COPPER TUBES

TYPE K

RATED INTERNAL WORKING PRESSURE (PSIG)								
O.D.	NOM	WT/FT	FT/BNDL	WALL	150°F	200°F	300°F	400°F
.375	1/4	.145	500	.035	913	860	842	537
.500	3/8	.269	500	.049	960	904	885	565
.625	1/2	.344	500	.049	758	713	698	446
.750	5/8	.418	200	.049	626	589	577	368
.875	3/4	.641	200	.065	724	682	668	426
1.125	1	.839	100	.065	557	524	513	327
1.375	1-1/4	1.04	100	.065	452	425	416	266
1.625	1-1/2	1.36	100	.072	420	396	387	247
2.125	2	2.06		.083	370	348	341	217
2.625	2-1/2	2.93		.095	338	319	312	199
3.125	3	4.00		.109	328	308	302	193
3.625	3-1/2	5.12		.120	311	293	286	183
4.125	4	6.51		.134	306	288	282	180
5.125	5	9.67		.160	293	276	270	172
6.125	6	13.90		.192	295	277	271	173
8.125	8	25.90		.271	314	295	289	184

TYPE L & ACR

RATED INTERNAL WORKING PRESSURE (PSIG)								
O.D.	NOM	WT/FT	FT/BNDL	WALL	150°F	200°F	300°F	400°F
.375	1/4	.126	500	.030	775	729	714	456
.500	3/8	.198	500	.035	662	623	610	389
.625	1/2	.285	500	.040	613	577	565	361
.750	5/8	.362	200	.042	537	505	495	316
.875	3/4	.455	200	.045	495	466	456	291
1.125	1	.655	100	.050	420	395	387	247
1.375	1-1/4	.884	100	.055	373	351	344	219
1.625	1-1/2	1.14	100	.060	347	327	320	204
2.125	2	1.75		.070	309	291	285	182
2.625	2-1/2	2.48		.080	285	269	263	168
3.125	3	3.33		.190	270	254	248	159
3.625	3-1/2	4.29		.100	258	243	238	152
4.125	4	5.38		.110	249	235	230	147
5.125	5	7.61		.125	229	215	211	135
6.125	6	10.20		.140	213	201	196	125
8.125	8	19.30		.200	230	216	212	135

TYPE M

RATED INTERNAL WORKING PRESSURE (PSIG)								
O.D.	NOM	WT/FT	FT/BNDL	WALL	150°F	200°F	300°F	400°F
.500	3/8	.145	500	.025	485	456	447	285
.625	1/2	.204	500	.028	420	395	387	247
.875	3/4	.328	200	.032	346	326	319	204
1.125	1	.465	100	.035	286	270	264	169
1.375	1-1/4	.682	100	.042	287	271	265	169
1.625	1-1/2	.940	100	.049	282	265	259	166
2.125	2	1.46	100	.058	254	239	234	149
2.625	2-1/2	2.03		.065	233	219	215	137
3.125	3	2.68		.072	215	203	199	127
3.625	3-1/2	3.58		.083	214	202	197	126
4.125	4	4.66		.095	213	201	197	126
5.125	5	6.66		.109	198	186	182	116
6.125	6	8.92		.122	186	175	171	109
8.125	8	16.50		.170	195	183	180	115

COPPER TUBES

DWV

RATED INTERNAL WORKING PRESSURE (PSIG)								
O.D.	NOM	WT/FT	FT/BNDL	WALL	150°F	200°F	300°F	400°F
1.375	1-1/4	.650	100	.040	280	264	258	165
1.625	1-1/2	.809	100	.042	249	235	230	147
2.125	2	1.07		.042	185	174	170	109
3.125	3	1.69		.045	135	127	125	80
4.125	4	2.87		.058	127	120	117	75
5.125	5	4.43		.072	129	121	119	76
6.125	6	6.10		.083	126	119	116	74

REFRIGERATION SERVICE TUBE

SHIPPING INFORMATION										
SIZE		RATED INTERNAL WORKING PRESSURE (PSIG)				50 FT.			100 FT.	
O.D.	WALL	150°F	250°F	350°F	400°F	COIL DIA	WT/COIL	COIL/MSTR	COL DIA	WT/COIL
1/8	.030	2613	2459	2049	1537	10-3/4	1.74	10	17	3.48
3/16	.030	1645	1548	1290	968	11-3/4	2.88	10	18-5/8	5.76
1/4	.030	1195	1125	938	703	13-1/2	4.02	10	18-5/8	8.04
5/16	.032	1017	957	798	598	15-1/2	5.45	10	19-7/8	10.90
3/8	.032	836	787	656	492	17	6.70	10	21-7/8	13.40
1/2	.032	618	581	485	363	19-7/8	9.10	5	25	18.20
5/8	.035	525	494	412	309	21-1/4	12.55	5	25-1/4	25.10
3/4	.035	435	409	341	256	23-1/4	15.25	3	29	30.50
7/8	.045	495	466	388	291	27-1/4	22.75	3	32-1/4	45.50
1-1/8	.050	420	395	330	247	34-1/4	32.75	—	38-1/2	65.50
1-3/8	.055	373	351	293	219	45	44.20	—	49	88.40
1-5/8	.060	347	327	272	204	45	57.00	—	49	114.00

TECHNICAL DATA

Values of allowable internal working pressure for copper tube in service are based on the formula from ANSI B31, Standard Code for Pressure Piping:

$$P = \frac{2\,s\,tm}{D - 0.8\,tm}$$

P = Allowable pressure
Allowable stress
Wall thickness
Diameter

@ 150°F S = 5100 PSIG annealed
@ 200°F S = 4800 PSIG annealed
@ 300°F S = 4700 PSIG annealed
@ 400°F S = 3000 PSIG annealed

All ratings listed for types K, L, M, DWV and refrigeration service tube in the preceding charts are calculated for tube in the annealed condition. These values should be used when soldering, brazing or welding is employed for joining components in a system. While the ratings for hard drawn tube are substantially higher, they should only be used for systems using properly designed flare or compression mechanical joints, since joining by any heating process might anneal (soften) the tube.

In designing a system, careful consideration should also be given to joint ratings as well as those of the components.

TEMPERATURE-PRESSURE RATING OF SOLDERED JOINTS

		STANDARD TUBE SIZE, TYPES K, L, AND M				
	SERVICE TEMPERATURE	WATER AND NON-CORROSIVE LIQUIDS AND GASES				SATURATED STEAM
Alloy USED FOR JOINTS	°F	1/4–1	1-1/4–2	2-1/2–2	5–8	ALL
	100	500	400	300	270	—
95 - 5	150	400	350	275	250	—
Tin-Antimony	200	300	250	200	180	—
Solder (a)	250	200	175	150	135	15
Brazing Alloys	100-150-200	(b)	(b)	(b)	(b)	—
(Melting at or	250	300	210	170	150	—
above 1000°F	350	270	190	150	150	120

NOTE: Ratings are those given in ASME/ANSI Standard B16.22 "Wrought Copper and Copper Alloy Solder Joint Pressure Fittings" and ANSI B 16.18 "Cast Copper Alloy Solder Joint Pressure Fittings."
(a) Solder alloys are covered by ASTM Standard Specification B32.
(b) Rated internal pressure is that of tube or fittings being joined (whichever is less).
Note: Safe Drinking Water Act Amendment of 1986 prohibits the use of any solder having a lead content in excess of 0.2% for potable water systems.