

**ELECTRICAL BONDING REQUIREMENTS FOR GAS PIPING SYSTEMS****Date of Issue: October 1, 2022****No: IB-GA 2017-04****Revision: 01****Topic**

CSA B149.1 Natural gas and propane installation code clause 4.7 requires that interior metal gas piping systems connected to a gas-fired appliance with an electrical connection **shall** be made electrically continuous and bonded in accordance with CSA C22.1 Canadian Electrical Code, Part I. requirements (BC Electrical Code) except where specific conditions are met.

In addition to the manufacturer's installation instructions, clause 4.7 further provides specific requirements for corrugated stainless-steel tubing (CSST) systems. All applicable CSST bonding requirements must be met unless the piping material is **certified** for lightning strike protection.

Note: **Gas piping system** includes all components that convey gas or liquids, such as piping, tubing, valves, hoses, and fittings, from the point of delivery to the inlet of the appliance.

**Important information**

The requirement to provide an equipotential bond between interior metal piping and the building electrical grounding system was introduced in the 1975 edition of the Canadian Electrical Code. BC Electrical Code rule 10-700 defines the current equipotential bonding requirements for non-electrical equipment.

Requirements for equipotential bonding exist within the BC Electrical code, despite gas piping systems being exempt under specified conditions in the gas code. Bonding of gas piping systems will continue to be enforced under the electrical installation permit and will only be enforced under the gas installation permit where required by the B149.1 Natural gas and propane installation code.

The purpose of bonding interior metal piping to the building grounding system is to provide a safe electrical path to ground should the metal piping become electrically energized. This safety requirement is intended to protect the system user from shock and the gas piping system from damage.

Cases have been reported involving CSST systems damaged during lightning storms due to inadequate electrical bonding to ground. This has resulted in the dangerous release of gas. **Unless** certified to protect from lightning strikes, CSST systems or CSST included in a piping system shall be bonded in accordance with the manufacturer's installation instructions **and** CSA B149.1.

Equipotential bonding of nonelectrical systems including gas piping systems is **regulated electrical** work. It is the responsibility of licensed gas contractors and homeowners to ensure that a licensed electrical contractor performs this scope of regulated work.

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**References:**

Gas Safety Regulation  
CSA B149.1 – Natural gas and propane installation code  
BC Electrical Code