STAINLESS STEEL PIPE ALLOWABLE WORKING PRESSURES

FOR PLAIN END FINISHES, APPLICABLE TO 304/L AND 316/L
FOR A312 WELDED PIPE, Allowable working pressures are based on the Barlow Formula, and are provided for reference only.

Type 304L Schedule 40S and 80S

Temperature -°F			-425 to *300	400	500	600	650	700	750
Max. Stress			14200	13400	12500	11850	11650	11400	11250
Nom. Pipe Size	Sch. No.	Nom. Wall							
½	40S	.109	3546	3346	3122	2959	2909	2847	2809
	80S	.147	4955	4676	4362	4135	4065	3978	3926
¾	40S	.113	2892	2729	2945	2413	2372	2321	2291
	80S	.154	4051	3832	3575	3389	3332	3250	3217
1	40S	.133	2704	2552	2381	2257	2219	2171	2142
	80S	.179	3738	3528	3291	3120	3067	5001	2962
1¼	40S	.140	2227	2101	1550	1858	1827	1788	1764
	80S	.191	3109	2934	2737	2595	2551	2495	2483
1½	40S	.145	2093	1890	1763	1671	1643	1608	1587
	80S	.200	2823	2884	2485	2386	2316	2267	2237
2	40S	.154	1587	1592	1485	1408	1384	1365	1337
	80S	.213	2437	2300	2145	2034	1999	1958	1931
2½	40S	.203	1845	1741	1524	1540	1514	1481	1452
	80S	.275	2557	2413	2251	2134	2098	2053	2026
3	40S	.215	1602	1512	1410	1337	1315	1286	1259
	80S	.300	2255	2136	1994	1890	1859	1819	1795
3½	40S	.225	1451	1379	1255	1219	1199	1173	1158
	80S	.318	2091	1974	1841	1745	1715	1579	1557
4	40S	.237	1333	1282	1195	1133	1114	1090	1075
	80S	.337	1953	1855	1725	1623	1611	1575	1555

Type 316L Schedule 40S and 80S

Temperature -°F			-325 to 300	400	500	600	650	700	750
Max. Stress			14200	13200	12250	11450	11200	10950	10700
Nom. Pipe Size	Sch. No.	Nom. Wall							
½	40S	.109	3546	3296	3059	2859	2797	2734	2672
	80S	.147	4955	4606	4275	3996	3908	3821	3734
¾	40S	.113	2892	2688	2495	2322	2261	2230	2179
	80S	.154	4061	3775	3503	3275	3203	3132	3080
1	40S	.133	2704	2514	2333	2131	2133	2085	2038
	80S	.179	3738	3475	3225	3014	2948	2883	2817
1¼	40S	.140	2227	2070	1921	1795	1756	1717	1678
	80S	.191	3109	2890	2682	2507	2452	2397	2343
1½	40S	.145	2003	1862	1728	1615	1580	1544	1509
	80S	.200	2323	2525	2436	2276	2227	2177	2127
2	40S	.154	1637	1559	1456	1361	1331	1301	1271
	80S	.213	2437	2255	2102	1955	1922	1879	1836
2½	40S	.203	1845	1715	1592	1488	1455	1423	1390
	80S	.275	2557	2377	2206	2052	2017	1972	1927
3	40S	.215	1502	1439	1382	1292	1254	1235	1207
	80S	.300	2265	2106	1954	1827	1787	1747	1707
3½	40S	.225	1461	1358	1261	1178	1155	1127	1101
	80S	.318	2091	1944	1804	1535	1350	1523	1576
4	40S	.237	1558	1253	1172	1095	1071	1947	1023
	80S	.337	1963	1825	1694	1533	1549	1314	1479

Notes:

1. Stress valves are as published in Appendix 'A' of ANSI B31.3 – Petroleum Refinery Piping Code.
2. The user should refer to the applicable Code for Pressure Piping covering design and material limitations and rules.
3. The particular Code should be reviewed before final design thickness is determined.
4. Depending upon the general service for which the piping system is intended, one of the following may be applicable:

   ASME Section I – Power Boilers
   ASME Section III – Nuclear Power Plant Components
   ASME Section VIII – Pressure Vessels

   ANSI B31.1 – Power Piping
   ANSI B31.3 – Petroleum Refinery Piping
   ANSI B31.5 – Refrigeration Piping

5. The user is cautioned that stress values shown in the various Codes do vary. For example the stress values used in our calculations are not the same as noted in ANSI B31.1. Limitations on maximum temperature for materials may also vary with each Code.
6. The above data is provided by courtesy of Avesta Stainless Steel Pipe. The pipe manufacturing method may limit use for certain applications. Please refer to the above standards and codes for specific data and formula.