

Proper bonding of corrugated stainless steel tubing (CSST) gas distribution systems

is necessary to reduce the possibility of damage from lightning-induced surges by eliminating electrical potential between various metallic building systems, including the gas distribution. Firefighters have reported damage to CSST in buildings.

Section 250.104 (B) of the National Electrical Code allows the equipment grounding conductor of the feeder or branch circuit to bond the gas piping at the supplied equipment, but not all gas appliances have an electrical component. Where CSST is used it must be bonded directly to the grounding electrode system of the premises.

The 2009 edition of National Fuel Gas Code 54 (NFPA) requires CSST gas piping systems to be directly bonded to the building's electrical system:

- 7.13.2 CSST. CSST gas piping systems shall be bonded to the electrical service grounding electrode system at the point where the gas service enters the building. The bonding jumper shall not be smaller than 6 AWG copper wire or equivalent.
- 7.13.3 Prohibited Use. Gas piping shall not be used as a grounding conductor or electrode. This does not preclude the bonding of metallic piping to a grounding system. This requirement applies to all CSST, without exception. It includes those CSST products with no additional electrical bonding requirements in the manufacturer's installation instructions.

The bonding of CSST products is enforceable under the State Mechanical Code. According to the Minnesota Electrical Act, the installation of the bonding conductor must be performed by a licensed electrical contractor. A separate electrical inspection permit is not required, as the inspection of the bonding conductor is done with the inspection of other electrical work on the premises.

CSST shall be bonded with approved pipe grounding clamps at the point nearest the entrance of the gas piping to the premises. The connection must be made at a fitting, pipe or manifold that is directly connected to the CSST and not to the tubing or tubing fittings. The bonding conductor shall be no smaller than 6 AWG copper, be as short as possible and connect directly to the premises grounding electrode system or electrical service equipment enclosures or raceways.

Proper bonding of a gas distribution system of CSST requires jobsite coordination, cooperation and communication between the installer of the gas distribution system and the electrical contractor.