



## Gas – Adding or Extending Piping

### Permit Requirements

- A permit is required when installing new gas piping or when altering an existing gas line.
- Permits are issued to either the owner *or* to a State-licensed contractor with a current City of Rocklin Business License.
- Permits are obtained at the City of Rocklin Building Division Permit Center, or 24/7 by the Internet:
  - The Permit Center is located in City Hall at 3970 Rocklin Road Rocklin  
Office hours are from 8:00 a.m. to 5:00 p.m., Monday through Thursday, and 8:00 a.m. to Noon on Fridays.
  - Permits online: [www.rocklin.ca.us/get-permit](http://www.rocklin.ca.us/get-permit)
- Plans are usually **not** required. However, gas-sizing calculations may be required to verify that the gas piping is sized per the minimum code requirements. [See Worksheet, page 3]
- The calculations, if required, shall be made available at the time of inspection.

### Installation Requirements

- **Unions** [inline couplings] are **not** permitted in a gas piping system **except** as follows:
  - Unions are allowed *downstream of* [after] appliance shutoff valves, meter locations and immediately downstream of building shutoff valves.
  - The use of right/left couplings and nipples are required in lieu of unions in all other locations.
- **Metallic gas piping** is not allowed outdoors in or within six inches of the ground.  
*Exception:* Only piping which has been factory coated with approved materials is acceptable for burial in the ground.
- Appliances and CPC-approved **Flexible gas connectors** from the gas pipe to the appliances shall be sized and installed in accordance with code requirements and manufacturer's specifications.
- The gas pipe must be **firecaulked** tightly where the pipe penetrates the exterior surface of the fire chamber in a factory-built fireplace. Also, the interior void shall be filled with fiberglass insulation or mineral wool. It must also be firecaulked at any penetrations through a garage or any other fire-rated wall.
- **Shutoff valve** requirements are as follows:
  1. Required in the gas piping system ahead of all gas appliances,
  2. Must be accessible and in the same room as the appliance,
  3. Must not leak,
  4. Shall be within **three feet** of the appliance, *except* as follows:
    - Shutoff valves may be within **six** feet of the gas dryer or freestanding oven,
    - Shutoff valves for log lighters to be within **four** feet of the fireplace opening.

Note: Fireplace shutoff valves must be installed **outside** the firebox.
- **Pipe support** is based on the size of the pipe. Protect pipes from damage.

CPC Table 1210.2.4.1	
Size of pipe	Pipe Support Distance (max.)
1/2"	6'
3/4" to 1"	8'
1-1/4" or larger- Horizontal	10'
1-1/4" or larger- Vertical	Every Floor

## Inspection Requirements

- All new piping shall be inspected prior to covering any portion of new piping.
- The applicant must perform a gas test and have it witnessed by the inspector for all portions of new gas piping, after all nailing of covering sheetrock and any other concealing is complete.
- The person doing the work is responsible for performing the gas test and calling for inspection.

## Gas Test Requirements      CPC 318, CPC 1213.2

- The entire gas piping system shall be tested, with all appliances shut off at the valve or disconnected and capped. Caution: Some of the older wedge-type shut-off valves tend to leak and then the pressure test can damage the appliances; disconnection and pre-testing is recommended. the inspection shall include an air pressure test. The gas piping shall stand a pressure of **not less than (10) pounds per square inch** gauge pressure. The test gauge must be accurate to 1/10 of one pound and have a pressure range of not more than twice the test pressure applied. The test must hold for at least **15 minutes** with no perceptible drop in pressure while the Inspector waits.
- Welded piping and those pipes holding gas at over 14 inches water column pressure shall be tested at not less than 60 psi with a gauge with 1 psi increments for at least 30 minutes.

*Note that the test gauge requirements have changed slightly from the prior requirements and policies.*

Appliance (typical)*	Minimum demand per hour		
	Btu/hr	Watts	Cubic Ft/Hr
<b>Barbecue (residential)</b>	40,000	14,650	<b>40</b>
Bunsen Burner	3,000	879	3
<b>Domestic Clothes Dryer</b>	35,000	10,255	<b>35</b>
<b>Domestic Gas Range</b>	65,000	19,045	<b>65</b>
Domestic Recessed Oven Section	25,000	7,325	25
Domestic Gas Cooktop	40,000	11,720	40
Fireplace Log Lighter (commercial)	80,000	14,650	80
<b>Fireplace Log Lighter (residential)</b>	80,000	2,930	<b>80</b>
Gas Engines (per Horsepower)	10,000x Hp	2,930 x Hp	10 x Hp
Gas Refrigerator	3,000	879	3
Water Heater Instantaneous	200,000	73,275	200
Steam Boilers (per horsepower)	50,000 x Hp	14,650 x Hp	50 x Hp
Storage Water Heater up to 30 gallons	30,000	8,790	30
<b>Storage Water Heater 50 gallons</b>	50,000	14,650	<b>50</b>
Furnace	See Manufacturer's Specifications		
Pool Heater	See Manufacturer's Specifications		
Instantaneous Water Heater	See Manufacturer's Specifications		

\* See manufacturer's specifications or the Rating Plate attached to the appliance for the exact usage.

**Bold:** most common residential uses (225 CFH combined + FAU)

Note: Cubic Feet per Hour (CFH) x 1000 = BTU capacity; 10,000 BTU=10 CFH

Additional information can be obtained by calling our Information Inspector's voice mail at:

(916)-625-5120 and leaving a detailed message, or by visiting our website at: [www.rocklin.ca.us/get-permit](http://www.rocklin.ca.us/get-permit)

## Sizing Worksheet

<b>Table 1216.2(2): Size of Gas Piping (Low Pressure) CFH</b>												
Pipe Size (inches)	Maximum Length of pipe section in Feet											
	10	20	30	40	50	60	70	80	90	100	125	150
1/2	172	118	95	81	72	65	60	56	52	50	44	40
3/4	<b>360</b>	<b>247</b>	<b>199</b>	<b>170</b>	<b>151</b>	<b>137</b>	<b>126</b>	<b>117</b>	<b>110</b>	<b>104</b>	<b>92</b>	<b>83</b>
<b>1</b>	678	466	<b>374</b>	<b>320</b>	<b>284</b>	<b>257</b>	237	220	207	195	173	157
1-1/4	1390	957	768	657	583	528	486	452	424	400	355	322
1-1/2	2090	1430	1150	985	873	791	728	677	635	600	532	482
<b>2</b>	4020	2760	2220	1900	1680	1520	1400	1300	1220	1160	1020	928
2-1/2	6400	4400	3530	3020	2680	2430	2230	2080	1950	1840	1630	1480
<b>3</b>	11,300	7780	6250	5350	4740	4290	3950	3670	3450	3260	2890	2610

1. Maximum Delivery Capacity of Cubic Feet of Gas per Hour (CFH) of IPS Pipe carrying Natural Gas of 0.60 Specific Gravity, based on a Pressure Drop 0.5 inch Water Column. 10,000 BTU= 10 CFH Divide Watts by 293 = CFH
2. 1/2" and 3/4" pipe is most common residential size (in **bold**), with 1" to 1-1/4" at the meter. May install larger meter to allow for future pool heater.

### Sample Sizing Chart

1. Furthest Outlet: 23+12+25+5+30= 95'  
>> use 100' column Table 12-3
2. Sizing Pipe for Demand per 100' col:  
(D) 35 CFH = 1/2"  
(1) 35+50 = 85 CFH= 3/4"  
(2) 85+25 =110 CFH = 1"  
(3) 110+65=175 CFH =1"  
(4) 175+50+130=355 CFH=1-1/4"  
Meter: Use 1-1/4" or 1-1/2"
3. Sizing Branches by length of run:  
Dryer (furthest-see above)  
BBQ (50 cfh; 85' 90') =1/2"  
Fpl (25 cfh; 68' 70') =1/2"  
Range (65 cfh; 50') =1/2"  
WH (50 cfh; 34' 40') =1/2"  
FAU (130 cfh; 35' 40') = 3/4"

