

This language is in the draft form, and is subject to change, it is not required to bring rules adoption to a Board although as a courtesy I would provide updates before adopting, the rules process does allow for public input.

5.6.2 - GAS PLUMBING SYSTEMS TEST REQUIREMENTS

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5.6.2.1 Gas pressure test required.

A. A ~~natural~~ gas pressure test shall be required as described in sections 5.6.2.2 through 5.6.2.4 the Plumbing Code under the following circumstances:

1. Gas plumbing work has been performed; or
2. There is evidence of a gas leak; or
3. A building is declared substandard and gas service has been disconnected for more than 30 days; or
4. A building is declared dangerous; or
5. Any condition stipulated by the ~~natural~~ gas supplier.

B. The City shall not approve ~~natural~~ gas service to a building which has not complied with this rule.

5.6.2.2 Plumbing gas rough inspection. A rough inspection is required after all piping authorized by the permit is installed, but before any portions of the piping are covered or concealed, and before any fixture, appliance, or shutoff valve is attached to the pipe.

A. **Low Pressure Gas Test.** This inspection must include an air, carbon dioxide, or nitrogen pressure test. Test pressure must be at least 15 pounds per square inch gauge pressure and held at least 15 minutes with no perceptible drop in pressure. The Building Official may extend the test time. A Bourbon tube ("spring") gauge may be utilized. See "Test Gauge" requirements in the plumbing code.

B. **Medium Pressure Gas Test.** For welded piping and piping that carries gas at pressures that exceed 14 inches water column pressure, the test pressure must be at least 60 pounds per square inch and must be continued for at least 30 minutes with no perceptible drop in pressure. The Building Official may extend the test time. The test may be made using air, carbon dioxide, or nitrogen pressure and must be made in the presence of the inspector. The permittee must furnish any necessary apparatus required to conduct the test. A Bourbon tube ("spring") gauge may be utilized. See "test gauge" requirements in the plumbing code.

5.6.2.3 Final gas inspection. The final test on gas piping must be made after the water heater, floor furnace, and gas appliance shutoff valves are installed. If changes or extensions are made to any existing gas piping from a point when no gas stop valve was provided in the original gas system, the responsible plumber or person must prepare the entire system to be inspected and tested. Existing gas piping or portions of the gas piping must be tested consistent with the standards of this section and are not required to meet the test pressures set forth in Plumbing Gas Rough Inspection.

A. **Low pressure final gas test.** A low-pressure gas distribution system must be tested with a minimum of five pound per square inch (psi) of air, carbon dioxide, or nitrogen pressure for 15 minutes using a class 1A diaphragm test gauge that is calibrated to an accuracy of ± 1 percent of the span. See "test gauge" requirements in the

plumbing code.

- B. **Medium pressure and welded pipe final gas test.** A medium pressure and welded pipe gas distribution system must be tested with 10 pounds per square inch for the entire system using a Class 1A diaphragm test gauge that is calibrated to an accuracy of ± 1 percent of the span. See "test gauge" requirements in the plumbing code. The test must hold tight for at least 30 minutes.
- C. The permittee must arrange for access for the inspection, the permittee must furnish any necessary apparatus and labor required to conduct the test.

5.6.2.4 Emergency pulled gas meter.

A. Definitions.

Pulled gas meter- An active gas system that is terminated by the gas supplier due to a leak in the gas distribution system, or in which the gas purveyor performed a test to determine that the continuance of natural gas service could be hazardous to the occupant(s).

Emergency pulled gas meter inspection- An inspection of a "pulled gas meter" where a plumbing permit has been obtained, or where a plumbing permit will be obtained by a master plumber registered to perform plumbing work in this jurisdiction. This inspection is either pre-scheduled, or under emergency conditions, the inspection may be scheduled by contacting the assigned Supervisor.

- B. Before an inspector may authorize a final inspection on a plumbing permit, the permit holder or responsible plumber must meet the following pulled meter testing pressure requirements.
 - a. Low pressure test. A five pound per square inch test must be made on the entire low-pressure natural gas system using a Class 1A diaphragm test gauge that is calibrated to an accuracy of \pm one percent of the span. The test must hold tight for at least 15 minutes.
 - b. Medium pressure and welded pipe test. A ten pound per square inch test is required for the entire medium pressure gas system and welded pipe using a Class 1A diaphragm test gauge that is calibrated to an accuracy of \pm one percent of the span. The test must hold tight for at least 30 minutes.
- C. All natural gas piping, valves, connectors, and appliances installed under a pulled meter plumbing permit must comply with current Plumbing and Mechanical Code requirements.
- D. All welded gas piping systems will be tested with a medium pressure test.
- E. An existing gas valve must be capped if it is no longer in use, which occurs when an adequate number of outlets are available to provide a temperature of 70 degrees three feet above the floor in a habitable room. If an existing valve leaks, it must be replaced with a listed valve and connector.
- F. A rubber hose gas connector must be replaced with a listed connector.
- G. Existing wall vent piping for a gas appliance or water heater may be retained if the vent meets the all of the following conditions:
 - a. properly sized for the appliances serviced;
 - b. properly connected for the appliance;
 - c. not rusted or deteriorated;
 - d. Terminates above the roof line, and has a minimum of two-inch clearance from combustibles at all points.
- ~~H. An existing water heater must have operable temperature and pressure relief valves. And when practical, if the water heater lacks an opening for a properly sized temperature and pressure relief valve, a pressure relief valve must be installed on the hot water side of the water heater.~~
- I. Each natural gas appliance must be provided with combustion air consistent with the product listing. If an existing gas appliance lacks combustion air, properly sized louvers in doors or ducts must be placed in proper locations.
- J. An existing or replacement water heater located in a garage must be at least 18 inches above the finished

floor level unless the water heater is listed to be located at finished floor level and is protected from damage as required by the Plumbing Code.

- K. A battery operated smoke detector must be installed outside of each separate sleeping area in the immediate vicinity of the bedroom.

5.6.2.4.1 Scheduling inspection for an emergency pulled gas meter.

- A. The City of Austin Building Inspection Division will perform pre-scheduled Emergency Pulled Gas Meter inspections at authorized times based on the time of year and outside temperature as forecasted by the National Weather Service.
- B. From April 1st through October 31st, a pre-permitted Emergency Pulled Gas Meter Inspection will be scheduled for inspection by the master plumber on the next business day. The inspection will occur on the next City business day, unless the outside temperature forecasted by the National Weather Service for Austin is 50 degrees or lower. In this case, the inspection will be performed within a four-hour time frame from when the master plumber has created the requested. The request must be made no later than 12:00 pm for same day service.
- C. From November 1st through March 31st, an Emergency Pulled Gas Meter Inspection will be inspected within a four-hour time frame from when the master plumber has created the request. The request must be made no later than 12:00 pm for same day service, unless the outside temperature is above 50 degree as forecast by the National Weather Service for Austin. Then inspection will be scheduled for the next regular business day.

5.6.2.5 Building sewer test. A building sewer must be tested by plugging the end of the building sewer at its point of connection with the public sewer or private sewage disposal system and completely filling the building sewer with water from the lowest to the highest point, or by an approved equivalent low-pressure air test. A building sewer must be water tight at all points. A building sewer may be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

5.6.2.6 Manhole test. A manhole tested with water must be tested by plugging all outlets and filling the manhole to the overflow. The water test must be performed when the manhole is fully exposed with no visible leakage. A manhole may also be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

5.6.2.7 Testing procedures for drain, waste, and vent piping. Plumbing, drainage, and venting systems piping must be tested with water or air. The level of water must be filled to the top and be visible so that an inspector may mark the level of the water. The authority having jurisdiction may require the removal of any cleanouts or similar items to ascertain whether the pressure reached all parts of the system.

- A. Except as otherwise provided, a waste and drainage system may be tested with water or air.
- B. If moisture conditions make it impractical to verify tightness of joints in a drainage system with a water test, the system must be tested with air using a Class 1A diaphragm test gauge that is calibrated to an accuracy of ± 1 percent of the span. See test gauges in the Plumbing Code for gauge requirements.
- C. A water or air test must be maintained for a minimum of 15 minutes prior to the start of the inspection.
- D. The entire portion of the system tested must be subjected to a three pound per square inch air test for 15 minutes.
- E. If a leak is detected by either test, the leak must be corrected and the system retested and inspected until the work is found to be tight and that it conforms to the requirements of the Plumbing Code.
- F. In a water test for single story building, the soil and waste stacks must be plugged and filled with water to provide a minimum of five foot head-pressure at the point where the house sewer connects to the house drain.

A riser may not be capped until the entire system is full.

- G. In a water test for a multi-story building, sanitary drainage and vent stacks must be plugged and filled to a point that is at least six inches above the re-vent of the uppermost floor. Provisions must be made for the plumbing inspector to see the water level. Each floor may be tested individually or combined as deemed necessary by the authority having jurisdiction.
- H. A person may not use cement, sealing wax, resin, paint, tallow, or other material that may prevent the detection of cracks, holes, or other imperfections on any material used in the plumbing system.
- I. When a floor drain, floor sink, or other indirect waste receptor has a plumbing connection below ground floor level that was not tested during the initial rough-in test, the following requirements apply:
 - a. a water test must be re-administered for the portion of the drain waste and vent system below ground floor level;
 - b. The drain must be filled to a point of overflow.
 - c. Floor sinks must be tested by filling the drain to the point of overflow at the plumbing copper inspection but before the slab is poured.
- J. Drain waste and vent piping may be vacuum tested by plugging all inlets and outlets and testing with five inches of vacuum for five minutes with no loss.

5.6.2.8 Trench drains. A pre-manufactured trench drain must be tested in place to assure the tightness of the drain by plugging the drain and filling the drain with water to the overflow of the trench drain. This test must be performed before concrete is poured into place.

5.6.2.9 Methods of testing storm drainage systems. Except for outside leaders and perforated or open jointed drain tile, the piping of a storm drain system must be tested when rough piping installation is complete, by water or air, and proven tight. The authority having jurisdiction may require cleanout plugs to be removed to determine if the pressure reached all parts of the system. A test required by this section must be conducted consistent with Section 5.6.2.10 or 5.6.2.11.

5.6.2.10 Test procedures for material other than polyvinyl chloride (PVC) drainage piping.

- A. A storm drainage system may be tested with water or air.
- B. When utilizing a water test, the level of water must be visible so that an inspector can mark the level of the water unless the system is filled to the point of overflow.
- C. A water or air test must be maintained for at least 15 minutes prior to the start of the inspection.
- D. If tested with air, the entire portion of the system tested must be subjected to a five pound per square inch air test for 15 minutes.
- E. If moisture conditions make it impractical to verify tightness of joints in a drainage system with a water test, the system must be tested with air using a Class 1A diaphragm test gauge that is calibrated to an accuracy of ± 1 percent of the span. See test gauge requirements in the plumbing code.
- F. To test with water in a single story building, the storm water system stacks must be plugged and completely filled with water to provide a minimum of ten feet head-pressure at the highest portion of the system being tested or to a point of roof drain overflow.
- G. To test with water in a multi-story building, the storm water system stacks must be plugged and filled to a point of overflow at the roof drain or in a sectional test. The roof drainage system must be tested with a minimum of 10 foot of head water.
- H. If a leak is detected from the water or air test, the leak must be corrected and the system re-tested and inspected until the work is found to be tight and that it conforms to the requirements of the Plumbing Code.

5.6.2.11 Testing procedures for plastic roof drainage piping.

- A. A PVC drainage system must be tested with water or air.
- B. The level of water must be visible so that an inspector can mark the level of the water.
- C. To test with water in a single story building, the storm water system stacks must be plugged and completely filled with water to provide a minimum of 10 feet head- pressure at the highest portion of the system being tested or to a point of roof drain overflow.
- D. To test a multi-story building, the storm water system stacks must be plugged and filled to a point of overflow at the roof drain or a sectional test of the roof drainage system is allowed when tested with a minimum of 10 foot of head water or a three pound per square inch air test for 15 minutes.
- E. If moisture conditions make it impractical to verify tightness of joints in a drainage system with a water test, the system must be tested with air using a Class 1A diaphragm test gauge that is calibrated to an accuracy of ± 1 percent of the span. See test gauge requirements in the plumbing code.
- F. A water or air test must be maintained for a minimum of 15 minutes prior to the start of the inspection.
- G. In an air test, the entire portion of the system tested must be subjected to a three pound per square inch air test for 15 minutes.
- H. If a leak is detected from the water or air test, the leak must be corrected and the system re-tested and inspected until the work is found to be tight and that it conforms to the requirements of the Plumbing Code.

5.6.2.12 Testing requirements for non-human use medical gas and vacuum systems.

- A. The test pressure for positive-pressure gas piping installed in medical gas systems for non-human uses must be 1.5 times the system working pressure, but no less than a gauge pressure of 1035 kpa (150 psi).
- B. The test pressure for a copper vacuum system installed for non-human uses must be a gauge pressure of 105 kpa (15 psi).
- C. Piping for a field installed vacuum system using PVC pipe and fittings for non- human uses must be subjected to a vacuum of not less than 485 mm (19 inches) gauge HgV, using either the vacuum source equipment or a test pump.