

250.104(B) Bonding of Piping Systems and Exposed Structural Metal. Other Metal Piping.

Code Change Summary: This section of the code has been reorganized for simplicity.

Metal piping systems that are likely to become energized must be bonded. This includes Gas piping, compressed air lines, vacuum system piping, medical gas piping and the like. Bonding the piping systems ensures that if they become energized, then the overcurrent device supplying the circuit associated with these systems will trip.

Not all metal piping systems are likely to become energized but many inspectors will require them to be bonded anyway. If a gas appliance is supplied with a branch circuit that contains an equipment grounding conductor, then the equipment grounding conductor in the branch circuit satisfies the required gas pipe bonding. If a gas appliance such as a gas water heater is not supplied with a branch circuit, then many feel the gas piping is not likely to become energized and therefore requires no additional bonding.

The code change takes all the permitted bonding methods out of the previous paragraph and places them in a simple numbered format. The bonding conductor is sized from Table 250.122 using the rating of the circuit that is likely to energize the piping system. The metal piping system can be bonded to any of the following:

- (1) Equipment grounding conductor for the circuit that is likely to energize the piping system
- (2) Service equipment enclosure
- (3) Grounded conductor at the service
- (4) Grounding electrode conductor, if of sufficient size
- (5) One or more grounding electrodes used

Below is a preview of the NEC[®]. See the actual NEC[®] text at [NFPA.ORG](https://www.nfpa.org) for the complete code section. Once there, click on the “free access” tab and select the applicable year of NFPA 70 (National Electrical code).



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Be sure to use a listed clamp when bonding the gas piping system.

2011 Code Language:

250.104(B) Other Metal Piping. *If installed in, or attached to, a building or structure, a metal piping system(s), including gas piping, that is likely to become energized shall be bonded to the service equipment enclosure; the grounded conductor at the service; the grounding electrode conductor, if of sufficient size; or to one or more grounding electrodes used. The bonding conductor(s) or jumper(s) shall be sized in accordance with 250.122, using the rating of the circuit that is likely to energize the piping system(s). The equipment grounding conductor for the circuit that is likely to energize the piping shall be permitted to serve as the bonding means. The points of attachment of the bonding jumper(s) shall be accessible.*

2014 Code Language:

250.104(B) Other Metal Piping. *If installed in, or attached to, a building or structure, a metal piping system(s), including gas piping, that is likely to become energized shall be bonded to any of the following:*

- (1) Equipment grounding conductor for the circuit that is likely to energize the piping system*
- (2) Service equipment enclosure*
- (3) Grounded conductor at the service*
- (4) Grounding electrode conductor, if of sufficient size*
- (5) One or more grounding electrodes used*

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Below is a Real Question from our Electrical Continuing Education Courses for Electrical License Renewal:

One of the following is NOT permitted to be used to bond the gas piping. Which of the following CANNOT be used to bond the gas piping system?

- A: Grounding electrode conductor.
- B: Service equipment enclosure.
- C: A grounding electrode.
- D: The intersystem bonding terminal.

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Qs Answered: None Yet!

Your Score: None Yet!

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