

Pressure-Temperature Ratings of Soldered and Brazed Joints

Joining material ⁴	Service temperature °F	Fitting type	Maximum working gage pressure (psi), for standard water tube sizes ¹					
			Nominal or standard size, inches					
			1/8 - 1	1 1/4 - 2	2 1/4 - 4	5 - 8	10 - 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	500
			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	325
			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	475
			DWV ³	–	370	310	315	–

Joining material ⁴	Service temperature °F	Fitting type	Maximum working gage pressure (psi), for standard water tube sizes ¹				
			Nominal or standard size, inches				
			1/8 - 1	1 1/4 - 2	2 1/4 - 4	5 - 8	10 - 12
	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

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 reference ⁶ below).

¹ Standard water tube sizes per ASTM B 88.

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 B 32.

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.