Pressure Rating of Copper Pipes and Tubes

Pipe - Copper - ASTM B280 - Type K

O.D.	NOMINAL	WALL	I.D	MAX. PRESSURE (IN PSIG) at 150˚F
0,375'' (3/8'')	1/4''	0,035''	0,305''	913
0,500'' (1/2'')	3/8''	0,049''	0,402''	960
0,625'' (5/8'')	1/2''	0,049''	0,527''	758
0,750'' (3/4'')	5/8''	0,049''	0,652''	626
0,875'' (7/8'')	3/4''	0,065''	0,745''	724
1,125'' (1-1/8'')	1''	0,065''	0,995''	557
1,375'' (1-3/8'')	1-1/4''	0,065''	1,245''	452
1,625'' (1-5/8'')	1-1/2''	0,072''	1,481''	420
2,125'' (2-1/8'')	2''	0,083''	1,959''	370
2,625'' (2-5/8'')	2-1/2''	0,095''	2,435''	338
3,125'' (3-1/8'')	3''	0,109''	2,907''	328
3,625'' (3-5/8'')	3-1/2''	0,120''	3,385''	311
4,125'' (4-1/8'')	4''	0,134	3,857''	306

Pipe - Copper - ASTM B280 - Type L & ACR

O.D.	NOMINAL	WALL	I.D	MAX. PRESSURE (IN PSIG) at 150˚F
0,375'' (3/8'')	1/4''	0,030''	0,315''	775
0,500'' (1/2'')	3/8''	0,035''	0,430''	662
0,625'' (5/8'')	1/2''	0,040''	0,545''	613
0,750'' (3/4'')	5/8''	0,042''	0,666''	537
0,875'' (7/8'')	3/4''	0,045''	0,785''	495
1,125'' (1-1/8'')	1''	0,050''	1,025''	420
1,375'' (1-3/8'')	1-1/4''	0,055''	1,265''	373
1,625'' (1-5/8'')	1-1/2''	0,060''	1,505''	347
2,125'' (2-1/8'')	2''	0,070''	1,985''	309
2,625'' (2-5/8'')	2-1/2''	0,080''	2,465''	285
3,125'' (3-1/8'')	3''	0,090''	2,945''	270
3,625'' (3-5/8'')	3-1/2''	0,100''	3,425''	258
4,125'' (4-1/8'')	4'	0,110''	3,905''	249

Tube - Copper - ASTM 280 - Refrigeration Type

O.D.	NOMINAL	WALL	I.D	MAX. PRESSURE (IN PSIG) at 150˚F
0,125'' (1/8'')	1/8''	0,030''	0,065''	2613
0,250'' (1/4'')	1/4''	0,030''	0,190''	1195
0,375'' (3/8'')	3/8''	0,032''	0,311''	836
0,500'' (1/2'')	1/2''	0,032''	0,436''	618
0,625'' (5/8'')	5/8''	0,035''	0,555''	525
0,750'' (3/4'')	3/4''	0,035''	0,680''	435
0,875'' (7/8'')	7/8''	0,045''	0,785''	495
1,125'' (1-1/8'')	1-1/8''	0,050''	1,025''	420
1,375'' (1-3/8'')	1-3/8''	0,050''	1,275''	373
1,625'' (1-5/8'')	1-5/8''	0,060''	1,505''	347

Technical Data

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

$$P = \frac{2 S t_m}{D - 0.8 t_m}$$

P	=	Allowable pressure	@ 150˚F S	=	5100 PSIG annealed
S	=	Allowable stress	@ 200˚F S	=	4800 PSIG annealed
t_m	=	Wall thickness	@ 300˚F S	=	4700 PSIG annealed
Od	=	Outside diameter	@ 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.