

Residential Remodel Building Permit Requirements Adding or Replacing Residential Gas Appliances

Important notes about building permit request submissions

- All permit applications must be submitted online using the [Customer Access](#) portal.
- There is no need to email us when you submit documents. Staff is notified automatically within one business day of your submission.
- Submit documents as PDF file type only.
- Please include the following:
 1. List the site address on all documents and plans.
 2. Include the owner's name on all documents.
- Permit review will be delayed if the required documents are not submitted online, if they are not submitted as PDFs, or if the documentation is missing information.
- All submitted documents will become a public permanent record of the property. It is in your best interest that the submitted PDFs are of the highest quality and detail, in case you or somebody else needs to refer to them in the future.

Required documents

1. Completed "Adding or Replacing Residential Gas Appliances questionnaire".
2. A residential piping system schematic drawing, as described in the above-mentioned questionnaire.

Residential Gas Piping

1. Gas piping must comply with Chapter 24 of the 2021 International Residential Code (IRC).
 - a. Arapahoe County made the following amendments to this chapter:
 - i. Outside buried gas pipe must have a minimum depth beneath finished grade of 18 inches.
2. The sizing of the entire system must be reviewed to determine that the additional load will not starve existing outlets when a gas outlet is added.

- a. An approved gas pipe sizing schematic and sizing calculations that confirm compliance with IRC G2413.1 must be on site for inspections.
3. “Future” gas outlets and tees must be documented if the location is not obvious (e.g., dryer, range, BBQ).
4. Plastic pipe is only allowed outside underground. It is not allowed in or under any building or slab. A minimum of 18 American Wire Gauge (AWG) yellow tracer wire is required.
5. If CSST or polyethylene pipe is installed, a copy of the installer's certification to install the specific brand of pipe is required – upload the information on the [Customer Access](#) portal.
6. The CSST installation instructions must be left on the job site for rough inspection.
7. CSST must be bonded per instructions and an electrical inspection is required.
8. Arapahoe County [amendments](#) allows gas piping to be tested for 15 minutes at 20-psi using a 30-psigauge. Please contact an Inspector to clarify other pressures or test methods.
9. New branches may not connect to existing gas pipes until after they have been tested and approved. A convenience valve at the tie-in may be installed and plugged for the rough inspection; the tie-in can be tested using a leak detection fluid or an instrument.
 - a. A valve may not be included in the test unless it is listed and labeled American Standards of Mechanical Engineers (ASME) B 16.33.
10. All gas appliances must be listed and labeled as required by IRC 2404.3 (301.3), International Fuel Gas Code (IFGC) 301.3.

Residential Combustion Air

1. IRC G2407 requires that Combustion air must be supplied to all fuel-burning appliances.
2. When any appliance is added or replaced, the combustion air provided must comply with the manufacturer’s installation instructions and IRC G2407 (304).
3. IRC G2407.5.1 or IRC G2407.5.2 may be used if the air infiltration rate is known and documented.
4. All IRC methods may be accepted, however, IRC G2407.6.2 (304.6.2) contains a good ‘rule of thumb’ method: one sq. in. of cross-sectional area of combustion air duct or

opening per each 3,000 BTU (British Thermal Unit) of total rated input.

Residential Fuel Burning Appliance Venting

1. IRC G2425.15 (501.15) requires that, when appliances are replaced, removed, or added to an existing venting system, the venting system must comply with current IRC requirements including the manufacturer's installation instructions.
2. This may require existing appliance vent components to be changed or upsized when replacing any connected appliance.
3. IRC 2428.3.9.1 (504.3.9.1) requires that a tee or wye fitting on the common vent be double-wall if the common vent is double-wall.
4. Installation instructions for all new appliances must be followed and left on-site for inspections.

Important additional requirements for a successful inspection

- Download, print and have the following documents ready for the inspector from the [Customer Access](#) portal:
 - A color copy of all final stamped permit documents (i.e., all the ones reviewed and approved – these documents are to be found in the Customer Access portal and will have the file name marked as “FINAL”).
 - A copy of the review comments.