

HOME APPLIANCE NATURAL GAS PIPE SIZING BASED ON APPLIANCE DEMAND IN CUBIC FEET/HOUR (CFH) PL012

Information contained in this memo is based upon the gas pipe sizing table found in the 2022 California Plumbing Code (CPC) Chapter 12 Table 1215.2(1) for gas pressure less than 2psi, 0.5" W.C. and Specific Gravity 0.60 and should not be considered a complete source of plumbing code requirements.

Typical Home Appliance Gas Input Demand in BTU/Hr (Referenced from CPC Table 1208.4.1 or CMC Table 1308.4.1)

- 1. Tank-Type Water Heater - 30-40 Gallon Tank = 35,000 / 50 Gallon Tank = 50,000
- 2. Tankless/Instantaneous Water Heater – 2 gpm=142,800, 4 gpm=285,000, 6 gpm=428,400
- 3. Main House Furnace – 100,000/ Accessory Dwelling Unit – 60,000
- 4. Kitchen Range – 65,000
- 5. Dryer – 35,000
- 6. Fireplace – 40,000

Calculate Minimum Required Pipe Sizes

1. Determine approximate total developed length (TDL) from the gas meter to the farthest outlet. If between distances, use next farthest distance. Use this row to calculate main and all branch pipe sizes for the Longest Length Method.
2. Add up actual appliance nameplate input gas demand for each section of the main gas line working toward the farthest outlet. If actual appliance input gas demand is not available, the typical gas demand values shown above may be used.
3. Branch lines are sized based on the total input demand on each section of branch lines.
4. Use TDL from gas meter to farthest outlet on each branch for Branch Length Method.
5. Convert from BTU/Hr to CFH - $BTU / 1000 = CFH$ Convert from CFH to BTU/Hr - $CFH \times 1000 = BTU/Hr$

NATURAL GAS PIPE SIZING CHART SCH 40 STEEL PIPE DEMAND IN CFH								
TOTAL DEVELOPED LENGTH TO FARTHEST OUTLET	PIPE SIZE							
	FEET	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
10	172	360	678	1390	2090	4020	6400	11300
20	118	247	466	957	1430	2760	4400	7780
30	95	199	374	768	1150	2220	3530	6250
40	81	170	320	657	985	1900	3020	5350
50	72	151	284	583	873	1680	2680	4740
60	65	137	257	528	791	1520	2430	4290
70	60	126	237	486	728	1400	2230	3950
80	56	117	220	452	677	1300	2080	3670
90	52	110	207	424	635	1220	1950	3450
100	50	104	195	400	600	1160	1840	3260
125	44	92	173	355	532	1020	1630	2890
150	40	83	157	322	482	928	1480	2610
175	37	77	144	296	443	854	1360	2410
200	34	71	134	275	412	794	1270	2240
250	30	63	119	244	366	704	1120	1980
300	27	57	108	221	331	638	1020	1800