

HOW WATER EXPANDS WHEN HEATED

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Looking at the following table which I created from the data in my Handbook of Chemistry and Physics, if we assume that water is entering your system at 50 degrees Fahrenheit and use that as our base line of 100%, there is no expansion.

When the water is heated in a hot water system such as a hot water boiler, it expands. Look at the **RED** lines and select your approximate hot water operating temperature. That extra water volume will need to go somewhere (i.e. an expansion tank).

TABLE OF WATER VOLUME VS TEMPERATURE

Deg C	Deg F	D gm/ml	D lb/gal	
0	32	0.99987	8.338916	99.986%
3.98	39.164	1	8.34	99.973%
5	41	0.99999	8.339917	99.974%
10	50	0.99973	8.337748	100.000%
15	59	0.99913	8.332744	100.060%
18	64.4	0.99862	8.328491	100.111%
20	68	0.99823	8.325238	100.150%
25	77	0.99707	8.315564	100.267%
30	86	0.99567	8.303888	100.408%
35	95	0.99406	8.29046	100.570%
38	100.4	0.99299	8.281537	100.679%
40	104	0.99224	8.275282	100.755%
45	113	0.99025	8.258685	100.957%
50	122	0.98807	8.240504	101.180%
55	131	0.98573	8.220988	101.420%
60	140	0.98324	8.200222	101.677%
65	149	0.98059	8.178121	101.952%
70	158	0.97781	8.154935	102.242%
75	167	0.97489	8.130583	102.548%
80	176	0.97183	8.105062	102.871%
85	185	0.96865	8.078541	103.209%
90	194	0.96534	8.050936	103.562%
95	203	0.96192	8.022413	103.931%
100	212	0.95838	7.992889	104.315%

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