

TABLE 4a. Pressure-Temperature Ratings of Soldered and Brazed Joints

Joining Material ¹	Service Temperature, °F	Fitting Type	Maximum Working Gage Pressure (psi), for Standard Water Tube Sizes ¹				
			Nominal or Standard Size, inches				
			1/8 through 1	1 1/4 through 2	2 1/2 through 4	5 through 8	10 through 12
Alloy Sn50 50-50 Tin-Lead Solder ⁵	100	Pressure ²	200	175	150	135	100
		DWV ³	—	95	80	70	—
	150	Pressure ²	150	125	100	90	70
		DWV ³	—	70	55	45	—
	200	Pressure ²	100	90	75	70	50
		DWV ³	—	50	40	35	—
	250	Pressure ²	85	75	50	45	40
		DWV ³	—	—	—	—	—
	Saturated Steam	Pressure	15	15	15	15	15
	Alloy Sb5 95-5 Tin-Antimony Solder	100	Pressure ²	1090	850	705	660
DWV ³			—	390	325	330	—
150		Pressure ²	625	485	405	375	285
		DWV ³	—	225	185	190	—
200		Pressure ²	505	395	325	305	230
		DWV ³	—	180	150	155	—
250		Pressure ²	270	210	175	165	125
		DWV ³	—	95	80	80	—
Saturated Steam		Pressure	15	15	15	15	15
Alloy E		100	Pressure ²	710	555	460	430
	DWV ³		—	255	210	215	—
	150	Pressure ²	475	370	305	285	215
		DWV ³	—	170	140	140	—
	200	Pressure ²	375	290	240	225	170
		DWV ³	—	135	110	115	—
	250	Pressure ²	320	250	205	195	145
		DWV ³	—	115	95	95	—
	Saturated Steam	Pressure	15	15	15	15	15
	Alloy HB	100	Pressure ²	1035	805	670	625
DWV ³			—	370	310	315	—
150		Pressure ²	710	555	460	430	325
		DWV ³	—	255	210	215	—
200		Pressure ²	440	345	285	265	200
		DWV ³	—	155	130	135	—
250		Pressure ²	430	335	275	260	195
		DWV ³	—	155	125	130	—
Saturated Steam		Pressure	15	15	15	15	15
Joining materials melting at or above 1100° F ⁶		Pressure-temperature ratings consistent with the materials and procedures employed (see Table 3, Annealed).					
	Saturated Steam	Pressure	120	120	120	120	120

For extremely low working temperatures in the 0°F to minus 200°F range, it is recommended that a joint material melting at or above 1100°F be employed (see reference⁶).

¹ Standard water tube sizes per ASTM B88.

² Ratings up to 8 inches in size are those given in ASME B16.22 *Wrought Copper and Copper Alloy Solder Joint Pressure Fittings* and ASME B16.18 *Cast Copper and Copper Alloy Solder Joint Fittings*. Rating for 10- to 12-inch sizes are those given in ASME B16.18 *Cast Copper and Copper Alloy Solder Joint Pressure Fittings*.

³ Using ASME B16.29 *Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings — DWV*, and ASME B16.23 *Cast Copper Alloy Solder Joint Drainage Fittings — DWV*.

⁴ Alloy designations are per ASTM B32.

⁵ The Safe Drinking Water Act Amendment of 1986 prohibits the use in potable water systems of any solder having a lead content in excess of 0.2%.

⁶ These joining materials are defined as *brazing alloys* by the American Welding Society.