

WORKING PRESSURES: PIPE & TUBE

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SEAMLESS CARBON STEEL PIPE

NOMINAL PIPE SIZE	MAXIMUM ALLOWABLE WORKING PRESSURES AT -20F TO 650F ▶													
	SCHED 10	SCHED 20	SCHED 30	STD WALL	SCHED 40	SCHED 60	EXTRA STRONG	SCHED 80	SCHED 100	SCHED 120	SCHED 140	SCHED 160	XX STRONG	
1/2	—	—	—	1694	1694	—	3036	3036	—	—	—	4551	9223	
3/4	659	—	—	1450	1450	—	2589	2589	—	—	—	4505	7531	
1	065	—	—	1578	1578	—	2601	2601	—	—	—	4290	7150	
1 1/4	556	—	—	1069	1069	—	1941	1941	—	—	—	3001	5593	
1 1/2	486	—	—	1004	1004	—	1821	1821	—	—	—	3091	5114	
2	388	—	—	903	903	—	1659	1659	—	—	—	3225	4475	
2 1/2	431	—	—	1214	1214	—	1936	1936	—	—	—	2963	4936	
3	346	—	—	1094	1094	—	1773	1773	—	—	—	2933	4405	
3 1/2	303	—	—	1023	1023	—	1671	1671	—	—	—	—	—	
4	269	—	—	974	974	—	1598	1598	—	2243	—	2868	3858	
5	284	—	—	888	888	—	1475	1475	—	2123	—	2791	3485	
6	239	—	—	833	833	—	1473	1473	—	2038	—	2738	3414	
8	225	543	628	770	770	1343	1343	1649	2068	2388	2715	2605	—	
10	224	434	578	723	723	1070	1070	1311	1641	1975	2406	2754	—	
12	219	366	534	630	696	1033	898	1305	1653	2009	2295	2735	—	
14	333	451	573	573	693	999	816	1311	1690	2013	2341	2675	—	
16	291	395	500	500	711	980	711	1305	1638	1975	2378	2669	—	
18	258	350	538	444	725	1013	631	1303	1648	1998	2303	2665	—	
20	233	399	568	399	693	995	568	1299	1653	1970	2338	2663	—	
22	211	—	—	363	—	—	515	—	—	—	—	—	—	
24	194	331	541	331	683	1004	471	1295	1664	2003	2309	2656	—	
26	—	—	—	306	—	—	435	—	—	—	—	—	—	
30	209	376	488	265	—	—	376	—	—	—	—	—	—	
36	—	—	—	220	—	—	314	—	—	—	—	—	—	
42	—	—	—	189	—	—	269	—	—	—	—	—	—	

For allowable working pressures at higher temperatures, multiply listed values by the following factors:

GRADE A						GRADE B					
Temperature	700° F	750° F	800° F	850° F	900° F	Temperature	700° F	750° F	800° F	850° F	900° F
Multiplying Factor	.974	.892	.750	.708	.417	Multiplying Factor	.956	.863	.720	.520	.333

VARIOUS TUBE

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Calculating theoretical allowable working pressures of tubing equals multiplier below x "S" value from chart. This is for ambient temperature applications. See below for temperature factors (multipliers) above 200°F.

TUBE O.D. (IN.)	TUBE WALL THICKNESS (INCHES)											
	.028	.035	.049	.065	.083	.095	.109	.120	.134	.148	.156	
1/8"	.533*	.676*	*LAME'S FORMULA									
3/16"	.339	.436*	.628*									
1/4"	.244	.315	.460*	.625*								
5/16"	.245	.358	.492*									
3/8"	.201	.291	.402*									
1/2"	.148	.212	.290	.382								
5/8"	.117	.167	.226	.296	.346							
3/4"	.137	.186	.242	.281	.328							
7/8"	.117	.157	.205	.237	.276							
1"	.101	.137	.177	.205	.238	.265						
1 1/4"		.1085	.1402	.1618	.1874	.2079	.2345	.2615	.2773			
1 1/2"		.1158	.1334	.1543	.1709	.1924	.2142	.2268				
2"		.0987	.1139	.1260	.1416	.1573	.1664					

Material	"S" Value	Specification	Tensile
Carbon Steel	15700	Hydraulic A-179	47000
Stainless	20000	Annealed A-269, A-213	75000
Monel	18700	Smis 400 B-165	70000
Copper	60000	Types L, K B-88, B-75	30000
Aluminum	14000	Series 6061T6 B-218	42000

°F	FACTORS					
	ALUMINUM	COPPER	STEEL	304SS	316SS	MONEL
200	1.00	.80	.95	1.00	1.00	.88
400	.40	.50	.86	.93	.96	.79
600	—	—	.77	.82	.85	.79
800	—	—	.58	.76	.79	.76
1000	—	—	—	.69	.76	—
1200	—	—	—	.30	.37	—