100	124,300	17,000	18,900	17,400
	0.224	0.212	4.25	1.552	125,000	135,000	17,500	20,700	19,000
	0.250	0.238	4.68	1.500	137,400	148,400	17,500	23,200	21,100
	0.276	0.261	5.09	1.448	149,500	161,400	17,500	24,900	22,600
	0.281	0.266	5.16	1.438	151,800	163,900	17,500	25,200	22,900

ST100 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	77,600	83,800	7,700	8,600	3,800
	0.118	0.110	2.85	2.139	83,700	90,400	8,300	9,200	4,500
	0.125	0.117	3.01	2.125	88,400	95,400	8,900	9,900	5,400
	0.134	0.126	3.21	2.107	94,300	101,900	9,500	10,500	6,400
	0.145	0.137	3.46	2.085	101,600	109,700	10,400	11,500	8,000
	0.156	0.148	3.70	2.063	108,800	117,500	11,300	12,500	9,600
	0.175	0.167	4.12	2.025	121,000	130,600	12,400	13,800	11,600
	0.188	0.176	4.40	1.999	129,200	139,500	13,200	14,700	13,200
	0.204	0.192	4.73	1.967	139,100	150,300	14,400	16,000	14,900
	0.224	0.212	5.15	1.927	151,400	163,500	15,800	17,600	16,300
	0.250	0.238	5.68	1.875	166,900	180,200	17,500	19,700	18,200
	0.276	0.261	6.19	1.823	182,000	196,600	17,500	21,200	19,500
	0.281	0.266	6.29	1.813	184,900	199,600	17,500	21,600	19,700
	0.300	0.285	6.65	1.775	195,600	211,200	17,500	23,100	21,000
2.625	0.118	0.110	3.15	2.389	92,900	100,400	7,600	8,400	3,600
	0.125	0.117	3.33	2.375	98,200	106,000	8,100	9,000	4,200
	0.134	0.126	3.55	2.357	104,900	113,300	8,600	9,600	4,800
	0.145	0.137	3.84	2.335	113,000	122,000	9,400	10,400	6,200
	0.156	0.148	4.12	2.313	121,000	130,700	10,200	11,300	7,700
	0.175	0.167	4.58	2.275	134,700	145,500	11,300	12,500	9,500
	0.188	0.176	4.90	2.249	143,900	155,400	12,100	13,400	11,000
	0.204	0.192	5.28	2.217	155,200	167,600	13,100	14,500	12,800
	0.224	0.212	5.75	2.177	169,000	182,500	14,300	15,900	14,900
	0.250	0.238	6.35	2.125	186,500	201,500	16,100	17,900	16,600
	0.276	0.261	6.93	2.073	203,700	220,000	17,400	19,300	17,800
	0.281	0.266	7.04	2.063	206,900	223,500	17,500	19,600	18,100
	0.300	0.285	7.46	2.025	219,100	236,700	17,500	21,000	19,200
2.875	0.134	0.126	3.93	2.607	115,400	124,600	7,800	8,700	3,900
	0.145	0.137	4.23	2.585	124,400	134,300	8,600	9,600	4,800
	0.156	0.148	4.53	2.563	133,300	143,900	9,300	10,300	6,100
	0.175	0.167	5.05	2.525	148,400	160,300	10,300	11,400	7,800
	0.188	0.176	5.40	2.499	158,700	171,400	11,000	12,200	9,100
	0.204	0.192	5.82	2.467	171,200	184,900	12,000	13,300	10,800
	0.224	0.212	6.35	2.427	186,600	201,500	13,100	14,600	13,000
	0.250	0.238	7.02	2.375	206,200	222,700	14,800	16,400	15,300
	0.276	0.261	7.67	2.323	225,400	243,400	15,900	17,700	16,400
	0.281	0.266	7.79	2.313	229,000	247,300	16,200	18,000	16,700
	0.300	0.285	8.26	2.275	242,700	262,100	17,400	19,300	17,800
3.250	0.145	0.137	4.81	2.960	141,400	152,800	7,600	8,400	3,700
	0.156	0.148	5.16	2.938	151,600	163,800	8,300	9,200	4,400
	0.175	0.167	5.75	2.900	169,100	182,600	9,100	10,100	5,700
	0.188	0.176	6.15	2.874	180,800	195,300	9,700	10,800	6,900
	0.204	0.192	6.64	2.842	195,200	210,800	10,600	11,800	8,400
	0.224	0.212	7.25	2.802	212,900	230,000	11,600	12,900	10,300
	0.250	0.238	8.02	2.750	235,600	254,500	13,100	14,600	13,000
	0.276	0.261	8.77	2.698	257,900	278,500	14,100	15,700	14,700
	0.281	0.266	8.92	2.688	262,100	283,100	14,400	16,000	14,900
	0.300	0.285	9.46	2.650	278,000	300,300	15,400	17,100	15,900
3.500	0.156	0.148	5.58	3.188	163,900	177,000	7,700	8,500	3,700
	0.175	0.167	6.22	3.150	182,800	197,400	8,500	9,400	4,600
	0.188	0.176	6.66	3.124	195,600	211,300	9,100	10,100	5,700
	0.204	0.192	7.19	3.092	211,200	228,100	9,800	10,900	7,100
	0.224	0.212	7.84	3.052	230,500	249,000	10,900	12,100	8,800
	0.250	0.238	8.69	3.000	255,300	275,700	12,200	13,600	11,300
	0.276	0.261	9.51	2.948	279,500	301,900	13,200	14,700	13,100
	0.281	0.266	9.67	2.938	284,200	306,900	13,400	14,900	13,400
	0.300	0.285	10.26	2.900	301,600	325,700	14,400	16,000	14,900

ST110 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	18,500	19,400	17,500	21,400	19,700
	0.083	0.078	0.59	0.584	19,100	20,000	17,500	22,500	20,700
	0.087	0.082	0.62	0.576	19,900	20,800	17,500	23,500	21,600
	0.095	0.090	0.67	0.560	21,500	22,500	17,500	25,600	23,300
	0.102	0.097	0.71	0.546	22,800	23,900	17,500	27,700	25,100
	0.109	0.104	0.75	0.532	24,100	25,200	17,500	28,700	25,900
	0.118	0.110	0.80	0.514	25,800	26,900	17,500	30,600	27,600
1.000	0.075	0.070	0.74	0.850	24,000	25,100	13,900	15,400	12,900
	0.080	0.075	0.79	0.840	25,400	26,600	14,600	16,200	14,300
	0.083	0.078	0.81	0.834	26,300	27,500	15,400	17,100	15,700
	0.087	0.082	0.85	0.826	27,400	28,700	16,100	17,900	16,700
	0.095	0.090	0.92	0.810	29,700	31,100	17,500	19,500	18,100
	0.102	0.097	0.98	0.796	31,700	33,100	17,500	21,200	19,500
	0.109	0.104	1.04	0.782	33,600	35,100	17,500	22,000	20,200
	0.118	0.110	1.11	0.764	36,000	37,600	17,500	23,500	21,600
	0.125	0.117	1.17	0.750	37,800	39,500	17,500	25,100	22,900
	0.134	0.126	1.24	0.732	40,100	41,900	17,500	26,600	24,200
1.250	0.075	0.070	0.94	1.100	30,500	31,800	11,200	12,400	7,900
	0.080	0.075	1.00	1.090	32,300	33,800	11,700	13,000	9,000
	0.087	0.082	1.08	1.076	35,000	36,600	13,000	14,400	11,200
	0.095	0.090	1.17	1.060	37,900	39,600	14,100	15,700	13,400
	0.102	0.097	1.25	1.046	40,500	42,300	15,300	17,000	15,600
	0.109	0.104	1.33	1.032	43,000	44,900	15,900	17,700	16,500
	0.118	0.110	1.43	1.014	46,200	48,300	17,100	19,000	17,600
	0.125	0.117	1.50	1.000	48,600	50,800	17,500	20,300	18,800
	0.134	0.126	1.60	0.982	51,700	54,000	17,500	21,600	19,900
	0.145	0.137	1.71	0.960	55,400	57,900	17,500	23,500	21,500
	0.156	0.148	1.82	0.938	59,000	61,700	17,500	25,400	23,100
	0.175	0.167	2.01	0.900	65,000	68,000	17,500	27,800	25,200
1.500	0.087	0.082	1.31	1.326	42,500	44,400	10,800	12,000	7,400
	0.095	0.090	1.43	1.310	46,100	48,200	11,900	13,200	9,300
	0.102	0.097	1.52	1.296	49,300	51,500	12,900	14,300	11,100
	0.109	0.104	1.62	1.282	52,400	54,800	13,400	14,900	12,000
	0.118	0.110	1.74	1.264	56,400	58,900	14,400	16,000	13,800
	0.125	0.117	1.84	1.250	59,400	62,100	15,400	17,100	15,700
	0.134	0.126	1.96	1.232	63,300	66,100	16,400	18,200	16,900
	0.145	0.137	2.10	1.210	67,900	71,000	17,500	19,800	18,300
	0.156	0.148	2.24	1.188	72,500	75,700	17,500	21,400	19,700
	0.175	0.167	2.48	1.150	80,100	83,800	17,500	23,500	21,600
	0.188	0.180	2.64	1.124	85,200	89,100	17,500	25,100	22,900
	0.204	0.196	2.83	1.092	91,400	95,500	17,500	27,200	24,600
1.750	0.095	0.090	1.68	1.560	54,300	56,800	10,200	11,300	6,200
	0.102	0.097	1.80	1.546	58,100	60,700	11,100	12,300	7,800
	0.109	0.104	1.91	1.532	61,800	64,600	11,500	12,800	8,600
	0.118	0.110	2.06	1.514	66,500	69,600	12,300	13,700	10,200
	0.125	0.117	2.17	1.500	70,200	73,400	13,200	14,700	11,700
	0.134	0.126	2.31	1.482	74,800	78,200	14,000	15,600	13,300
	0.145	0.137	2.49	1.460	80,400	84,100	15,300	17,000	15,600
	0.156	0.148	2.66	1.438	85,900	89,800	16,700	18,500	17,200
	0.175	0.167	2.95	1.400	95,200	99,600	17,500	20,300	18,800
	0.188	0.180	3.14	1.374	101,500	106,100	17,500	21,700	20,000
	0.204	0.196	3.37	1.342	109,000	113,900	17,500	23,500	21,500
	0.224	0.216	3.65	1.302	118,100	123,500	17,500	25,700	23,400
	0.250	0.242	4.01	1.250	129,600	135,500	17,500	28,800	26,000
2.000	0.109	0.104	2.20	1.782	71,200	74,500	10,100	11,200	6,000
	0.118	0.110	2.37	1.764	76,700	80,200	10,800	12,000	7,400
	0.125	0.117	2.51	1.750	81,000	84,700	11,600	12,900	8,800
	0.134	0.126	2.67	1.732	86,400	90,300	12,300	13,700	10,200
	0.145	0.137	2.88	1.710	93,000	97,200	13,500	15,000	12,200
	0.156	0.148	3.08	1.688	99,400	103,900	14,600	16,200	14,300
	0.175	0.167	3.41	1.650	110,400	115,400	16,100	17,900	16,700
	0.188	0.176	3.64	1.624	117,700	123,100	17,200	19,100	17,700
	0.204	0.192	3.92	1.592	126,600	132,400	17,500	20,700	19,200
	0.224	0.212	4.25	1.552	137,500	143,700	17,500	22,700	20,900
	0.250	0.238	4.68	1.500	151,200	158,100	17,500	25,500	23,200
	0.276	0.261	5.09	1.448	164,400	171,900	17,500	27,400	24,900
	0.281	0.266	5.16	1.438	166,900	174,500	17,500	27,800	25,200

ST110 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	85,400	89,200	8,600	9,500	3,900
	0.118	0.110	2.85	2.139	92,000	96,200	9,200	10,200	4,700
	0.125	0.117	3.01	2.125	97,200	101,600	9,800	10,900	5,500
	0.134	0.126	3.21	2.107	103,800	108,500	10,400	11,600	6,700
	0.145	0.137	3.46	2.085	111,700	116,800	11,400	12,700	8,400
	0.156	0.148	3.70	2.063	119,600	125,100	12,300	13,700	10,200
	0.175	0.167	4.12	2.025	133,000	139,100	13,700	15,200	12,500
	0.188	0.176	4.40	1.999	142,100	148,500	14,600	16,200	14,200
	0.204	0.192	4.73	1.967	153,000	160,000	15,800	17,600	16,400
	0.224	0.212	5.15	1.927	166,500	174,100	17,400	19,300	17,900
	0.250	0.238	5.68	1.875	183,600	191,900	17,500	21,700	20,000
	0.276	0.261	6.19	1.823	200,200	209,300	17,500	23,400	21,400
	0.281	0.266	6.29	1.813	203,300	212,600	17,500	23,700	21,700
	0.300	0.285	6.65	1.775	215,100	224,900	17,500	25,400	23,100
2.625	0.118	0.110	3.15	2.389	102,200	106,900	8,300	9,200	3,700
	0.125	0.117	3.33	2.375	108,000	112,900	8,900	9,900	4,400
	0.134	0.126	3.55	2.357	115,400	120,600	9,500	10,500	5,000
	0.145	0.137	3.84	2.335	124,300	129,900	10,400	11,500	6,500
	0.156	0.148	4.12	2.313	133,100	139,200	11,200	12,400	8,100
	0.175	0.167	4.58	2.275	148,200	154,900	12,300	13,700	10,200
	0.188	0.176	4.90	2.249	158,300	165,500	13,200	14,700	11,700
	0.204	0.192	5.28	2.217	170,700	178,400	14,400	16,000	13,800
	0.224	0.212	5.75	2.177	185,900	194,300	15,800	17,500	16,400
	0.250	0.238	6.35	2.125	205,200	214,500	17,500	19,700	18,300
	0.276	0.261	6.93	2.073	224,000	234,200	17,500	21,300	19,600
	0.281	0.266	7.04	2.063	227,600	238,000	17,500	21,600	19,900
	0.300	0.285	7.46	2.025	241,000	252,000	17,500	23,100	21,200
2.875	0.134	0.126	3.93	2.607	126,900	132,700	8,600	9,600	4,100
	0.145	0.137	4.23	2.585	136,800	143,000	9,500	10,500	5,000
	0.156	0.148	4.53	2.563	146,600	153,200	10,300	11,400	6,400
	0.175	0.167	5.05	2.525	163,300	170,700	11,300	12,600	8,300
	0.188	0.176	5.40	2.499	174,600	182,500	12,200	13,500	9,700
	0.204	0.192	5.82	2.467	188,300	196,900	13,100	14,600	11,600
	0.224	0.212	6.35	2.427	205,200	214,500	14,500	16,100	14,000
	0.250	0.238	7.02	2.375	226,800	237,100	16,300	18,100	16,800
	0.276	0.261	7.67	2.323	247,900	259,200	17,500	19,500	18,100
	0.281	0.266	7.79	2.313	251,900	263,300	17,500	19,800	18,300
	0.300	0.285	8.26	2.275	267,000	279,100	17,500	21,200	19,500
3.250	0.145	0.137	4.81	2.960	155,600	162,700	8,400	9,300	3,800
	0.156	0.148	5.16	2.938	166,800	174,400	9,100	10,100	4,600
	0.175	0.167	5.75	2.900	186,000	194,400	10,000	11,100	5,900
	0.188	0.176	6.15	2.874	198,900	208,000	10,700	11,900	7,200
	0.204	0.192	6.64	2.842	214,700	224,500	11,700	13,000	8,900
	0.224	0.212	7.25	2.802	234,200	244,900	12,800	14,200	11,000
	0.250	0.238	8.02	2.750	259,200	271,000	14,400	16,000	14,000
	0.276	0.261	8.77	2.698	283,700	296,500	15,600	17,300	16,100
	0.281	0.266	8.92	2.688	288,300	301,400	15,800	17,600	16,400
	0.300	0.285	9.46	2.650	305,800	319,700	16,900	18,800	17,500
3.500	0.156	0.148	5.58	3.188	180,300	188,500	8,500	9,400	3,900
	0.175	0.167	6.22	3.150	201,100	210,200	9,300	10,300	4,900
	0.188	0.176	6.66	3.124	215,200	225,000	10,000	11,100	5,800
	0.204	0.192	7.19	3.092	232,400	242,900	10,800	12,000	7,400
	0.224	0.212	7.84	3.052	253,600	265,100	12,000	13,300	9,400
	0.250	0.238	8.69	3.000	280,800	293,500	13,400	14,900	12,100
	0.276	0.261	9.51	2.948	307,500	321,500	14,500	16,100	14,100
	0.281	0.266	9.67	2.938	312,600	326,800	14,800	16,400	14,500
	0.300	0.285	10.26	2.900	331,800	346,800	15,800	17,500	16,400

ST130 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.57	0.590	21,900	22,700	17,500	26,300	30,000
	0.083	0.078	0.59	0.584	22,600	23,500	17,500	27,400	31,300
	0.087	0.082	0.62	0.576	23,600	24,500	17,500	28,800	33,100
	0.095	0.090	0.67	0.560	25,400	26,400	17,500	31,200	36,300
	0.102	0.097	0.71	0.546	27,000	28,000	17,500	33,600	39,600
	0.109	0.104	0.75	0.532	28,500	29,600	17,500	36,100	43,000
	0.118	0.110	0.80	0.514	30,500	31,600	17,500	39,200	47,400
1.000	0.075	0.070	0.74	0.850	28,300	29,400	16,600	18,500	20,300
	0.080	0.075	0.79	0.840	30,100	31,200	17,500	19,800	21,800
	0.083	0.078	0.81	0.834	31,100	32,300	17,500	20,500	22,800
	0.087	0.082	0.85	0.826	32,400	33,700	17,500	21,600	24,000
	0.095	0.090	0.92	0.810	35,100	36,500	17,500	23,400	26,300
	0.102	0.097	0.98	0.796	37,400	38,800	17,500	25,200	28,500
	0.109	0.104	1.04	0.782	39,700	41,200	17,500	27,000	30,900
	0.118	0.110	1.11	0.764	42,500	44,100	17,500	29,400	33,900
	0.125	0.117	1.17	0.750	44,700	46,400	17,500	30,700	35,600
	0.134	0.126	1.24	0.732	47,400	49,200	17,500	33,000	38,800
1.250	0.075	0.070	0.94	1.100	36,000	37,400	13,300	14,800	16,000
	0.080	0.075	1.00	1.090	38,200	39,700	14,200	15,800	17,200
	0.087	0.082	1.08	1.076	41,300	42,900	15,500	17,300	18,900
	0.095	0.090	1.17	1.060	44,800	46,500	16,800	18,700	20,600
	0.102	0.097	1.25	1.046	47,800	49,700	17,500	20,200	22,300
	0.109	0.104	1.33	1.032	50,800	52,700	17,500	21,600	24,100
	0.118	0.110	1.43	1.014	54,600	56,700	17,500	23,500	26,400
	0.125	0.117	1.50	1.000	57,400	59,600	17,500	24,500	27,700
	0.134	0.126	1.60	0.982	61,100	63,400	17,500	26,400	30,100
	0.145	0.137	1.71	0.960	65,400	68,000	17,500	28,700	33,000
	0.156	0.148	1.82	0.938	69,700	72,400	17,500	30,800	35,800
	0.175	0.167	2.01	0.900	76,800	79,800	17,500	34,700	41,100
1.500	0.087	0.082	1.31	1.326	50,200	52,100	12,900	14,400	15,500
	0.095	0.090	1.43	1.310	54,500	56,600	14,000	15,600	16,900
	0.102	0.097	1.52	1.296	58,200	60,500	15,100	16,800	18,300
	0.109	0.104	1.62	1.282	61,900	64,300	16,200	18,000	19,800
	0.118	0.110	1.74	1.264	66,600	69,200	17,500	19,600	21,600
	0.125	0.117	1.84	1.250	70,200	72,900	17,500	20,500	22,600
	0.134	0.126	1.96	1.232	74,800	77,600	17,500	22,000	24,500
	0.145	0.137	2.10	1.210	80,200	83,300	17,500	23,900	26,900
	0.156	0.148	2.24	1.188	85,600	88,900	17,500	25,700	29,100
	0.175	0.167	2.48	1.150	94,700	98,300	17,500	28,900	33,300
	0.188	0.180	2.64	1.124	100,700	104,600	17,500	31,200	36,300
	0.204	0.196	2.83	1.092	108,000	112,100	17,500	33,600	39,600
1.750	0.095	0.090	1.68	1.560	64,200	66,700	12,000	13,400	14,400
	0.102	0.097	1.80	1.546	68,700	71,300	13,000	14,400	15,500
	0.109	0.104	1.91	1.532	73,100	75,900	13,900	15,500	16,700
	0.118	0.110	2.06	1.514	78,600	81,700	15,100	16,800	18,300
	0.125	0.117	2.17	1.500	83,000	86,100	15,800	17,500	19,200
	0.134	0.126	2.31	1.482	88,400	91,800	17,000	18,900	20,700
	0.145	0.137	2.49	1.460	95,000	98,700	17,500	20,500	22,700
	0.156	0.148	2.66	1.438	101,600	105,500	17,500	22,000	24,500
	0.175	0.167	2.95	1.400	112,600	116,900	17,500	24,800	28,000
	0.188	0.180	3.14	1.374	119,900	124,500	17,500	26,700	30,500
	0.204	0.196	3.37	1.342	128,800	133,800	17,500	28,800	33,200
	0.224	0.216	3.65	1.302	139,600	145,000	17,500	31,800	37,100
	0.250	0.242	4.01	1.250	153,200	159,000	17,500	35,700	42,400
2.000	0.109	0.104	2.20	1.782	84,200	87,400	12,200	13,500	14,500
	0.118	0.110	2.37	1.764	90,700	94,200	13,200	14,700	15,900
	0.125	0.117	2.51	1.750	95,700	99,400	13,800	15,300	16,600
	0.134	0.126	2.67	1.732	102,100	106,000	14,900	16,500	18,000
	0.145	0.137	2.88	1.710	109,900	114,100	16,100	17,900	19,600
	0.156	0.148	3.08	1.688	117,500	122,000	17,300	19,200	21,200
	0.175	0.167	3.41	1.650	130,400	135,500	17,500	21,700	24,200
	0.188	0.176	3.64	1.624	139,100	144,500	17,500	23,400	26,300
	0.204	0.192	3.92	1.592	149,600	155,400	17,500	25,200	28,500
	0.224	0.212	4.25	1.552	162,500	168,700	17,500	27,800	31,900
	0.250	0.238	4.68	1.500	178,700	185,600	17,500	31,200	36,300
	0.276	0.261	5.09	1.448	194,300	201,800	17,500	34,600	40,900
	0.281	0.266	5.16	1.438	197,300	204,900	17,500	35,200	41,800

ST130 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.64	2.157	100,900	104,800	10,200	11,400	12,100
	0.118	0.110	2.85	2.139	108,800	113,000	11,100	12,400	13,200
	0.125	0.117	3.01	2.125	114,900	119,300	11,600	12,900	13,800
	0.134	0.126	3.21	2.107	122,600	127,400	12,500	13,900	15,000
	0.145	0.137	3.46	2.085	132,100	137,100	13,600	15,100	16,300
	0.156	0.148	3.70	2.063	141,400	146,800	14,600	16,200	17,600
	0.175	0.167	4.12	2.025	157,200	163,300	16,500	18,300	20,100
	0.188	0.176	4.40	1.999	167,900	174,400	17,500	19,700	21,700
	0.204	0.192	4.73	1.967	180,900	187,800	17,500	21,200	23,600
	0.224	0.212	5.15	1.927	196,800	204,300	17,500	23,400	26,300
	0.250	0.238	5.68	1.875	217,000	225,300	17,500	26,300	29,900
	0.276	0.261	6.19	1.823	236,600	245,700	17,500	29,100	33,600
	0.281	0.266	6.29	1.813	240,300	249,600	17,500	29,700	34,300
	0.300	0.285	6.65	1.775	254,200	264,000	17,500	31,500	36,800
2.625	0.118	0.110	3.15	2.389	120,800	125,500	10,100	11,200	11,900
	0.125	0.117	3.33	2.375	127,600	132,500	10,500	11,700	12,500
	0.134	0.126	3.55	2.357	136,300	141,600	11,300	12,600	13,500
	0.145	0.137	3.84	2.335	146,900	152,500	12,300	13,700	14,700
	0.156	0.148	4.12	2.313	157,300	163,400	13,200	14,700	15,800
	0.175	0.167	4.58	2.275	175,100	181,800	14,900	16,500	18,000
	0.188	0.176	4.90	2.249	187,100	194,300	16,000	17,800	19,500
	0.204	0.192	5.28	2.217	201,700	209,500	17,300	19,200	21,200
	0.224	0.212	5.75	2.177	219,700	228,100	17,500	21,200	23,600
	0.250	0.238	6.35	2.125	242,500	251,800	17,500	23,800	26,700
	0.276	0.261	6.93	2.073	264,800	275,000	17,500	26,300	30,000
	0.281	0.266	7.04	2.063	269,000	279,300	17,500	26,800	30,600
	0.300	0.285	7.46	2.025	284,900	295,800	17,500	28,500	32,800
2.875	0.134	0.126	3.93	2.607	150,000	155,800	10,300	11,500	12,200
	0.145	0.137	4.23	2.585	161,700	167,900	11,200	12,500	13,400
	0.156	0.148	4.53	2.563	173,200	179,900	12,000	13,400	14,400
	0.175	0.167	5.05	2.525	193,000	200,400	13,600	15,100	16,300
	0.188	0.176	5.40	2.499	206,300	214,200	14,700	16,300	17,700
	0.204	0.192	5.82	2.467	222,500	231,100	15,800	17,500	19,200
	0.224	0.212	6.35	2.427	242,500	251,800	17,400	19,400	21,300
	0.250	0.238	7.02	2.375	268,000	278,300	17,500	21,700	24,200
	0.276	0.261	7.67	2.323	293,000	304,200	17,500	24,100	27,100
	0.281	0.266	7.79	2.313	297,700	309,100	17,500	24,500	27,600
	0.300	0.285	8.26	2.275	315,500	327,600	17,500	26,000	29,600
3.250	0.145	0.137	4.81	2.960	183,900	190,900	9,900	11,000	11,700
	0.156	0.148	5.16	2.938	197,100	204,700	10,700	11,800	12,600
	0.175	0.167	5.75	2.900	219,800	228,200	12,000	13,400	14,300
	0.188	0.176	6.15	2.874	235,100	244,100	13,000	14,400	15,500
	0.204	0.192	6.64	2.842	253,800	263,500	14,000	15,500	16,800
	0.224	0.212	7.25	2.802	276,800	287,500	15,400	17,100	18,700
	0.250	0.238	8.02	2.750	306,300	318,100	17,300	19,200	21,100
	0.276	0.261	8.77	2.698	335,200	348,100	17,500	21,300	23,700
	0.281	0.266	8.92	2.688	340,700	353,800	17,500	21,700	24,100
	0.300	0.285	9.46	2.650	361,400	375,300	17,500	23,000	25,800
3.500	0.156	0.148	5.58	3.188	213,100	221,200	9,900	11,000	11,700
	0.175	0.167	6.22	3.150	237,600	246,800	11,200	12,400	13,300
	0.188	0.176	6.66	3.124	254,300	264,100	12,000	13,400	14,400
	0.204	0.192	7.19	3.092	274,600	285,200	13,000	14,400	15,500
	0.224	0.212	7.84	3.052	299,700	311,200	14,300	15,900	17,300
	0.250	0.238	8.69	3.000	331,800	344,600	16,000	17,800	19,500
	0.276	0.261	9.51	2.948	363,400	377,400	17,500	19,800	21,800
	0.281	0.266	9.67	2.938	369,400	383,600	17,500	20,100	22,300
	0.300	0.285	10.26	2.900	392,100	407,200	17,500	21,400	23,800

ST316L-40 0.75 in to 2.375 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.59	0.590	6,700	11,800	7,000	7,800	7,200
	0.083	0.078	0.61	0.584	7,000	12,200	7,400	8,200	7,500
	0.087	0.082	0.63	0.576	7,200	12,700	7,700	8,600	7,800
	0.095	0.090	0.68	0.560	7,800	13,700	8,400	9,300	8,500
	0.102	0.097	0.72	0.546	8,300	14,500	9,100	10,100	9,100
1.000	0.075	0.070	0.76	0.850	8,700	15,300	5,000	5,600	5,300
	0.080	0.075	0.81	0.840	9,200	16,200	5,300	5,900	5,500
	0.083	0.078	0.83	0.834	9,600	16,700	5,600	6,200	5,800
	0.087	0.082	0.87	0.826	10,000	17,500	5,900	6,500	6,100
	0.095	0.090	0.94	0.810	10,800	18,900	6,400	7,100	6,600
	0.102	0.097	1.00	0.796	11,500	20,100	6,900	7,700	7,100
	0.109	0.104	1.06	0.782	12,200	21,400	7,200	8,000	7,400
	0.118	0.110	1.14	0.764	13,100	22,900	7,700	8,600	7,800
	0.125	0.117	1.19	0.750	13,700	24,100	8,200	9,100	8,300
	0.134	0.126	1.27	0.732	14,600	25,500	8,700	9,700	8,800
1.250	0.080	0.075	1.02	1.090	11,800	20,600	4,200	4,700	4,400
	0.087	0.082	1.10	1.076	12,700	22,300	4,700	5,200	4,900
	0.095	0.090	1.20	1.060	13,800	24,100	5,100	5,700	5,400
	0.102	0.097	1.28	1.046	14,700	25,800	5,600	6,200	5,800
	0.109	0.104	1.36	1.032	15,600	27,400	5,800	6,400	6,000
	0.118	0.110	1.46	1.014	16,800	29,400	6,200	6,900	6,400
	0.125	0.117	1.53	1.000	17,700	30,900	6,700	7,400	6,800
	0.134	0.126	1.63	0.982	18,800	32,900	7,100	7,900	7,300
	0.145	0.137	1.75	0.960	20,100	35,200	7,700	8,600	7,800
	0.156	0.148	1.86	0.938	21,400	37,500	8,300	9,200	8,400
1.500	0.087	0.082	1.34	1.326	15,400	27,000	4,000	4,400	3,900
	0.095	0.090	1.46	1.310	16,800	29,400	4,300	4,800	4,500
	0.102	0.097	1.56	1.296	17,900	31,400	4,700	5,200	4,900
	0.109	0.104	1.65	1.282	19,100	33,300	4,900	5,400	5,100
	0.118	0.110	1.78	1.264	20,500	35,900	5,200	5,800	5,500
	0.125	0.117	1.87	1.250	21,600	37,800	5,600	6,200	5,800
	0.134	0.126	1.99	1.232	23,000	40,300	5,900	6,600	6,200
	0.145	0.137	2.14	1.210	24,700	43,200	6,500	7,200	6,700
	0.156	0.148	2.28	1.188	26,300	46,100	7,000	7,800	7,200
	0.175	0.167	2.53	1.150	29,100	51,000	7,700	8,600	7,800
	0.188	0.180	2.69	1.124	31,000	54,200	8,200	9,100	8,300
1.750	0.095	0.090	1.71	1.560	19,800	34,600	3,700	4,100	3,500
	0.102	0.097	1.83	1.546	21,100	37,000	4,100	4,500	4,000
	0.109	0.104	1.95	1.532	22,500	39,300	4,100	4,600	4,300
	0.118	0.110	2.10	1.514	24,200	42,300	4,500	5,000	4,700
	0.125	0.117	2.21	1.500	25,500	44,700	4,800	5,300	5,000
	0.134	0.126	2.36	1.482	27,200	47,600	5,100	5,700	5,300
	0.145	0.137	2.53	1.460	29,200	51,200	5,600	6,200	5,800
	0.156	0.148	2.71	1.438	31,200	54,700	6,000	6,700	6,200
	0.175	0.167	3.00	1.400	34,600	60,600	6,700	7,400	6,800
	0.188	0.180	3.20	1.374	36,900	64,600	7,100	7,900	7,300
	0.204	0.196	3.43	1.342	39,600	69,400	7,700	8,600	7,800
2.000	0.109	0.104	2.25	1.782	25,900	45,300	3,700	4,100	3,400
	0.118	0.110	2.42	1.764	27,900	48,800	4,000	4,400	3,900
	0.125	0.117	2.55	1.750	29,500	51,500	4,200	4,700	4,400
	0.134	0.126	2.72	1.732	31,400	55,000	4,500	5,000	4,700
	0.145	0.137	2.93	1.710	33,800	59,200	5,000	5,500	5,100
	0.156	0.148	3.13	1.688	36,100	63,300	5,300	5,900	5,500
	0.175	0.167	3.48	1.650	40,100	70,200	5,900	6,500	6,100
	0.188	0.176	3.71	1.624	42,800	74,900	6,300	7,000	6,500
	0.204	0.192	3.99	1.592	46,000	80,600	6,800	7,500	7,000
2.375	0.125	0.117	3.06	2.125	35,300	61,900	3,600	4,000	3,300
	0.134	0.126	3.27	2.107	37,700	66,000	3,800	4,200	3,700
	0.145	0.137	3.52	2.085	40,600	71,100	4,100	4,600	4,200
	0.156	0.148	3.77	2.063	43,500	76,100	4,500	5,000	4,700
	0.175	0.167	4.19	2.025	48,400	84,700	5,000	5,500	5,200
	0.188	0.176	4.47	1.999	51,700	90,400	5,300	5,900	5,500
	0.204	0.192	4.82	1.967	55,700	97,400	5,800	6,400	6,000

ST2205-80 0.75in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.59	0.590	13,500	16,000	14,000	15,600	14,400
	0.083	0.078	0.61	0.584	13,900	16,500	14,700	16,300	15,000
	0.087	0.082	0.63	0.576	14,500	17,200	15,400	17,100	15,700
	0.095	0.090	0.68	0.560	15,600	18,600	16,700	18,600	17,000
	0.102	0.097	0.72	0.546	16,600	19,700	17,500	20,100	18,300
1.000	0.075	0.070	0.76	0.850	17,400	20,700	10,100	11,200	10,100
	0.080	0.075	0.81	0.840	18,500	22,000	10,600	11,800	11,100
	0.083	0.078	0.83	0.834	19,100	22,700	11,200	12,400	11,600
	0.087	0.082	0.87	0.826	20,000	23,700	11,700	13,000	12,100
	0.095	0.090	0.94	0.810	21,600	25,700	12,800	14,200	13,200
	0.102	0.097	1.00	0.796	23,000	27,300	13,900	15,400	14,200
	0.109	0.104	1.06	0.782	24,400	29,000	14,400	16,000	14,700
	0.118	0.110	1.14	0.764	26,200	31,100	15,400	17,100	15,700
	0.125	0.117	1.19	0.750	27,500	32,600	16,500	18,300	16,700
	0.134	0.126	1.27	0.732	29,200	34,600	17,500	19,400	17,600
1.250	0.075	0.070	0.96	1.100	22,100	26,300	8,100	9,000	6,600
	0.080	0.075	1.02	1.090	23,500	27,900	8,600	9,500	7,400
	0.087	0.082	1.10	1.076	25,400	30,200	9,500	10,500	8,900
	0.095	0.090	1.20	1.060	27,600	32,700	10,300	11,400	10,700
	0.102	0.097	1.28	1.046	29,400	34,900	11,200	12,400	11,600
	0.109	0.104	1.36	1.032	31,300	37,100	11,600	12,900	12,000
	0.118	0.110	1.46	1.014	33,600	39,900	12,400	13,800	12,800
	0.125	0.117	1.53	1.000	35,300	42,000	13,300	14,800	13,700
	0.134	0.126	1.63	0.982	37,600	44,600	14,100	15,700	14,500
	0.145	0.137	1.75	0.960	40,300	47,800	15,400	17,100	15,700
	0.156	0.148	1.86	0.938	42,900	50,900	16,700	18,500	16,800
	0.175	0.167	2.05	0.900	47,300	56,100	17,500	20,200	18,400
1.500	0.087	0.082	1.34	1.326	30,900	36,700	7,900	8,800	6,200
	0.095	0.090	1.46	1.310	33,500	39,800	8,600	9,600	7,500
	0.102	0.097	1.56	1.296	35,800	42,600	9,400	10,400	8,800
	0.109	0.104	1.65	1.282	38,100	45,300	9,700	10,800	9,500
	0.118	0.110	1.78	1.264	41,000	48,700	10,400	11,600	10,900
	0.125	0.117	1.87	1.250	43,200	51,300	11,200	12,400	11,600
	0.134	0.126	1.99	1.232	46,000	54,600	11,900	13,200	12,300
	0.145	0.137	2.14	1.210	49,400	58,600	13,000	14,400	13,400
	0.156	0.148	2.28	1.188	52,700	62,600	14,000	15,600	14,400
	0.175	0.167	2.53	1.150	58,300	69,200	15,400	17,100	15,700
	0.188	0.180	2.69	1.124	62,000	73,600	16,500	18,300	16,700
	0.204	0.196	2.88	1.092	66,400	78,900	17,500	19,700	17,900
1.750	0.095	0.090	1.71	1.560	39,500	46,900	7,400	8,200	5,400
	0.102	0.097	1.83	1.546	42,200	50,200	8,000	8,900	6,500
	0.109	0.104	1.95	1.532	45,000	53,400	8,400	9,300	7,100
	0.118	0.110	2.10	1.514	48,400	57,500	9,000	10,000	8,200
	0.125	0.117	2.21	1.500	51,100	60,600	9,600	10,700	9,300
	0.134	0.126	2.36	1.482	54,400	64,600	10,300	11,400	10,700
	0.145	0.137	2.53	1.460	58,500	69,500	11,200	12,400	11,600
	0.156	0.148	2.71	1.438	62,500	74,200	12,100	13,400	12,500
	0.175	0.167	3.00	1.400	69,300	82,300	13,300	14,800	13,700
	0.188	0.180	3.20	1.374	73,800	87,600	14,200	15,800	14,600
	0.204	0.196	3.43	1.342	79,300	94,100	15,400	17,100	15,700
	0.224	0.216	3.72	1.302	85,900	102,000	16,800	18,700	17,100
	0.250	0.242	4.08	1.250	94,200	111,900	17,500	20,900	18,900
2.000	0.109	0.104	2.25	1.782	51,800	61,500	7,300	8,100	5,300
	0.118	0.110	2.42	1.764	55,800	66,300	7,900	8,800	6,200
	0.125	0.117	2.55	1.750	58,900	69,900	8,500	9,400	7,200
	0.134	0.126	2.72	1.732	62,800	74,600	9,000	10,000	8,200
	0.145	0.137	2.93	1.710	67,600	80,300	9,800	10,900	9,600
	0.156	0.148	3.13	1.688	72,300	85,900	10,600	11,800	11,100
	0.175	0.167	3.48	1.650	80,300	95,300	11,700	13,000	12,100
	0.188	0.176	3.71	1.624	85,600	101,700	12,500	13,900	12,900
	0.204	0.192	3.99	1.592	92,100	109,300	13,600	15,100	13,900
	0.224	0.212	4.33	1.552	100,000	118,700	14,900	16,500	15,200
	0.250	0.238	4.76	1.500	110,000	130,600	16,700	18,500	16,900
	0.276	0.261	5.18	1.448	119,600	142,000	17,500	19,900	18,100
	0.281	0.266	5.26	1.438	121,400	144,200	17,500	20,200	18,300

ST2205-80 2.0 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.69	2.157	62,100	73,700	6,200	6,900	3,400
	0.118	0.110	2.90	2.139	66,900	79,500	6,700	7,400	4,100
	0.125	0.117	3.06	2.125	70,700	83,900	7,100	7,900	4,900
	0.134	0.126	3.27	2.107	75,500	89,600	7,600	8,400	5,800
	0.145	0.137	3.52	2.085	81,300	96,500	8,300	9,200	7,000
	0.156	0.148	3.77	2.063	87,000	103,300	9,000	10,000	8,200
	0.175	0.167	4.19	2.025	96,800	114,900	9,900	11,000	9,800
	0.188	0.176	4.47	1.999	103,300	122,700	10,600	11,800	11,000
	0.204	0.192	4.82	1.967	111,300	132,200	11,500	12,800	11,900
	0.224	0.212	5.24	1.927	121,100	143,800	12,700	14,100	13,100
	0.250	0.238	5.78	1.875	133,500	158,600	14,200	15,800	14,600
	0.276	0.261	6.30	1.823	145,600	172,900	15,300	17,000	15,600
	0.281	0.266	6.40	1.813	147,900	175,600	15,500	17,200	15,800
	0.300	0.285	6.77	1.775	156,500	185,800	16,600	18,400	16,800
2.625	0.145	0.137	3.91	2.335	90,400	107,300	7,600	8,400	5,600
	0.156	0.148	4.19	2.313	96,800	115,000	8,100	9,000	6,700
	0.175	0.167	4.67	2.275	107,800	128,000	9,000	10,000	8,200
	0.188	0.176	4.99	2.249	115,100	136,700	9,600	10,700	9,300
	0.204	0.192	5.37	2.217	124,100	147,400	10,400	11,600	10,900
	0.224	0.212	5.85	2.177	135,200	160,500	11,400	12,700	11,900
	0.250	0.238	6.46	2.125	149,200	177,200	12,900	14,300	13,300
	0.276	0.261	7.05	2.073	162,900	193,500	14,000	15,500	14,300
	0.281	0.266	7.16	2.063	165,500	196,600	14,100	15,700	14,500
	0.300	0.285	7.59	2.025	175,300	208,200	15,100	16,800	15,400
2.875	0.134	0.126	4.00	2.607	92,300	109,600	6,300	7,000	3,500
	0.145	0.137	4.31	2.585	99,500	118,100	6,800	7,600	4,500
	0.156	0.148	4.62	2.563	106,600	126,600	7,500	8,300	5,500
	0.175	0.167	5.14	2.525	118,800	141,000	8,200	9,100	6,800
	0.188	0.176	5.50	2.499	127,000	150,800	8,800	9,800	7,900
	0.204	0.192	5.93	2.467	136,900	162,600	9,500	10,600	9,200
	0.224	0.212	6.46	2.427	149,200	177,200	10,500	11,700	11,000
	0.250	0.238	7.14	2.375	164,900	195,900	11,900	13,200	12,300
	0.276	0.261	7.80	2.323	180,300	214,100	12,800	14,200	13,200
	0.281	0.266	7.93	2.313	183,200	217,500	13,000	14,400	13,300
	0.300	0.285	8.40	2.275	194,200	230,600	13,900	15,400	14,200
3.250	0.145	0.137	4.90	2.960	113,200	134,400	6,100	6,800	3,300
	0.156	0.148	5.25	2.938	121,300	144,100	6,600	7,300	4,000
	0.175	0.167	5.85	2.900	135,200	160,600	7,300	8,100	5,200
	0.188	0.176	6.26	2.874	144,700	171,800	7,800	8,700	6,100
	0.204	0.192	6.76	2.842	156,200	185,500	8,500	9,400	7,300
	0.224	0.212	7.37	2.802	170,400	202,300	9,400	10,400	8,800
	0.250	0.238	8.16	2.750	188,500	223,800	10,500	11,700	10,900
	0.276	0.261	8.93	2.698	206,300	245,000	11,300	12,600	11,800
	0.281	0.266	9.07	2.688	209,700	249,000	11,500	12,800	11,900
	0.300	0.285	9.63	2.650	222,400	264,100	12,300	13,700	12,700
3.500	0.156	0.148	5.68	3.188	131,100	155,700	6,100	6,800	3,400
	0.175	0.167	6.33	3.150	146,200	173,700	6,800	7,500	4,300
	0.188	0.176	6.77	3.124	156,500	185,800	7,300	8,100	5,100
	0.204	0.192	7.31	3.092	169,000	200,700	7,900	8,800	6,200
	0.224	0.212	7.98	3.052	184,400	219,000	8,600	9,600	7,600
	0.250	0.238	8.84	3.000	204,200	242,500	9,800	10,900	9,600
	0.276	0.261	9.68	2.948	223,600	265,600	10,500	11,700	11,000
	0.281	0.266	9.84	2.938	227,300	270,000	10,700	11,900	11,200
	0.300	0.285	10.44	2.900	241,300	286,500	11,500	12,800	11,900

ST2507-90 0.75 in to 2.0 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.750	0.080	0.075	0.59	0.590	15,200	19,500	15,800	17,500	16,100
	0.083	0.078	0.61	0.584	15,700	20,200	16,600	18,400	16,900
	0.087	0.082	0.64	0.576	16,300	21,000	17,300	19,200	17,600
	0.095	0.090	0.69	0.560	17,600	22,700	17,500	21,000	19,100
	0.102	0.097	0.73	0.546	18,700	24,100	17,500	22,600	20,500
1.000	0.075	0.070	0.76	0.850	19,600	25,300	11,300	12,600	11,100
	0.080	0.075	0.81	0.840	20,800	26,800	12,000	13,300	12,200
	0.083	0.078	0.84	0.834	21,500	27,700	12,600	14,000	13,000
	0.087	0.082	0.87	0.826	22,500	28,900	13,100	14,600	13,600
	0.095	0.090	0.95	0.810	24,300	31,300	14,400	16,000	14,800
	0.102	0.097	1.01	0.796	25,900	33,400	15,600	17,300	16,000
	0.109	0.104	1.07	0.782	27,500	35,400	16,200	18,000	16,500
	0.118	0.110	1.14	0.764	29,400	37,900	17,300	19,200	17,600
	0.125	0.117	1.20	0.750	30,900	39,900	17,500	20,500	18,700
	0.134	0.126	1.27	0.732	32,800	42,300	17,500	21,800	19,800
1.250	0.075	0.070	0.97	1.100	24,900	32,100	9,100	10,100	7,100
	0.080	0.075	1.03	1.090	26,500	34,100	9,600	10,700	8,000
	0.087	0.082	1.11	1.076	28,600	36,900	10,600	11,800	9,700
	0.095	0.090	1.21	1.060	31,000	40,000	11,600	12,900	11,500
	0.102	0.097	1.29	1.046	33,100	42,700	12,500	13,900	13,000
	0.109	0.104	1.37	1.032	35,200	45,300	13,100	14,500	13,500
	0.118	0.110	1.47	1.014	37,800	48,700	14,000	15,600	14,400
	0.125	0.117	1.54	1.000	39,800	51,200	14,900	16,600	15,400
	0.134	0.126	1.64	0.982	42,300	54,500	15,900	17,700	16,300
	0.145	0.137	1.76	0.960	45,300	58,400	17,300	19,200	17,600
	0.156	0.148	1.87	0.938	48,300	62,200	17,500	20,800	18,900
	0.175	0.167	2.06	0.900	53,200	68,600	17,500	22,800	20,600
1.500	0.087	0.082	1.35	1.326	34,800	44,800	8,900	9,900	6,700
	0.095	0.090	1.47	1.310	37,700	48,600	9,700	10,800	8,100
	0.102	0.097	1.56	1.296	40,300	52,000	10,500	11,700	9,600
	0.109	0.104	1.66	1.282	42,900	55,300	11,000	12,200	10,400
	0.118	0.110	1.79	1.264	46,100	59,400	11,800	13,100	11,800
	0.125	0.117	1.89	1.250	48,600	62,600	12,600	14,000	13,000
	0.134	0.126	2.01	1.232	51,800	66,700	13,400	14,900	13,800
	0.145	0.137	2.15	1.210	55,600	71,600	14,600	16,200	15,000
	0.156	0.148	2.30	1.188	59,300	76,400	15,800	17,500	16,100
	0.175	0.167	2.54	1.150	65,600	84,500	17,300	19,200	17,600
	0.188	0.180	2.70	1.124	69,700	89,900	17,500	20,500	18,700
	0.204	0.196	2.90	1.092	74,800	96,300	17,500	22,200	20,200
1.750	0.095	0.090	1.72	1.560	44,500	57,300	8,300	9,200	5,700
	0.102	0.097	1.84	1.546	47,500	61,300	9,000	10,000	7,000
	0.109	0.104	1.96	1.532	50,600	65,200	9,400	10,400	7,600
	0.118	0.110	2.11	1.514	54,400	70,200	10,100	11,200	8,900
	0.125	0.117	2.23	1.500	57,400	74,000	10,800	12,000	10,100
	0.134	0.126	2.37	1.482	61,200	78,900	11,500	12,800	11,400
	0.145	0.137	2.55	1.460	65,800	84,800	12,500	13,900	13,000
	0.156	0.148	2.73	1.438	70,300	90,600	13,600	15,100	14,000
	0.175	0.167	3.02	1.400	77,900	100,400	14,900	16,600	15,400
	0.188	0.180	3.22	1.374	83,000	107,000	15,900	17,700	16,300
	0.204	0.196	3.45	1.342	89,200	114,900	17,300	19,200	17,600
	0.224	0.216	3.74	1.302	96,600	124,600	17,500	21,100	19,200
	0.250	0.242	4.11	1.250	106,000	136,700	17,500	23,500	21,300
2.000	0.109	0.104	2.26	1.782	58,300	75,100	8,300	9,200	5,600
	0.118	0.110	2.43	1.764	62,800	80,900	8,900	9,900	6,700
	0.125	0.117	2.57	1.750	66,300	85,400	9,500	10,600	7,800
	0.134	0.126	2.74	1.732	70,700	91,100	10,100	11,200	8,900
	0.145	0.137	2.95	1.710	76,100	98,000	11,100	12,300	10,500
	0.156	0.148	3.15	1.688	81,300	104,800	12,000	13,300	12,200
	0.175	0.167	3.50	1.650	90,300	116,400	13,100	14,600	13,600
	0.188	0.176	3.73	1.624	96,300	124,100	14,000	15,600	14,500
	0.204	0.192	4.01	1.592	103,600	133,500	15,300	17,000	15,700
	0.224	0.212	4.36	1.552	112,500	145,000	16,700	18,600	17,100
	0.250	0.238	4.79	1.500	123,700	159,400	17,500	20,800	19,000
	0.276	0.261	5.21	1.448	134,500	173,400	17,500	22,400	20,300
	0.281	0.266	5.29	1.438	136,600	176,000	17,500	22,700	20,600

ST2507-90 2.375 in to 3.5 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
2.375	0.109	0.104	2.71	2.157	69,800	90,000	6,900	7,700	3,600
	0.118	0.110	2.92	2.139	75,300	97,100	7,500	8,300	4,300
	0.125	0.117	3.08	2.125	79,500	102,500	8,000	8,900	5,200
	0.134	0.126	3.29	2.107	84,900	109,400	8,600	9,500	6,100
	0.145	0.137	3.54	2.085	91,400	117,800	9,400	10,400	7,500
	0.156	0.148	3.79	2.063	97,900	126,200	10,100	11,200	8,900
	0.175	0.167	4.22	2.025	108,900	140,300	11,200	12,400	10,700
	0.188	0.176	4.50	1.999	116,300	149,800	12,000	13,300	12,100
	0.204	0.192	4.85	1.967	125,200	161,400	13,000	14,400	13,400
	0.224	0.212	5.28	1.927	136,200	175,600	14,200	15,800	14,700
	0.250	0.238	5.82	1.875	150,200	193,600	16,000	17,800	16,300
	0.276	0.261	6.34	1.823	163,800	211,100	17,200	19,100	17,500
	0.281	0.266	6.44	1.813	166,400	214,400	17,500	19,400	17,800
	0.300	0.285	6.81	1.775	176,000	226,900	17,500	20,700	18,900
2.625	0.145	0.137	3.94	2.335	101,700	131,000	8,500	9,400	5,900
	0.156	0.148	4.22	2.313	108,900	140,400	9,200	10,200	7,200
	0.175	0.167	4.69	2.275	121,200	156,200	10,100	11,200	8,900
	0.188	0.176	5.02	2.249	129,500	167,000	10,800	12,000	10,100
	0.204	0.192	5.41	2.217	139,600	180,000	11,800	13,100	11,800
	0.224	0.212	5.89	2.177	152,100	196,000	12,900	14,300	13,400
	0.250	0.238	6.50	2.125	167,900	216,400	14,500	16,100	14,900
	0.276	0.261	7.10	2.073	183,300	236,300	15,700	17,400	16,000
	0.281	0.266	7.21	2.063	186,200	240,000	15,800	17,600	16,200
	0.300	0.285	7.63	2.025	197,200	254,200	17,000	18,900	17,300
2.875	0.134	0.126	4.02	2.607	103,800	133,900	7,100	7,900	3,800
	0.145	0.137	4.33	2.585	111,900	144,300	7,700	8,600	4,700
	0.156	0.148	4.64	2.563	119,900	154,600	8,400	9,300	5,800
	0.175	0.167	5.17	2.525	133,600	172,200	9,300	10,300	7,400
	0.188	0.176	5.53	2.499	142,800	184,100	9,900	11,000	8,500
	0.204	0.192	5.97	2.467	154,100	198,600	10,800	12,000	10,000
	0.224	0.212	6.50	2.427	167,900	216,400	11,800	13,100	11,900
	0.250	0.238	7.18	2.375	185,600	239,200	13,300	14,800	13,800
	0.276	0.261	7.85	2.323	202,800	261,400	14,400	16,000	14,800
	0.281	0.266	7.98	2.313	206,100	265,600	14,600	16,200	15,000
	0.300	0.285	8.45	2.275	218,400	281,500	15,600	17,300	16,000
3.250	0.145	0.137	4.93	2.960	127,300	164,100	6,800	7,600	3,500
	0.156	0.148	5.28	2.938	136,500	175,900	7,500	8,300	4,100
	0.175	0.167	5.89	2.900	152,200	196,100	8,200	9,100	5,500
	0.188	0.176	6.30	2.874	162,800	209,800	8,700	9,700	6,500
	0.204	0.192	6.80	2.842	175,700	226,400	9,500	10,600	7,900
	0.224	0.212	7.42	2.802	191,700	247,000	10,400	11,600	9,500
	0.250	0.238	8.21	2.750	212,100	273,300	11,800	13,100	11,900
	0.276	0.261	8.98	2.698	232,100	299,100	12,800	14,200	13,200
	0.281	0.266	9.13	2.688	235,900	304,000	13,000	14,400	13,400
	0.300	0.285	9.69	2.650	250,200	322,500	13,900	15,400	14,300
3.500	0.156	0.148	5.71	3.188	147,500	190,100	6,900	7,700	3,600
	0.175	0.167	6.37	3.150	164,500	212,000	7,700	8,500	4,500
	0.188	0.176	6.82	3.124	176,100	226,900	8,200	9,100	5,400
	0.204	0.192	7.36	3.092	190,100	245,000	8,900	9,900	6,700
	0.224	0.212	8.03	3.052	207,500	267,400	9,700	10,800	8,300
	0.250	0.238	8.89	3.000	229,700	296,100	11,000	12,200	10,500
	0.276	0.261	9.74	2.948	251,600	324,300	11,900	13,200	12,000
	0.281	0.266	9.90	2.938	255,800	329,600	12,100	13,400	12,300
	0.300	0.285	10.51	2.900	271,400	349,800	13,000	14,400	13,400

ST13Cr-80 1.25 in to 2.375 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Pressure
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
1.250	0.080	0.076	0.99	1.090	23,500	25,900	8,600	9,500	7,400
	0.087	0.083	1.07	1.076	25,400	28,000	9,500	10,500	8,900
	0.095	0.090	1.16	1.060	27,600	30,300	10,300	11,400	10,700
	0.102	0.097	1.23	1.046	29,400	32,400	11,200	12,400	11,600
	0.109	0.104	1.31	1.032	31,300	34,400	11,600	12,900	12,000
	0.118	0.113	1.41	1.014	33,600	36,900	12,400	13,800	12,800
	0.125	0.118	1.48	1.000	35,300	38,900	13,300	14,800	13,700
	0.134	0.127	1.57	0.982	37,600	41,300	14,100	15,700	14,500
	0.145	0.138	1.69	0.960	40,300	44,300	15,400	17,100	15,700
	0.156	0.148	1.80	0.938	42,900	47,200	16,700	18,500	16,800
1.500	0.087	0.083	1.29	1.326	30,900	34,000	7,900	8,800	6,200
	0.095	0.090	1.41	1.310	33,500	36,900	8,600	9,600	7,500
	0.102	0.097	1.50	1.296	35,800	39,400	9,400	10,400	8,800
	0.109	0.104	1.60	1.282	38,100	41,900	9,700	10,800	9,500
	0.118	0.113	1.72	1.264	41,000	45,100	10,400	11,600	10,900
	0.125	0.118	1.81	1.250	43,200	47,500	11,200	12,400	11,600
	0.134	0.127	1.92	1.232	46,000	50,600	11,900	13,200	12,300
	0.145	0.138	2.07	1.210	49,400	54,300	13,000	14,400	13,400
	0.156	0.148	2.20	1.188	52,700	58,000	14,000	15,600	14,400
	0.175	0.167	2.44	1.150	58,300	64,100	15,400	17,100	15,700
	0.188	0.180	2.59	1.124	62,000	68,200	16,500	18,300	16,700
1.750	0.095	0.090	1.65	1.560	39,500	43,500	7,400	8,200	5,400
	0.102	0.097	1.77	1.546	42,200	46,500	8,000	8,900	6,500
	0.109	0.104	1.88	1.532	45,000	49,500	8,400	9,300	7,100
	0.118	0.113	2.02	1.514	48,400	53,200	9,000	10,000	8,200
	0.125	0.118	2.14	1.500	51,100	56,200	9,600	10,700	9,300
	0.134	0.127	2.28	1.482	54,400	59,900	10,300	11,400	10,700
	0.145	0.138	2.45	1.460	58,500	64,300	11,200	12,400	11,600
	0.156	0.148	2.61	1.438	62,500	68,700	12,100	13,400	12,500
	0.175	0.167	2.90	1.400	69,300	76,200	13,300	14,800	13,700
	0.188	0.180	3.09	1.374	73,800	81,200	14,200	15,800	14,600
	0.204	0.194	3.31	1.342	79,300	87,200	15,400	17,100	15,700
2.000	0.109	0.104	2.17	1.782	51,800	57,000	7,300	8,100	5,300
	0.118	0.113	2.33	1.764	55,800	61,400	7,900	8,800	6,200
	0.125	0.118	2.46	1.750	58,900	64,800	8,500	9,400	7,200
	0.134	0.127	2.63	1.732	62,800	69,100	9,000	10,000	8,200
	0.145	0.138	2.83	1.710	67,600	74,400	9,800	10,900	9,600
	0.156	0.148	3.02	1.688	72,300	79,500	10,600	11,800	11,100
	0.175	0.167	3.35	1.650	80,300	88,300	11,700	13,000	12,100
	0.188	0.180	3.58	1.624	85,600	94,200	12,500	13,900	12,900
	0.204	0.194	3.85	1.592	92,100	101,300	13,600	15,100	13,900
2.375	0.125	0.118	2.96	2.125	70,700	77,800	7,100	7,900	4,900
	0.134	0.127	3.15	2.107	75,500	83,000	7,600	8,400	5,800
	0.145	0.138	3.40	2.085	81,300	89,400	8,300	9,200	7,000
	0.156	0.148	3.64	2.063	87,000	95,700	9,000	10,000	8,200
	0.175	0.167	4.04	2.025	96,800	106,400	9,900	11,000	9,800
	0.188	0.180	4.32	1.999	103,300	113,700	10,600	11,800	11,000
	0.204	0.194	4.65	1.967	111,300	122,400	11,500	12,800	11,900

Technical Data of Capillary Tube

Materials		ST316L-40	ST2205-80	ST2205-90	ST2507-90	ST825-40	ST625-40	STMonel400-40
Chemical Composition	Cmax	0.030	0.030	0.030	0.030	0.05	0.10	0.3
	Mn max	2.00	2.00	2.00	1.20	1	0.50	2.0
	Pmax	0.045	0.030	0.030	0.035	...	0.015	
	Smax	0.030	0.020	0.020	0.020	0.03	0.015	0.024
	Simax	0.75	1.00	1.00	0.80	0.5	0.5	0.5
	Cr	16.0-18.0	22.0-23.0	22.0-23.0	24.0-26.0	19.5-23.5	20.0-23.0	
	Ni min	10.0-14.0	4.5-6.5	4.5-6.5	6.0-8.0	38.0-46.0	58.0	63.0
	Mo	2.00-3.00	3.0-3.5	3.0-3.5	3.0-5.0	2.5-3.5	8.0-10.0	
	Cu							28.0-34.0
	Femax							2.6
Yield Strength (min)，psig		40,000	80,000	90,000	90,000	40,000	40,000	40,000
Tensile Strength (min)，psig		70,000	95,000	95,000	116,000	85,000	100,000	70,000
Hardness，HRC		200HV	30	30	32	/	/	/

ST316L-40 0.125 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.125	0.028	0.025	0.03	0.069	300	600	14,500	16,100	12,800
	0.035	0.032	0.04	0.055	400	700	17,500	20,200	15,100
0.250	0.035	0.032	0.09	0.180	900	1,700	9,100	10,100	8,800
	0.049	0.044	0.11	0.152	1,200	2,200	12,700	14,100	11,700
	0.065	0.059	0.14	0.120	1,500	2,600	16,800	18,700	14,300
0.375	0.035	0.032	0.13	0.305	1,500	2,600	6,000	6,700	6,200
	0.049	0.044	0.18	0.277	2,000	3,500	8,500	9,400	8,300
	0.065	0.059	0.22	0.245	2,500	4,400	11,200	12,500	10,500
	0.080	0.072	0.26	0.215	3,000	5,200	13,800	15,400	12,000
0.500	0.049	0.044	0.25	0.402	2,800	4,900	6,400	7,100	6,500
	0.065	0.059	0.31	0.370	3,600	6,200	8,400	9,400	8,300
	0.080	0.072	0.37	0.340	4,200	7,400	10,400	11,500	9,900
0.625	0.049	0.044	0.31	0.527	3,500	6,200	5,100	5,600	5,300
	0.065	0.059	0.40	0.495	4,600	8,000	6,700	7,500	6,800

ST2205-80 0.25 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.250	0.035	0.032	0.08	0.180	1,900	2,200	17,500	20,200	17,600
	0.049	0.044	0.11	0.152	2,500	2,900	17,500	28,200	23,300
	0.065	0.059	0.13	0.120	3,000	3,600	17,500	37,400	28,700
0.375	0.035	0.032	0.13	0.305	3,000	3,600	12,100	13,400	12,300
	0.049	0.044	0.17	0.277	4,000	4,800	16,900	18,800	16,700
	0.065	0.059	0.22	0.245	5,100	6,000	17,500	25,000	21,100
	0.080	0.072	0.26	0.215	5,900	7,000	17,500	30,700	24,800
0.500	0.049	0.044	0.24	0.402	5,600	6,600	12,700	14,100	12,900
	0.065	0.059	0.31	0.370	7,100	8,400	16,800	18,700	16,500
	0.080	0.072	0.36	0.340	8,400	10,000	17,500	23,000	19,700
0.625	0.049	0.044	0.30	0.527	7,100	8,400	10,200	11,300	10,100
	0.065	0.059	0.39	0.495	9,100	10,900	13,500	15,000	13,600

ST2205-90 0.25 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.250	0.035	0.032	0.08	0.180	2,100	2,200	17,500	22,700	19,800
	0.049	0.044	0.11	0.152	2,800	2,900	17,500	31,800	26,200
	0.065	0.059	0.13	0.120	3,400	3,600	17,500	42,100	32,200
0.375	0.035	0.032	0.13	0.305	3,400	3,600	13,600	15,100	13,800
	0.049	0.044	0.17	0.277	4,500	4,800	17,500	21,200	18,700
	0.065	0.059	0.22	0.245	5,700	6,000	17,500	28,100	23,700
	0.080	0.072	0.26	0.215	6,700	7,000	17,500	34,600	27,900
0.500	0.049	0.044	0.24	0.402	6,200	6,600	14,300	15,900	14,500
	0.065	0.059	0.31	0.370	8,000	8,400	17,500	21,100	18,600
	0.080	0.072	0.36	0.340	9,500	10,000	17,500	25,900	22,100
0.625	0.049	0.044	0.30	0.527	8,000	8,400	11,400	12,700	11,100
	0.065	0.059	0.39	0.495	10,300	10,900	15,200	16,800	15,200

ST2507-90 0.25 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.250	0.035	0.032	0.09	0.180	2,100	2,700	17,500	22,700	19,800
	0.049	0.044	0.11	0.152	2,800	3,600	17,500	31,800	26,200
	0.065	0.059	0.14	0.120	3,400	4,400	17,500	42,100	32,200
0.375	0.035	0.032	0.14	0.305	3,400	4,300	13,600	15,100	13,800
	0.049	0.044	0.18	0.277	4,500	5,800	17,500	21,200	18,700
	0.065	0.059	0.23	0.245	5,700	7,300	17,500	28,100	23,700
	0.080	0.072	0.26	0.215	6,700	8,600	17,500	34,600	27,900
0.500	0.049	0.044	0.25	0.402	6,200	8,100	14,300	15,900	14,500
	0.065	0.059	0.31	0.370	8,000	10,300	17,500	21,100	18,600
	0.080	0.072	0.37	0.340	9,500	12,200	17,500	25,900	22,100
0.625	0.049	0.044	0.31	0.527	8,000	10,300	11,400	12,700	11,100
	0.065	0.059	0.40	0.495	10,300	13,300	15,200	16,800	15,200

ST825-40 0.125 in to 0.625 in

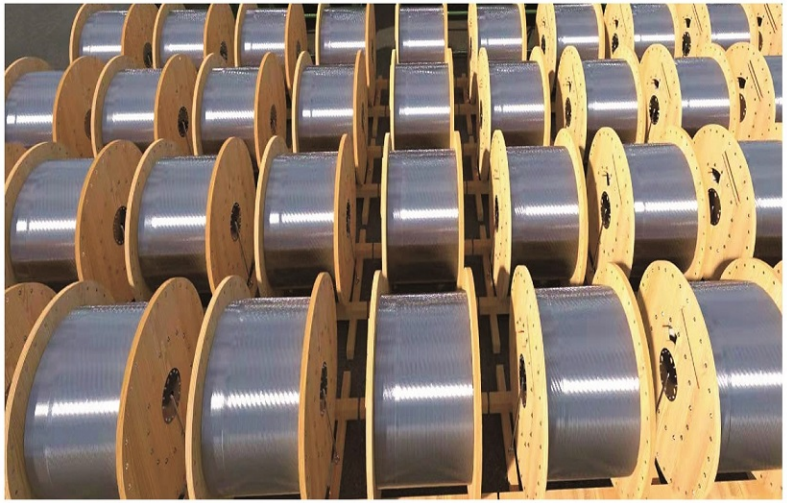
Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.125	0.028	0.025	0.04	0.069	300	700	14,500	16,100	12,800
	0.035	0.032	0.04	0.055	400	800	17,500	20,200	15,100
0.250	0.035	0.032	0.09	0.180	900	2,000	9,100	10,100	8,800
	0.049	0.044	0.11	0.152	1,200	2,600	12,700	14,100	11,700
	0.065	0.059	0.14	0.120	1,500	3,200	16,800	18,700	14,300
0.375	0.035	0.032	0.14	0.305	1,500	3,200	6,000	6,700	6,200
	0.049	0.044	0.18	0.277	2,000	4,300	8,500	9,400	8,300
	0.065	0.059	0.23	0.245	2,500	5,400	11,200	12,500	10,500
	0.080	0.072	0.27	0.215	3,000	6,300	13,800	15,400	12,400
0.500	0.049	0.044	0.25	0.402	2,800	5,900	6,400	7,100	6,500
	0.065	0.059	0.32	0.370	3,600	7,600	8,400	9,400	8,300
	0.080	0.072	0.38	0.340	4,200	9,000	10,400	11,500	9,900
0.625	0.049	0.044	0.32	0.527	3,500	7,500	5,100	5,600	5,300
	0.065	0.059	0.41	0.495	4,600	9,700	6,700	7,500	6,800

ST625-40 0.125 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.125	0.028	0.025	0.04	0.069	300	900	14,500	16,100	12,800
	0.035	0.032	0.04	0.055	400	1,000	17,500	20,200	15,100
0.250	0.035	0.032	0.09	0.180	900	2,400	9,100	10,100	8,800
	0.049	0.044	0.12	0.152	1,200	3,100	12,700	14,100	11,700
	0.065	0.059	0.14	0.120	1,500	3,800	16,800	18,700	14,300
0.375	0.035	0.032	0.14	0.305	1,500	3,700	6,000	6,700	6,200
	0.049	0.044	0.19	0.277	2,000	5,000	8,500	9,400	8,300
	0.065	0.059	0.24	0.245	2,500	6,300	11,200	12,500	10,500
	0.080	0.072	0.28	0.215	3,000	7,400	13,800	15,400	12,400
0.500	0.049	0.044	0.26	0.402	2,800	6,900	6,400	7,100	6,500
	0.065	0.059	0.33	0.370	3,600	8,900	8,400	9,400	8,300
	0.080	0.072	0.39	0.340	4,200	10,600	10,400	11,500	9,900
0.625	0.049	0.044	0.33	0.527	3,500	8,900	5,100	5,600	5,300
	0.065	0.059	0.42	0.495	4,600	11,400	6,700	7,500	6,800

STMonel400-40 0.125 in to 0.625 in

Outside Diameter	Wall Thickness		Mass Per Unit Length	Nominal Inside Diameter	Tube Body Load		Min. Hydro Test Pressure	Min. Internal Yield Pressure	Collapse Strength
	Specified	Min.			Min. Yield Strength	Min. Tensile Strength			
OD	t	tmin	Wpe	ID					
in.	in.	in.	lbs/ft	in.	lbs	lbs	psig	psig	psig
0.125	0.028	0.025	0.04	0.069	300	600	14,500	16,100	12,800
	0.035	0.032	0.04	0.055	400	700	17,500	20,200	15,100
0.250	0.035	0.032	0.10	0.180	900	1,700	9,100	10,100	8,800
	0.049	0.044	0.12	0.152	1,200	2,200	12,700	14,100	11,700
	0.065	0.059	0.15	0.120	1,500	2,600	16,800	18,700	14,300
0.375	0.035	0.032	0.15	0.305	1,500	2,600	6,000	6,700	6,200
	0.049	0.044	0.20	0.277	2,000	3,500	8,500	9,400	8,300
	0.065	0.059	0.25	0.245	2,500	4,400	11,200	12,500	10,500
	0.080	0.072	0.29	0.215	3,000	5,200	13,800	15,400	12,400
0.500	0.049	0.044	0.27	0.402	2,800	4,900	6,400	7,100	6,500
	0.065	0.059	0.34	0.370	3,600	6,200	8,400	9,400	8,300
	0.080	0.072	0.41	0.340	4,200	7,400	10,400	11,500	9,900
0.625	0.049	0.044	0.34	0.527	3,500	6,200	5,100	5,600	5,300
	0.065	0.059	0.44	0.495	4,600	8,000	6,700	7,500	6,800



Technical Data of Encapsulated Cable

Technical Data of TEC

Tube Selection (316L , 0.125 in-0.625 in)

Outside Diameter (in)	Wall Thickness (in)	Yield Strength (psi)	Tensile Strength (psi)	Collapse Strength (psi)	Min. Bending Radius (ft)
0.125	0.028	90 000	100 000	29000	0.75
	0.035			33900	0.75
0.25	0.035			19800	1.25
	0.049			26200	1.25
	0.065			32300	1.25
0.375	0.035			13800	2.25
	0.049			18700	2.25
	0.065			23700	2.25
0.5	0.035			10600	3
	0.049			14500	3
	0.065			18600	3
	0.08			22200	3
0.625	0.049			11800	3.75
	0.065			15300	3.75

- The calculated value of collapse strength is based on the minimum yield strength of 90,000 psi.
- The tube is welded by large-size steel strips, and is drawn and heat-treated to obtain the final product.
- With laser printing technology, various data information can be printed on the tube according to your needs, including product serial number, purchase order number, product model and specification, etc.

Incoloy825,0.125 in-0.625 in

Outside Diameter (in)	Wall Thickness (in)	Yield Strength (psi)	Tensile Strength (psi)	Collapse Strength (psi)	Min. Bending Radius (ft)
0.125	0.028	95 000	110 000	30600	0.75
	0.035			35800	0.75
0.25	0.035			20900	1.25
	0.049			27600	1.25
	0.065			34100	1.25
0.375	0.035			14600	2.25
	0.049			19700	2.25
	0.065			25000	2.25
0.5	0.035			11200	3
	0.049			15300	3
	0.065			19600	3
	0.08			23400	3
0.625	0.049			12500	3.75
	0.065			16100	3.75

- The calculated value of collapse strength is based on the minimum yield strength of 95,000 psi.
- The tube is welded by large-size steel strips, and is drawn and heat-treated to obtain the final product.
- With laser printing technology, various data information can be printed on the tube according to your needs, including product serial number, purchase order number, product model and specification, etc.

Cable Selection

Filler	PP	PP	FEP	PFA
Insulation	FEP	ETFE	FEP	PFA
Max. Applicable Temperature	150	150	200	260

Conductor Size AWG	Outside Diameter(mm)		Max. Resistance （Ω/km）
	Solid Core	7 Strands	20℃
12AWG	2.05		5.31
14AWG	1.62		8.45
16AWG	1.29		13.5
18AWG	1.02	7/0.39	23
20AWG	0.81	7/0.32	34.8
22AWG	0.64		54.3

Electrical Performance	
Insulation Resistance	≥2000MΩ* km
Withstanding Voltage Insulation Test	DC voltage 3KV, no breakdown in 5 minutes.

There are multiple configuration options for copper conductors.

- **Size:** 12, 14, 16, 18, 20, 22AWG, etc.
- **Type:** Solid Core or Stranded Conductor
- **Material:** bare copper, tin-plated, silver-plated, and other copper conductors.

Selection of Encapsulation, Insulation, Filler Materials

Abbr. of Materials	Names	Brands	Applicable Temp℃
ETFE	Ethylene Tetrafluoroethylene		-60℃~150℃
FEP	Fluoronated Ethylene Propylene		-110℃~200℃
HDPE	High Density Polyethylene		-60℃~90℃
PFA	Perfluoroalkoxy		-80℃~260℃
PP	Modified Polypropylene		-30℃~150℃
PVDF	Polyvinylidene Fluoride		-30℃~150℃
TPV	Thermoplastic Vulcanizating		-30℃~150℃
PA11	Nylon11		-30℃~150℃

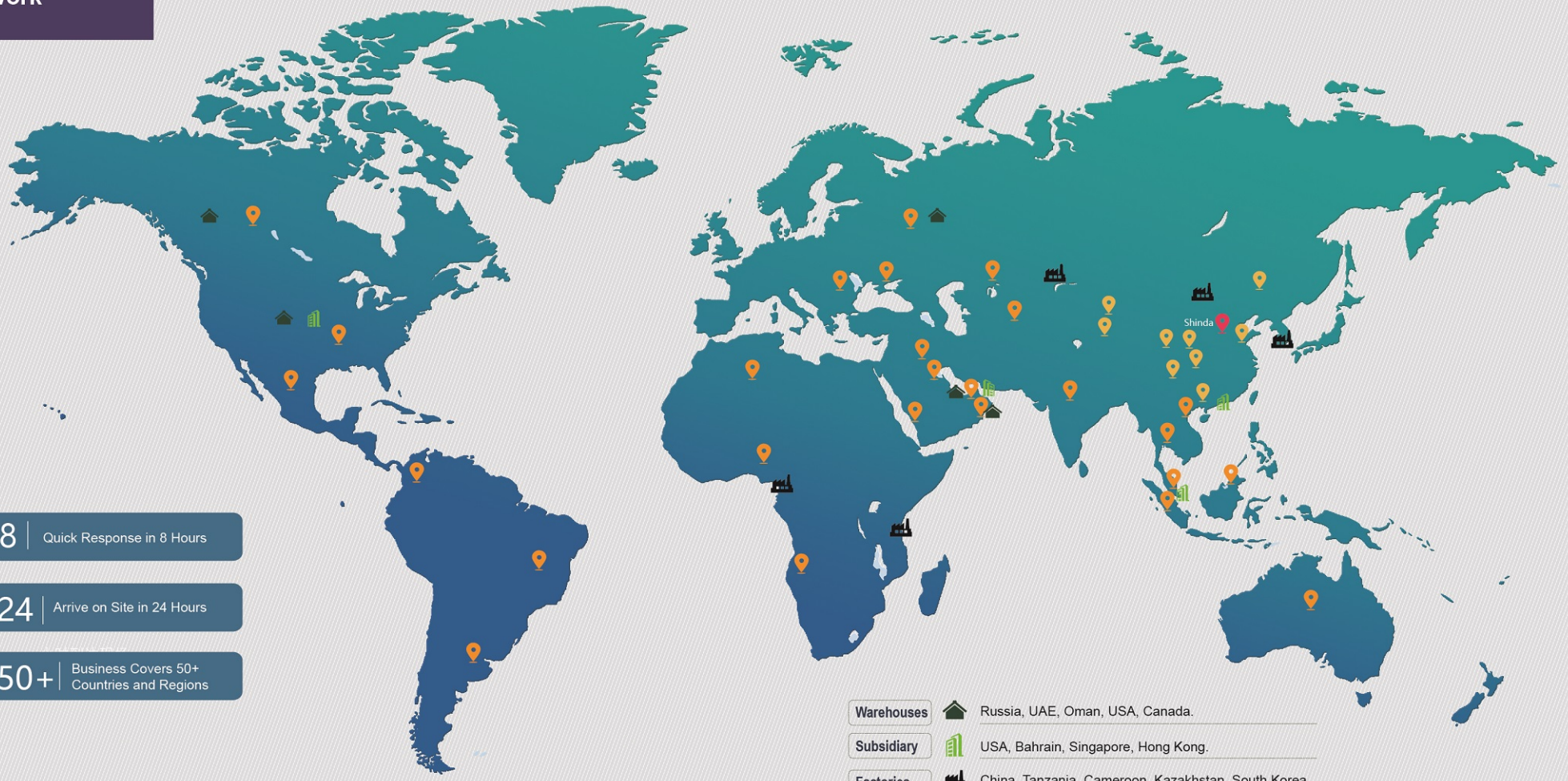
Technical Data of Flat Pack:

Shinda can freely combine capillary tubes and TECs to design and produce the Flat Pack according to different requirements. For the selection of the tubes, TEC and encapsulation materials, please refer to the technical data of the capillary tube, TEC and its encapsulation materials.

04

Global Marketing and Service Network

SHINDA has a comprehensive global marketing and service network, and its business has covered more than 50 countries and regions on six continents.



8 | Quick Response in 8 Hours

24 | Arrive on Site in 24 Hours

50+ | Business Covers 50+ Countries and Regions

Warehouses	Russia, UAE, Oman, USA, Canada.
Subsidiary	USA, Bahrain, Singapore, Hong Kong.
Factories	China, Tanzania, Cameroon, Kazakhstan, South Korea.