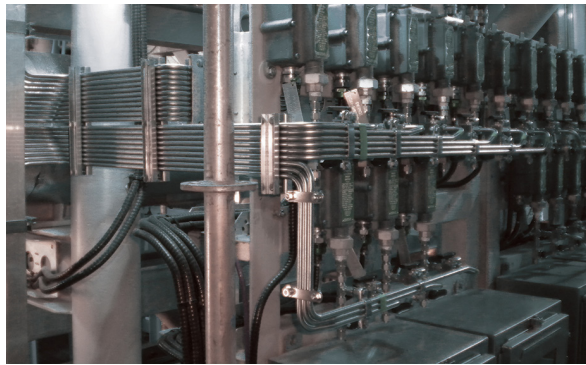


304 / 304L STAINLESS STEEL TUBING



Whether it be seamless or welded, domestic or import, 20 foot sticks or long length coils—stainless steel tubing is our core competency. It's not only in our name, it's at the heart of what we do. Due to its excellent general corrosion resistance, high strength to weight ratio, and remarkable ductility, stainless steel has become the predominant material choice for hydraulic and instrumentation tubing. The two grades of stainless steel tubing that are most commonplace are dual certified 304/L and 316/L. These commodity grades can be found in use in a multitude of applications within a wide variety of global industries.

PRODUCT SPECIFICATIONS

ASTM A269, ASTM A213/ ASME SA213 (SEAMLESS)
ASTM A269, ASTM A249/ ASME SA249 (WELDED)

Domestic tube is bright annealed. Imported tube is solution annealed and O.D. polished to a 320-grit finish.

SIZE RANGE

Outside Diameter (OD)	Wall Thickness
.125"–5.00"	.010"–.375"

CHEMICAL REQUIREMENTS

T304/L (UNS S30400/UNS S30403)
COMPOSITION %

ELEMENTS		UNS S30400	UNS S30403
C	Carbon	0.080 max	0.030 max
Mn	Manganese	2.00 max	2.00 max
P	Phosphorous	0.045 max	0.045 max
S	Sulfur	0.030 max	0.030 max
Si	Silicon	1.00 max	1.00 max
Cr	Chromium	18.0–20.0	18.0–20.0
Ni	Nickel	8.0–11.0	8.0–12.0

DIMENSIONAL TOLERANCES

OD	OD Tolerance	Wall Tolerance
≤ .500"	± .005"	± 10%
.500"–1.500" excl	± .005"	± 10%
1.500"–3.500" excl	± .010"	± 10%
3.500"–5.500" excl	± .015"	± 10%

MECHANICAL PROPERTIES

Yield Strength	30 ksi min
Tensile Strength	75 ksi min
Elongation (2" min)	35%
Hardness (Rockwell B Scale)	90 HRB max

OD	Wall	ID	Lbs/Ft	OD	Wall	ID	Lbs/Ft
1/8" (.125")	.010	.105	.0124	1" (1.000")	.020	.960	.2113
	.012	.101	.0146		.035	.930	.3642
	.016	.093	.0188		.049	.902	.5024
	.020	.085	.0226		.065	.870	.6553
	.028	.069	.0293		.083	.834	.8206
	.035	.055	.0340		.095	.810	.9270
5/32" (.156")	.020	.116	.0293		.109	.782	1.0470
					.120	.760	1.1390
3/16" (.188")	.010	.168	.0192		.134	.732	1.2510
	.016	.156	.0297		.156	.688	1.4200
	.020	.148	.0362		.188	.624	1.6460
	.028	.132	.0483		.250	.500	2.0220
	.035	.118	.0577	1-1/8" (1.125")	.035	1.055	.4110
	.049	.090	.0734		.049	1.027	.5680
1/4" (.250")	.010	.230	.0259		.065	.995	.7430
	.020	.210	.0496		.109	.907	1.1940
	.028	.194	.0670		.120	.885	1.3000
	.035	.180	.0811		.188	.749	1.8990
	.049	.152	.1062	1-1/4" (1.250")	.049	1.152	.6345
	.065	.120	.1297		.065	1.120	.8305
	.083	.084	.1494		.083	1.084	1.0440
	.095	.060	.1588		.095	1.060	1.1830
5/16" (.313")	.020	.273	.0632		.109	1.032	1.3410
	.028	.257	.0860		.120	1.010	1.4620
	.035	.243	.1049		.134	.982	1.6120
	.049	.215	.1395		.156	.938	1.8400
	.065	.183	.1738		.188	.874	2.1530
3/8" (.375")	.020	.335	.0766		.250	.750	2.6960
	.028	.319	.1048	1-3/8" (1.375")	.049	1.277	.7005
	.035	.305	.1283		.065	1.245	.9181
	.049	.277	.1722	1-1/2" (1.500")	.035	1.430	.5528
	.065	.245	.2173		.049	1.402	.7666
	.083	.209	.2613		.065	1.370	1.0060
	.095	.185	.2868		.083	1.334	1.2680
	.120	.135	.3299		.095	1.310	1.4390
1/2" (.500")	.020	.460	.1035		.109	1.282	1.6350
	.028	.444	.1425		.120	1.260	1.7850
	.035	.430	.1755		.134	1.232	1.9740
	.049	.402	.2383		.156	1.188	2.2610
	.065	.370	.3049		.188	1.124	2.6590
	.083	.334	.3732		.250	1.000	3.3690
	.095	.310	.4148	1-5/8" (1.625")	.065	1.495	1.0930
	.109	.282	.4595		.120	1.385	1.9470
	.120	.260	.4917	1-3/4" (1.750")	.065	1.620	1.1810
5/8" (.625")	.020	.585	.1305		.120	1.510	2.1090
	.028	.569	.1802	2" (2.000")	.049	1.902	1.0310
	.035	.555	.2226		.065	1.870	1.3560
	.049	.527	.3043		.083	1.834	1.7160
	.065	.495	.3925		.095	1.810	1.9510
	.083	.459	.4850		.109	1.782	2.2220
	.095	.435	.5429		.120	1.760	2.4320
	.120	.385	.6534		.134	1.732	2.6960
3/4" (.750")	.028	.694	.2180		.188	1.624	3.6730
	.035	.680	.2698		.250	1.500	4.7170
	.049	.652	.3704	2-1/4" (2.250")	.120	2.010	2.7560
	.065	.620	.4801	2-1/2" (2.500")	.065	2.370	1.7070
	.083	.584	.5969		.120	2.260	3.0790
	.095	.560	.6709		.065	2.870	2.0570
	.109	.532	.7533	3" (3.000")	.120	2.760	3.7260
	.120	.510	.8151		.188	2.624	5.7000
	.188	.374	1.1390		.250	2.500	7.4130
	.250	.250	1.3480	7/8" (.875")	.028	.819	.2557
					.035	.805	.3170
					.049	.777	.4364
					.065	.745	.5677
					.083	.709	.7088
					.095	.685	.7989
					.120	.635	.9768

FABRICATION

304/L stainless steel has excellent fabrication properties. Its malleability allows it to be easily formed for flaring, bending and coiling. Good machinability and the low sulfur content promotes excellent weldability in applications requiring it.