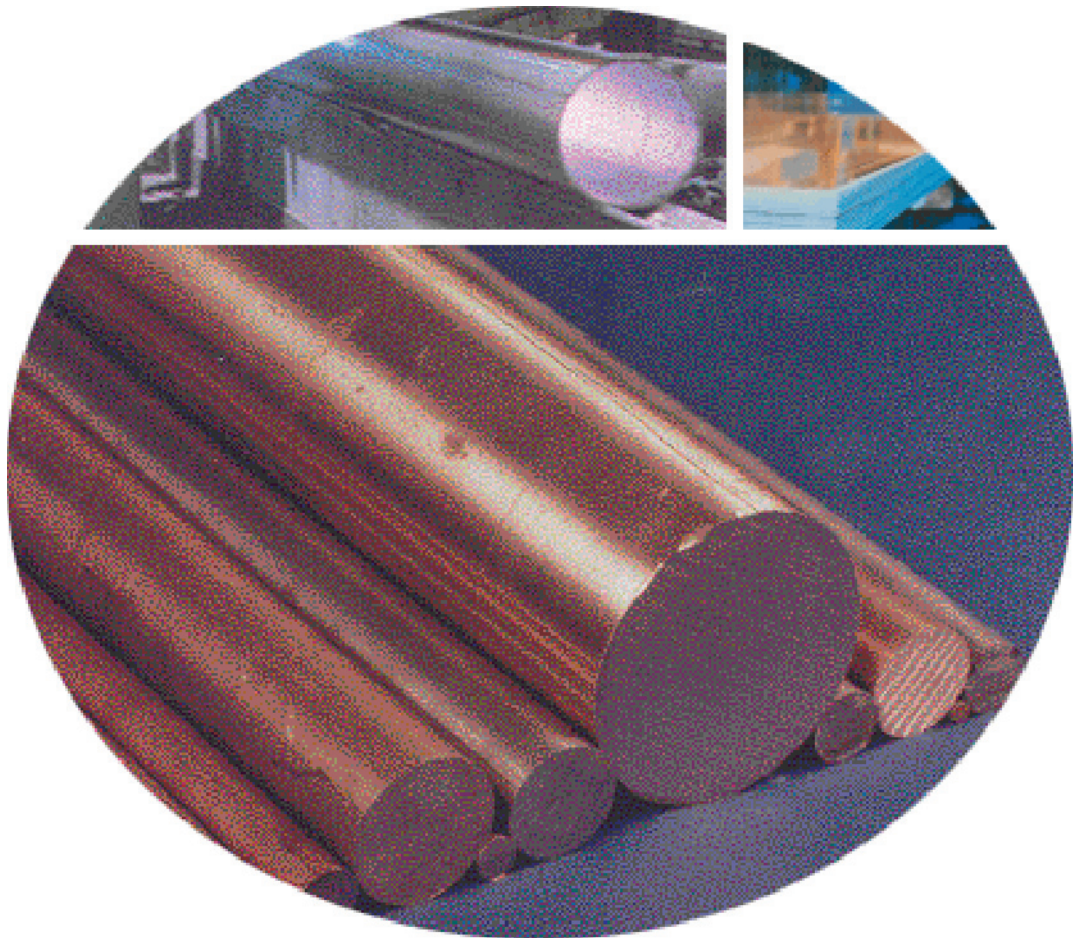


Copper-Nickel Mill Products

***Copper-Nickel Rod,
Sheet, Plate, and Tubing***

ALASKAN COPPER



History

When Alaskan Copper Works was founded as a marine coppersmithing company in 1913, one of its major activities was forming and brazing pipe and pipe fittings made from copper, brass and bronze, primarily for use in the Pacific Northwest shipbuilding industry.

Beginning in the 1920's, many of the area's growing process industries, such as pulp and paper, which had relied on wood stave and cast iron as corrosion resistant materials for their tanks and piping, welcomed the development of a new weldable alloy, silicon bronze. This alloy had special advantages in weight, cost and corrosion resistance. Alaskan Copper Works participated in the transition to this innovative metal and in the development of the welding techniques necessary for its proper fabrication.

In the 1930's, alloys with even better corrosion resistance, such as the austenitic stainless steels, became available and quickly came into general use not only in the pulp and paper industry but also in the other process industries then beginning to develop, such as



Alaskan Copper Works yesterday

petrochemical and food processing. Again, Alaskan Copper Works participated in the application of these new, advantageous materials and in the development of the welding and fabricating procedures required to maximize their usefulness.

Over the intervening years, improvements in our manufacturing capacities have seen the standard lengths of most pipe sizes increase from 4 feet to 10 feet and then to 20 feet. Die-formed smooth-flow

elbows began to be made in small sizes and gradually advanced to include larger sizes and many radii and wall thicknesses. Other advances over the years have led to tees being made with smooth-drawn outlets, the development of many available choices in the types of stub ends for different services and our manufacturing of pipe and fittings to advanced specifications and in "exotic" alloys, including our qualification to produce fittings for the nuclear power industry.

As a result, today's customers of the Stainless Products Division of Alaskan Copper Works benefit from the accumulated experience of one of the nation's largest organizations devoted exclusively to the manufacturing of pipe and pipe fittings in stainless steels, high-nickel alloys, duplex stainless alloys, copper-nickel alloys, aluminum, titanium, zirconium, copper and other weldable corrosion resistant alloys.



Alaskan Copper Works today.

Your Source for Corrosion Resistant Alloys

Alaskan Copper & Brass Company combines the largest and most diverse inventory of alloys in the Pacific Northwest with the very latest in material processing equipment. Our goal is to continue to be a true "service center" for our customers. We provide accurate, rapid quotation services and the ability to deliver material on time, preprocessed if necessary to our customer's exact specifications.

Northwest Owned and Operated

Alaskan Copper & Brass Company has been owned and operated by the same family since 1913. In our Seattle, Portland and Canadian distribution facilities, the emphasis has always been on personal service and long term relationships with our customers. Contract terms, credit terms and special stocking programs can be negotiated locally, with people who understand the Northwest market and its customers.

State of the Art Processing Equipment

Preprocessing of customer material has become more important every year due to more exacting quality requirements in most industries. Alaskan has responded to that demand by investing heavily in new processing equipment. Minimize scrap and save inventory costs! Let Alaskan do your material processing.

Customer Service our Specialty

Our sales staff is backed up by one of the most extensive information systems in the metals industry. Each salesperson has instantaneous access to all of our over 13,000 stocking items through a touch-input computer screen. Questions regarding the status of your order can be answered immediately, without a return call. We value your time as much as you do. This catalog covers sizes, weights and specifications of material for the commercial, military, marine, waste-water, petro-chemical, pharmaceutical, beverage and power industries. Call one of our informed and experienced salespeople for the rapid quotation response you expect in these competitive times.

ALASKAN COPPER

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ALASKAN COPPER PROCESSING CAPABILITIES

Coil Processing

Aluminum, brass, copper, copper-nickel and stainless steel coil stock from .010" through $\frac{3}{8}$ " thick and up to 96" wide are levelled and cut to length on Alaskan's custom-made line.

Shearing

Precision shearing from light gauge to $\frac{3}{8}$ " thick copper alloy material, $\frac{1}{2}$ " thick stainless steel and up to $\frac{3}{4}$ " thick aluminum. Sheet or plate can be sheared in 20 foot continuous lengths using an adjustable backgauge. Plate up to 1" thick can be sheared in lengths up to 48".

Sawing

Abrasive sawing of copper alloy material and stainless steel though 4" thick to close tolerance for rectangles and squares. Metal carbide sawing of aluminum plate through 6" thick. Plate up to 96" x 168" can be sawed in full lengths. Plate up to 12 foot long can be sawed with a +/- .005" inch tolerance.

Splice Welding

Simultaneous welding from both sides by automatic gas tungsten-arc process to achieve any required sheet size from stock material. The weld procedures and welder qualifications conform to Section IX of the ASME Boiler and Pressure Vessel Code. The resulting weld has minimum distortion and minimum reinforcement to allow easy forming such as rolling. Material up to 20 feet in length may be welded together.

Plasma Burning

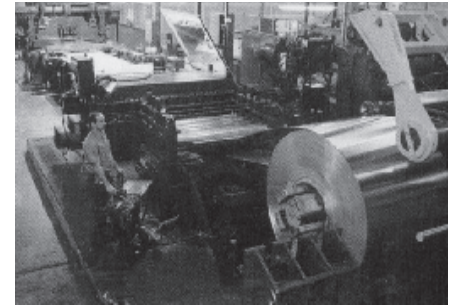
Computerized automatic plasma burning of any shape can be accomplished. All corrosion resistant alloys can be cut up to 3" thick. Up to 96" x 240" material can be accommodated. A water table is utilized to keep slag and the heat affected zone to a minimum.

Do-All Sawing

Automatic multiple cutting up to 16" by 16" bar or 16" diameter round bar, rod or tubing.

Custom Fabrication

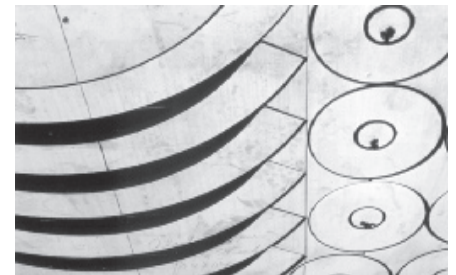
Custom fabrication of most industrial shapes can be performed by our affiliated company, ALASKAN COPPER WORKS. Work will be performed on a complete package basis including material or on a labor only basis utilizing the customer's material. The entire engineering and drafting department of ALASKAN COPPER WORKS is at your disposal, offering computerized design of heat transfer equipment, pressure vessels and tanks.



Alaskan's Cut-To-Length facility allows for efficient use of sheet and plate material.



Order the size that is needed, not just "standard" sizes.



Complex shapes are cut by computerized plasma cutting tables.



Aluminum wet pump pressure vessel used to transfer fish from a ship's hold to the dock.

Table Showing Fractions, Decimals, Centimeters & Millimeters

Fractional Inch	Decimal Inch	Centimeters	Millimeters	Millimeters	Centimeters	Decimal Inch	Fractional Inch
$\frac{1}{64}$	.0156	.0396	.3969	13.0969	1.310	.5156	$\frac{33}{64}$
$\frac{1}{32}$	.0312	.0792	.7938	13.4938	1.350	.5313	$\frac{17}{32}$
$\frac{3}{64}$	.0469	.1191	1.1906	13.8906	1.389	.5469	$\frac{35}{64}$
$\frac{1}{16}$	.0625	.1588	1.5875	14.2875	1.429	.5625	$\frac{9}{16}$
$\frac{5}{64}$	.0781	.1984	1.9844	14.6844	1.468	.5781	$\frac{37}{64}$
$\frac{3}{32}$	.0938	.2383	2.3813	15.0813	1.508	.5938	$\frac{19}{32}$
$\frac{7}{64}$	.1094	.2779	2.7781	15.4781	1.548	.6094	$\frac{39}{64}$
$\frac{1}{8}$	.125	.3175	3.1750	15.8750	1.588	.625	$\frac{5}{8}$
$\frac{9}{64}$	.1406	.3571	3.5719	16.2719	1.627	.6406	$\frac{41}{64}$
$\frac{5}{32}$	.1563	.3970	3.9688	16.6688	1.667	.6563	$\frac{21}{32}$
$\frac{11}{64}$	.1719	.4366	4.3656	17.0656	1.707	.6719	$\frac{43}{64}$
$\frac{3}{16}$	.1875	.4763	4.7625	17.4625	1.746	.6875	$\frac{11}{16}$
$\frac{13}{64}$	.2031	.5159	5.1594	17.8594	1.786	.7031	$\frac{45}{64}$
$\frac{7}{32}$	.2188	.5558	5.5563	18.2563	1.826	.7188	$\frac{23}{32}$
$\frac{15}{64}$	.2344	.5954	5.9531	18.6531	1.865	.7344	$\frac{47}{64}$
$\frac{1}{4}$	.250	.6350	6.3500	19.0500	1.905	.750	$\frac{3}{4}$
$\frac{17}{64}$	.2656	.6746	6.7469	19.4469	1.945	.7656	$\frac{49}{64}$
$\frac{9}{32}$	.2813	.7145	7.1438	19.8438	1.984	.7812	$\frac{25}{32}$
$\frac{19}{64}$	.2969	.7541	7.5406	20.2406	2.024	.7969	$\frac{51}{64}$
$\frac{5}{16}$	.3125	.7938	7.9375	20.6375	2.064	.8125	$\frac{13}{16}$
$\frac{21}{64}$	.3281	.8334	8.3344	21.0344	2.103	.8281	$\frac{53}{64}$
$\frac{11}{32}$	.3438	.8733	8.7313	21.4313	2.143	.8438	$\frac{27}{32}$
$\frac{23}{64}$	.3594	.9129	9.1281	21.8281	2.183	.8594	$\frac{55}{64}$
$\frac{3}{8}$	.375	.9525	9.5250	22.2250	2.223	.875	$\frac{7}{8}$
$\frac{25}{64}$	.3906	.9921	9.9219	22.6219	2.262	.8906	$\frac{57}{64}$
$\frac{13}{32}$	.4063	1.032	10.3188	23.0188	2.302	.9063	$\frac{29}{32}$
$\frac{27}{64}$	.4219	1.072	10.7156	23.4156	2.342	.9219	$\frac{59}{64}$
$\frac{7}{16}$	.4375	1.111	11.1125	23.8125	2.381	.9375	
$\frac{29}{64}$	.4531	1.151	11.5094	24.2094	2.421	.9531	$\frac{61}{64}$
$\frac{15}{32}$	.4688	1.191	11.9063	24.6063	2.461	.9688	$\frac{31}{32}$
$\frac{31}{64}$	.4844	1.230	12.3031	25.0031	2.500	.9844	$\frac{63}{64}$
$\frac{1}{2}$	.500	1.270	12.7000	25.4000	2.540	1.000	1

Copper-Nickel Mill Products

Comparison of Wall Thicknesses

Pipe and Tubing: ASTM and MIL-T-16420K 5

Copper-Nickel Rod

90-10 (C70600)..... 6

70-30 (C71500)..... 6

Copper-Nickel Sheet & Plate

90-10 (C70600)..... 7-8

70-30 (C71500)..... 9

Copper-Nickel Tubing

90-10 Seamless (C70600) 10

70-30 Seamless (C71500) 11-12

90-10 Welded (C70600)..... 13

70-30 Welded (C71500)..... 14

90-10 Condenser (C70600) 15

70-30 Condenser (C71500) 15

Arsenical Admiralty Condenser (C44300)..... 15

Copper-Nickel

Comparison of Wall Thicknesses

Pipe and Tubing: ASTM and MIL-T-16420K

Nominal Pipe Size	Outside Diameter	ASTM Nom. Wall		MIL-T-16420K Minimum Walls					
		Reg	Extra Strong	Class 50	Class 200	Class 700	Class 1650	Class 3300	Class 6000
1/8	.405	.062	.100					.058	.095
1/4	.540	.082	.123		.065	.065	.042	.072	.120
3/8	.675	.090	.127		.065	.072	.049	.095	.148
1/2	.840	.107	.149		.065	.072	.058	.120	.203
3/4	1.050	.114	.157		.065	.083	.083	.148	.238
1	1.310	.126	.182		.065	.095	.095	.180	.300
1 1/4	1.660	.146	.194		.072	.095	.120	.220	.380
1 1/2	1.900	.150	.203		.072	.109	.134	.250	.425
2	2 3/8	.156	.221		.083	.120	.165	.340	.520
2 1/2	2 7/8	.187	.280		.083	.134	.203	.380	
3	3 1/2	.219	.304		.095	.165	.250	.458	
3 1/2	4	.250	.321		.095	.180	.284		
4	4 1/2	.250	.341		.109	.203	.340		
5	5 9/16	.250	.375		.125	.220	.425		
6	6 5/8	.250	.437		.134	.259			
8	8 5/8	.312			.148	.340			
10	10 3/4			.134	.187	.380			
12	12 3/4			.156	.250	.454			
	14			.165	.250				
	16			.165	.250				
	18			.180	.250				
	20			.180	.250				
	22			.180	.250				
	24				.250				
	26								
	28								
	30			.250					
	32								
	34								
	36								
	38								
	40			.312					
	42								
	44								
	46								
	48								

Wall thicknesses for Class 200 size 14" through 24" are per Alaskan Standard. Alaskan will use the regular schedule thickness shown for all sizes not specified by a standard unless otherwise directed. Dimensions are in inches.

Copper-Nickel Rod

90-10 & 70-30 Rod

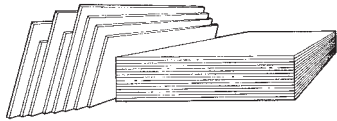


- UNS Designation Numbers: 90-10 (UNS C70600) & 70-30 (UNS C71500)
- Nominal Chemicals:
 - 90-10: Copper 88.6%, Nickel 10.0%, Iron 1.4%
 - 70-30: Copper 69.5%, Nickel 30.0%, Iron 0.5%
- Average Physical Properties:
 - 90-10: Tensile 40,000 psi, Yield 18,000 psi, Elongation 35%, Machinability = 20
 - 70-30: Tensile 45,000 psi, Yield 18,000 psi, Elongation 30%, Machinability = 20
- Specifications: MIL-C-15726F, ASTM B 151, Temper 060 Soft
- Stocked in random lengths
- Because of its excellent corrosion resistance, anti-fouling characteristics, resistance to erosion in turbulent water and strength under different conditions of temperature and pressure, 70-30 Copper-Nickel rod is regarded as one of the best materials for marine applications. It is used in petroleum and chemical industries where conditions of temperature and corrosion are too severe for other alloys. Widely used in marine applications where resistance to both corrosion and biofouling is important.

Diameter Size	Lbs/Ft	90-10	70-30
1/4	.200		143028 (H01 Temper)
3/8	.432		416934
1/2	.797	143303	143002
5/8	1.184		143010
3/4	1.790	143329	143036
7/8	2.390	143337	143044
1	3.190	143345	143052
1 1/8	3.899	143353	295697
1 1/4	5.000	143361	143060
1 3/8	6.000	143379	143078
1 1/2	7.000	143387	143086
1 3/4	9.760	143400	143094
2	12.750	143418	143109
2 1/4	16.130	143426	143125
2 3/8	18.000	143434	143133
2 1/2	20.000	143442	143141
2 3/4	24.000	143450	143159
3	28.670	143468	143167
3 1/4	32.928		500610
3 1/2	39.000	143264	143175
3 3/4	42.850		476099
4	51.000	142983	143183
4 1/2	64.500		143191
4 3/4	71.440		602488
5	80.040	405438	143206
5 1/4	86.000		595178
5 1/2	96.000		143214
6	115.021	283690	143222
7	156.000		143230
8	196.400	594423	143248
8 3/4	234.432		597510
9	258.000		143256
10	320.000		143272

Copper-Nickel Sheet & Plate

90-10 Copper-Nickel Sheet & Plate



- UNS Designation Number: 90-10 (UNS C70600)
- Nominal Chemicals: Copper 88.6%, Nickel 10.0%, Iron 1.4%
- Average Physical Properties: Tensile 40,000 psi, Yield 15,000 psi, Elongation 30%
- Machinability = 20
- Specifications: MIL-C15726F, ASTM B 171, ASME SB-171
- Widely used in marine applications where resistance to both corrosion and biofouling is important.

Thickness	Size	Lbs/Sq Ft	Lbs/Sheet	Part Number
.032	38 x 96	1.500	47.000	510306
.063	36 x 120	2.930	87.907	141474
.095 AVE	36 x 120	4.410	132.300	281096
.125	48 x 120	5.810	232.400	141505
.134 MIN	48 x 120	6.380	255.200	141513
.156 MIN	39.565 x 240	7.422	489.430	446832
.165 MIN	43.210 x 180	8.442	456.000	141555
.165 MIN	43.210 x 240	8.500	612.142	433960
.165 MIN	49.500 x 180	8.500	528.594	433295
.180 MIN	55.650 x 180	9.060	630.236	141602
.180 MIN	55.650 x 240	9.060	840.315	433978
.180 MIN	61.900 x 240	9.774	1008.350	433994
.180 MIN	74.840 x 240	9.000	1122.599	434005
.1875 MIN	48 x 96	9.030	288.960	254926
.1875 AVE	48 x 120	9.030	361.200	298182
.1875 MIN	74.840 x 180	9.030	844.757	226012
.250 AVE	48 x 96	12.000	384.000	141636
.250 AVE	74.500 x 180	12.000	1117.500	433300
.250 MIN	43.100 x 180	12.568	674.750	259691
.250 MIN	43.100 x 240	12.000	861.999	435645
.250 MIN	49.180 x 180	12.000	736.875	141660
.250 MIN	49.180 x 240	12.000	983.599	435653
.250 MIN	55.430 x 240	12.394	1144.999	433986
.250	61.680 x 240	12.000	1233.600	141686
.250 AVE	74.500 x 240	12.000	1490.000	561852
.312 MIN	61.850 x 240	15.900	1639.019	431578
.3125 MIN	44.420 x 240	15.770	1956.005	483313
.3125 AVE	48 x 96	14.790	473.280	141725
.3125 AVE	48 x 120	14.750	590.000	134257

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

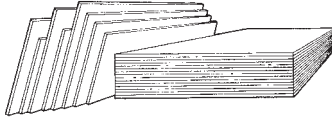
Copper-Nickel Sheet & Plate

90-10 Copper-Nickel Sheet & Plate (continued)

Thickness	Size	Lbs/Sq Ft	Lbs/Sheet	Part Number
.3125 MIN	74.420 x 120	15.790	978.003	404385
.375 AVE	48 x 96	18.000	576.000	141791
.375 AVE	48 x 96	18.000	576.000	555534
.375 AVE	38.800 x 120	18.000	582.000	141775
.375 AVE	42.800 x 120	18.000	642.000	141783
.375 AVE	49.100 x 120	18.000	736.500	141806
.375 AVE	55.400 x 120	18.000	831.000	141822
.375 AVE	61.650 x 120	18.000	924.750	141814
.375 AVE	74.250 x 120	18.000	1113.750	420624
.375 AVE	80 x 120	18.000	1200.000	141848
.4375 AVE	48 x 96	20.560	657.920	420072
.500 AVE	48 x 96	23.670	757.440	141864
.500 AVE	80 x 120	24.000	1600.000	141880
.625 AVE	76.500 x 120	30.920	1971.150	141903
.750 AVE	48 x 96	36.790	1177.280	141911
.750 AVE	48 x 96	34.880	1116.160	510453
.750 AVE	80 x 120	37.300	2486.664	141937
1.000 AVE	48 x 96	46.510	1488.320	420496
1.000 AVE	48 x 96	46.510	1488.320	583236
1.000 AVE	51.500 x 120	49.788	2136.750	141953
1.000 AVE	60 x 120	48.000	2400.000	276279
1.250 AVE	60 x 96	60.470	2400.000	141961
1.500 AVE	80 x 120	71.050	4736.667	235516
2.000 AVE	48 x 96	96.000	3072.000	510500
2.500 AVE	36 x 72	116.277	2093.000	142006
3.000 AVE	60 x 60	144.860	3621.500	142014
4.000 AVE	60 x 60	191.380	4784.500	142022

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

70-30 Copper-Nickel Sheet & Plate



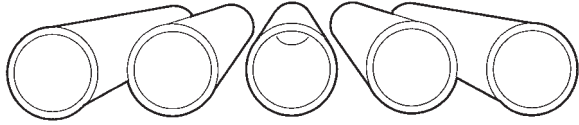
- UNS Designation Number: 70-30 (UNS C71500)
- Nominal Chemicals: Copper 69.5%, Nickel 30.0%, Iron 0.5%
- Average Physical Properties: Tensile 50,000 psi, Yield 20,000 psi, Elongation 30%
- Machinability = 20
- Specifications: MIL-C-15726F, ASTM B 171, ASME SB-171
- Widely used in marine applications where resistance to both corrosion and biofouling is important.

Thickness	Size	Lbs/Sq Ft	Lbs/Sheet	Part Number
.063 AVE	32 x 120	3.000	79.999	512968
.095	24 x 144	4.417	106.000	141115
.125 AVE	48 x 120	5.814	232.560	141123
.134 MIN	48 x 120	6.930	277.200	141131
.165 MIN	43.210 x 144	8.449	365.000	280074
.165 MIN	49.500 x 180	8.500	528.594	491112
.1875 MIN	48 x 120	9.000	360.000	488428
.1875 MIN	49.750 x 180	9.425	586.117	141157
.250 MIN	49.180 x 180	12.650	777.659	250126
.250 MIN	55.430 x 180	12.000	831.450	141199
.250 MIN	61.680 x 180	12.777	985.107	467765
.250 MIN	74.500 x 180	12.777	1189.858	467773
.313 AVE	65 x 120	14.560	788.667	509143
.375 AVE	48 x 96	18.000	576.000	141220
.375 AVE	49.100 x 120	18.000	736.499	141246
.375 AVE	55.375 x 120	18.000	830.620	276261
.375 AVE	61.650 x 120	18.000	924.750	226004
.500	48 x 120	24.000	960.000	141270
.625 AVE	76.500 x 144	30.000	2295.000	259405
.750 AVE	72 x 120	36.000	2160.000	141296
1.000 AVE	48 x 96	48.400	1548.800	510550
1.000 AVE	80 x 120	48.400	3226.663	141327
1.250 AVE	80 x 120	60.000	3999.996	141343
1.375 AVE	48 x 98	64.800	2116.796	141351
1.500 AVE	50 x 120	72.000	3000.000	141369
1.750 AVE	49 x 98	81.626	2722.000	141377
2.000	50 x 127.5	94.980	4205.000	271326
2.500 AVE	36 x 96	119.000	2856.000	141416
3.000 AVE	52 x 72	144.000	3744.000	235427
4.000 AVE	37 x 49	188.000	2366.958	141458
6.250 AVE	12.125 x 76.5	300.000	1932.420	141466

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

Copper-Nickel Tubing

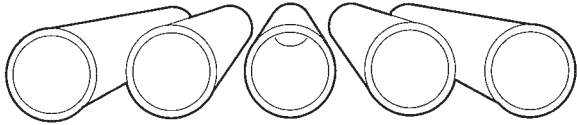
90-10 Seamless Tubing, Annealed Temper



- UNS Designation Number: 90-10 (UNS C70600)
- Nominal Chemicals: Copper 88.6%, Nickel 10.0%, Iron 1.4%
- Average Physical Properties: Tensile 45,000 psi, Yield 18,000 psi, Elongation 35%
- Specifications: MIL-T-16420K, Type I, Grade 1, ASTM B 466, Annealed
- Stocked in 20 foot standard lengths
- Widely used in marine applications where resistance to both corrosion and biofouling is important.

Nominal Pipe Size	Class 200 MIL-T-16420K				Part Number	ASTM B 466 Regular Wall			
	OD	Minimum Wall	Lbs/Ft	Lbs/Ln		Nominal Wall	Lbs/Ft	Lbs/Ln	Part Number
	.250	.035	.101	2.020	134192	.049	.126	2.520	152467
	.375	.035	.165	3.300	152483				
	.375	.049	.200		152506				
	.500	.035	.200		152548				
1/4	.540	.065	.400		139998	.082	.550		140177
1/4	.540					.123	.625	7.500	262351
	.625					.049	.368	6.072	564143
	.625					.049	.368	9.231	230752
	.625					.065	.456	11.436	260155
3/8	.675	.065	.500		140004	.091	.630		140193
1/2	.840	.065	.700		140012	.107	.970	19.400	140185
1/2	.840	.065	.675	13.500	603183				
1/2	.840	.090	.888	17.760	563147				
3/4	1.050	.065	.900		140020	.114	1.300	26.000	140216
1	1.315	.065	1.090	21.800	140038	.126	1.930	38.600	140208
1	1.315	.065	1.090	21.800	603191				
1	1.315	.082	1.321	26.420	596938				
1 1/4	1.660	.072	1.530	30.600	140046	.146	2.692	53.840	140224
1 1/4	1.660	.072	1.530	30.600	603206				
1 1/4	1.660	.082	1.702	34.040	432663				
1 1/2	1.900	.072	1.800		140054	.150	3.110	62.200	140232
1 1/2	1.900	.072	1.760	35.200	603230				
2	2.375	.083	2.600		140062	.156	4.200	84.000	140240
2 1/2	2.875	.083	3.000		140070	.187	6.600	132.000	140258
2 1/2	2.875	.083	3.100	62.000	603248				
2 1/2	2.875	.100	3.649	72.980	512413				
3	3.500	.095	4.000		140088	.219	8.630	172.600	140389
3 1/2	4.000	.095	4.970	99.400	140096				
4	4.500	.109	6.410	128.200	140101	.250	12.938	232.884	140397
4	4.500	.109	6.410	128.200	603264				
4 1/2	5.000	.120	8.000		140119				
5	5.563	.125	9.000		140127	.250	16.830	201.960	152580
6	6.625	.134	12.000		513142	.250	19.400	232.800	152603
7	7.625	.140	13.000		152564				
8	8.625	.148-.151	17.000		140143	.312	31.000	310.000	152629
10	10.750	.187	26.500		140151				
12	12.750	.250	42.000		140169				

70-30 Seamless Tubing, Annealed Temper



- UNS Designation Number: 70-30 (UNS C71500)
- Nominal Chemicals: Copper 69.5%, Nickel 30.0%, Iron 0.5%
- Average Physical Properties: Tensile 55,000 psi, Yield 20,000 psi, Elongation 35%
- Specifications: MIL-T-16420K, Type I, Grade 1 or 2, Annealed
- Stocked in 20 foot standard lengths
- 70-30 Copper-Nickel tubing has excellent resistance to impingement attack and other forms of corrosion in sea water. These tubes maintain their strength at elevated temperatures better than the brasses or copper. They are widely used in evaporators, feed water heaters, refinery and chemical equipment.

Nominal Pipe Size	Outside Diameter	Class	Wall Thickness	Lbs/Ft	Lbs/Length	Part Number
	.250	200	.035	.101	2.020	152302
	.250	3300	.035	.101	2.020	140818
	.250	6000	.058	.150	3.000	140999
	.375	Special	.035	.145	2.900	140402
	.375	3300	.049	.213	4.260	140834
	.375	6000	.083	.325	6.500	141000
$\frac{1}{8}$	.405	3300	.058	.269	5.380	140842
$\frac{1}{8}$	.405	6000	.095	.395	9.900	141018
	.500	200	.035	.218	4.360	140703
	.500	Special	.049	.283	5.660	140711
	.500	700	.065	.378	7.560	140559
	.500	3300	.072	.394	7.880	140850
	.500	6000	.120	.611	12.220	141026
$\frac{1}{4}$	.540	200	.065	.414	8.280	152132
$\frac{1}{4}$	.540	700	.065	.414	8.280	140567
$\frac{1}{4}$	.540	3300	.072	.451	9.020	140868
$\frac{1}{4}$	.540	6000	.120	.675	13.500	141034
$\frac{3}{8}$	.675	200	.065	.531	10.620	140410
$\frac{3}{8}$	.675	700	.072	.582	11.640	140575
$\frac{3}{8}$	.675	3300	.095	.738	14.760	140876
$\frac{3}{8}$	.675	6000	.148-.151	1.040	20.800	141042
	.750	1650	.058	.523	10.460	235003
	.750	3300	.109	.936	22.464	140884
$\frac{1}{2}$	.840	200	.065	.675	13.500	140428
$\frac{1}{2}$	.840	700	.072	.740	14.800	140583
$\frac{1}{2}$	.840	3300	.120	1.150	23.000	140892
$\frac{1}{2}$	.840	6000	.203	1.730	34.600	141050
	1.000	3300	.134	1.550	31.000	140907
	1.000	6000	.220	2.29	45.800	271300
$\frac{3}{4}$	1.050	200	.065	.858	17.160	140436
$\frac{3}{4}$	1.050	700	.083	1.070	21.400	140591
$\frac{3}{4}$	1.050	3300	.148-.151	1.790	35.800	140915
$\frac{3}{4}$	1.050	6000	.238	2.590	51.800	141068

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

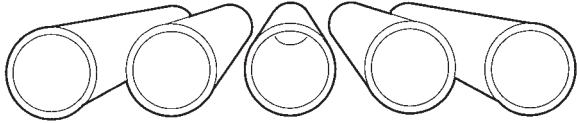
Copper-Nickel Tubing

70-30 Seamless Tubing, Annealed Temper (continued)

Nominal Pipe Size	Outside Diameter	Class	Wall Thickness	Lbs/Ft	Lbs/Length	Part Number
1	1.315	200	.065	1.090	21.800	140444
1	1.315	700	.095	1.550	31.000	140606
1	1.315	1650	.095	1.550	31.000	417778
1	1.315	3300	.180	2.740	49.320	140931
1	1.315	6000	.300	3.710	74.200	231122
1 1/4	1.660	200	.072	1.530	30.600	140452
1 1/4	1.660	700	.095	1.990	39.800	140614
1 1/4	1.660	1650	.120	2.480	49.600	140753
1 1/4	1.660	3300	.220	4.250	85.000	140949
1 1/4	1.660	6000	.380	6.329	126.580	253857
1 1/2	1.900	200	.072	1.760	35.200	140460
1 1/2	1.900	700	.109	2.620	52.400	140622
1 1/2	1.900	1650	.134	3.170	63.400	140761
1 1/2	1.900	3300	.250	5.520	110.400	140957
1 1/2	1.900	6000	.425	8.390	125.850	152378
2	2.375	200	.083	2.550	61.200	140478
2	2.375	700	.120	3.660	72.600	140630
2	2.375	1650	.165	4.793	95.860	269515
2	2.375	3300	.340	9.270	185.400	140965
2 1/2	2.875	200	.083	3.100	62.000	140486
2 1/2	2.875	700	.134	4.920	98.400	140648
2 1/2	2.875	1650	.203	7.260	145.200	140787
2 1/2	2.875	3300	.380	12.700	254.000	140973
3	3.500	200	.095	4.330	86.600	140494
3	3.500	700	.165	7.370	147.400	140656
3	3.500	1650	.250	10.900	218.000	140795
3	3.500	3300	.458	18.700	336.600	140981
3 1/2	4.000	200	.095	4.970	124.250	140509
3 1/2	4.000	700	.180	9.210	184.200	140664
3 1/2	4.000	1650	.284	13.950	237.150	231091
4	4.500	200	.109	6.410	153.840	140517
4	4.500	700	.203	11.700	234.000	140672
4	4.500	1650	.340	18.900	378.000	140800
4 1/2	5.000	700	.203	13.100	131.000	140680
5	5.563	200	.125	9.110	227.775	140525
5	5.563	700	.220	15.500	310.000	140698
6	6.625	200	.134	11.700	234.000	140533
6	6.625	700	.259	22.100	353.600	226850
8	8.625	200	.148	16.800	336.000	140541
8	8.625	700	.340	36.200	289.600	231106
10	10.750	200	.187	25.770	515.400	417728
12	12.750	200	.250	40.250	805.000	417126

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

90-10 Welded Tubing, Annealed Temper



- UNS Designation Number: 90-10 (UNS C70600)
- Nominal Chemicals: Copper 88.6%, Nickel 10.0%, Iron 1.4%
- Average Physical Properties: Tensile 40,000 psi, Yield 15,000 psi, Elongation 30%
- Specifications: MIL-T-16420K, Type II, Grade 1 or 2, ASTM B 467, ASTM B 608, Annealed
- Normally supplied in 15 foot lengths
- Widely used in marine applications where resistance to both corrosion and biofouling is important.

Nominal Pipe Size	Class 200 MIL-T-16420K				Class 50 MIL-T-16420K		
	OD	Minimum Wall	Lbs/Ft	Part Number	Minimum Wall	Lbs/Ft	Part Number
5	5.563	.125	9.000	140266			
6	6.625	.134	11.500	140274			
8	8.625	.151	16.000	433910			
9	9.625	.187	23.000	235508			
10	10.750	.187	25.000	299421	.134	19.000	235493
12	12.750	.250	40.000	140305	.156	26.220	235485
14	14.000	.250	45.000	436015	.165	30.000	434233
16	16.000	.250	51.000	152700	.165	34.980	152687
18	18.000	.250	58.000	439047	.180	42.000	235469
20	20.000	.250	68.000	281151	.180	47.530	434241
24	24.000	.250	80.000	434217	.180	57.400	438588

Note: 90-10 welded tubing is manufactured from raw material inventory on hand and is available thru 54" OD.

Wall thicknesses for Class 200 sizes 14"-24" are per Alaskan standard.

Regular thickness per ASTM B 466 for sizes through 6". For 8" and larger, wall thicknesses are Sch 40s per ANSI B 36.19.

Dimensions are in inches. All weights are approximate.

Sizes not shown may be available upon request.

Copper-Nickel Tubing

70-30 Welded Tubing, Annealed Temper



- UNS Designation Number: 70-30 (UNS C71500)
- Nominal Chemicals: Copper 69.5%, Nickel 30.0%, Iron 0.5%
- Average Physical Properties: Tensile 55,000 psi, Yield 20,000 psi, Elongation 30%
- Specifications: MIL-T-16420K, Type II, Grade 1 or Grade 2, ASTM B 467, ASTM B 608, Annealed
- Normally supplied in 15 foot lengths
- 70-30 Copper-Nickel tubing has excellent resistance to impingement attack and other forms of corrosion in sea water. These tubes maintain their strength at elevated temperatures better than the brasses or copper. They are widely used in evaporators, feed water heaters, refinery and chemical equipment.

Class 200 MIL-T-16420K					
Nominal Pipe Size	OD	Minimum Wall	Lbs/Ft	Lbs/Length	Part Number
5	5.563	.125	9.000	180.000	140347
6	6.625	.134	11.500	230.000	140339
8	8.625	.148-.151	16.000	240.000	140355
10	10.750	.187	25.000	375.000	140363
12	12.750	.250	40.000	600.000	140371
14	14.000	.250	45.000	675.000	226876
16	16.000	.250	51.000	765.000	277631
20	20.000	.250	67.000	1005.000	467723
20	20.000	.250	61.000	1220.000	595314
22	22.000	.250	70.000	1050.000	467731
24	24.000	.250	80.000	1600.000	467749

Note: 70-30 welded tubing is manufactured from raw material inventory on hand and is available thru 54" OD.

Wall thicknesses for Class 200 sizes 14"-24" are per Alaskan standard.

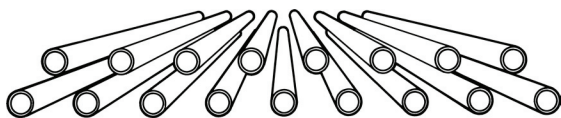
Regular thickness per ASTM B 466 for sizes through 6". For 8" and larger, wall thicknesses are Sch 40s per ANSI B 36.19.

Dimensions are in inches. All weights are approximate.

Sizes not shown may be available upon request.

Seamless Condenser Tubing

90-10 & 70-30 Copper-Nickel Seamless Condenser Tubing, Annealed Temper



- UNS Designation Numbers: 90-10 (UNS C70600) and 70-30 (UNSC71500)
- Nominal Chemicals:
 - 90-10: Copper 88.6%, Nickel 10.0%, Iron 1.4%
 - 70-30: Copper 69.5%, Nickel 30.0%, Iron 0.5%
- Average Physical Properties:
 - 90-10: Tensile 45,000 psi, Yield 18,000 psi
 - 70-30: Tensile 60,000 psi, Yield 20,000 psi
- Specifications: MIL-T-15005F, ASME SB-111, ASTM B 111, Temper 061 (Annealed)
- Stocked lengths to 26 foot
- Copper-Nickel alloys are used in industrial condensers, heat exchangers, and evaporating equipment where their resistance to the corrosive action of a wide range of chemicals leads to durability and protection against contamination. These tubes maintain their strength at elevated temperatures better than the brasses or copper. 70-30 Copper-Nickel is preferred to 90-10 Copper-Nickel where corrosion and temperature conditions are more severe.

OD	Minimum Wall	Gauge	Lbs/Ft	90-10 Part Number	70-30 Part Number
1/4	.035	20	.101	134192	152302
1/4	.049	18	.126	152467	286818
3/8	.035	20	.165	152483	140402
3/8	.049	18	.215	152506	
1/2	.035	20	.218	152548	140703
1/2	.049	18	.283		140711
5/8	.049	18	.368	230744	230613
5/8	.065	16	.456	260155	230663
3/4	.049	18	.430	230809	230689
3/4	.065	16	.558	230833	230710
1	.049	18	.584		230728
1	.065	16	.741	230867	

Arsenical Admiralty Brass Seamless Condenser Tubing

- UNS Designation Number: UNS C44300
- Nominal Chemicals: Copper 71%, Zinc 27.96%, Tin 1.00%, Arsenic 0.04%
- Average Physical Properties: Tensile 52,000 psi, Yield 20,000 psi
- Specifications: ASTM B 111, Temper 061 (Annealed)
- Stock lengths to 26 foot
- Arsenical Admiralty brass condenser tube is a standard condenser and heat exchanger tube, offering good corrosion resistance in fresh and salt water (at moderate velocities) and exceptional heat transfer characteristics.

OD	Minimum Wall	Gauge	Lbs/Ft	Part Number
3/8	.035	20	.147	230338
3/8	.049	18	.191	230354
1/2	.049	18	.265	230370
5/8	.049	18	.352	230396
5/8	.065	16	.434	225993
3/4	.049	18	.410	230419
3/4	.065	16	.531	230435
1	.065	16	.741	230451

Dimensions are in inches. All weights are approximate.
 Sizes not shown may be available upon request.

Notes

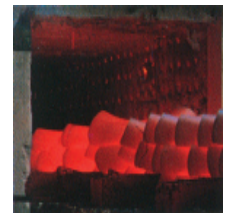
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