

Corrugated Stainless Steel Tubing Policy Requirements



General information

Corrugated stainless steel tubing (CSST) must be bonded to the structure's electrical system in accordance with NFPA 70 National Electrical Code (NEC) using bonding clamp(s) and wire sized appropriately per the manufacturer's instructions.

- **CSST bond wires or clamps shall NEVER be connected to:**

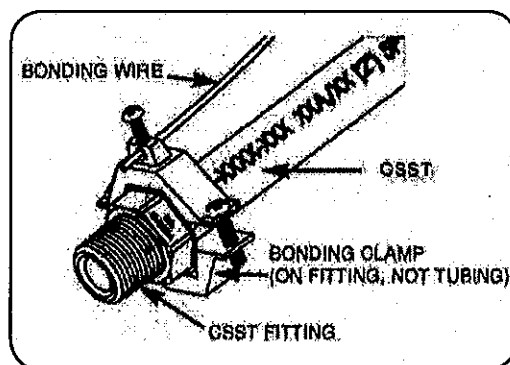
- Company natural gas facilities.
- A ground independent of the electrical service grounding system.

NOTE: If the systems are not bonded properly, the difference in potential can cause an arc which may damage CSST.

- The corrugated stainless steel portion of the pipe (clamps must be attached to the brass fitting, steel manifold, or other rigid customer-owned pipe).

- **CSST bond wires or clamps shall ALWAYS be connected to:**

- Customer piping as close to the natural gas meter as practical.
- The CSST brass fitting, a customer-owned steel manifold, or a customer-owned rigid pipe component connected to a CSST fitting.
- The electrical service grounding system. This connection may be made at either the ground rod, on the ground wire running to the rod, or in the electric service panel.



Bonding CSST does not prevent damage from a direct lightning strike. It is intended to direct voltage/current from nearby lightning strikes safely to the ground.

Direct bonding is required for all piping systems incorporating CSST. This includes piping connected to natural gas equipment that is grounded to the structures electrical grounding system.

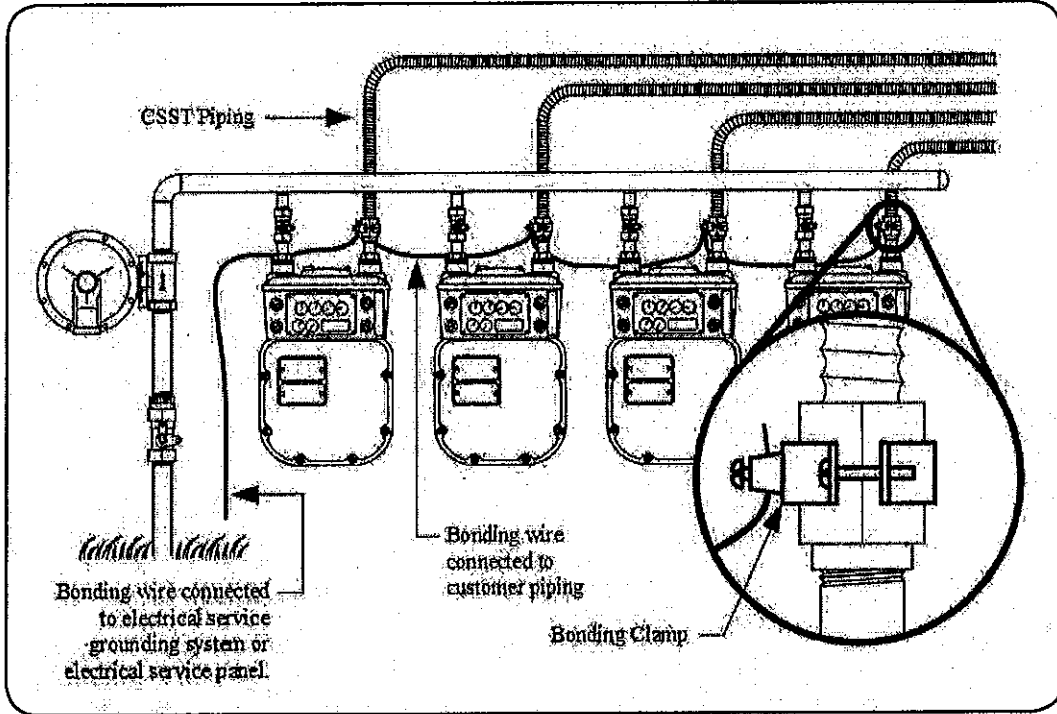
CSST piping shall not be used as a grounding path for appliances or electrical systems.

Flexible appliance connectors do not need to be bonded.

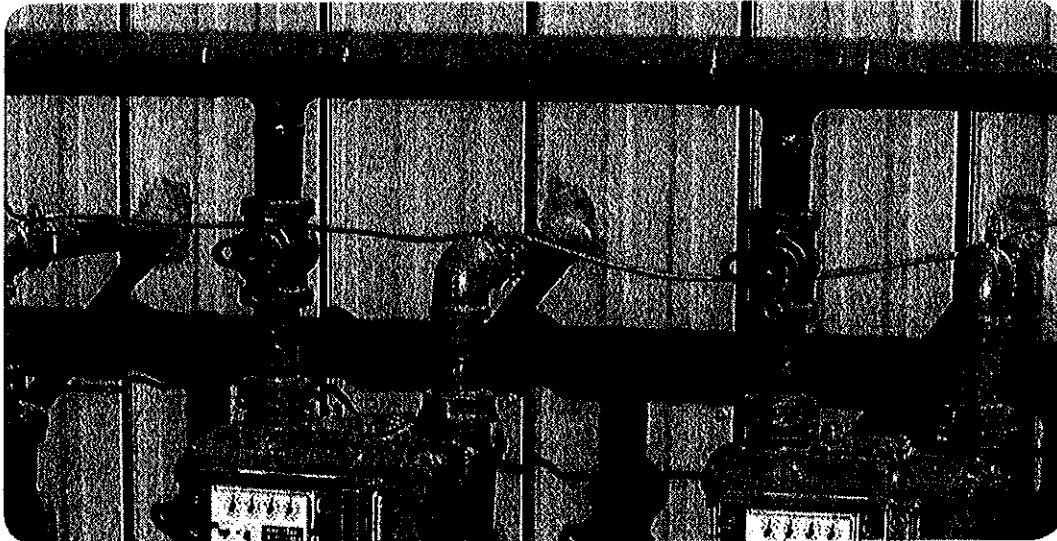
- Flexible connectors attach directly to the appliance downstream of an appliance shut-off valve and cannot be installed through walls, floors, or partitions.
- CSST is usually routed beneath, through, and along floor joists in the basement, inside interior walls, and on top of ceiling joists in attic spaces.

Acceptable CSST installations

Acceptable CSST installation - example 1

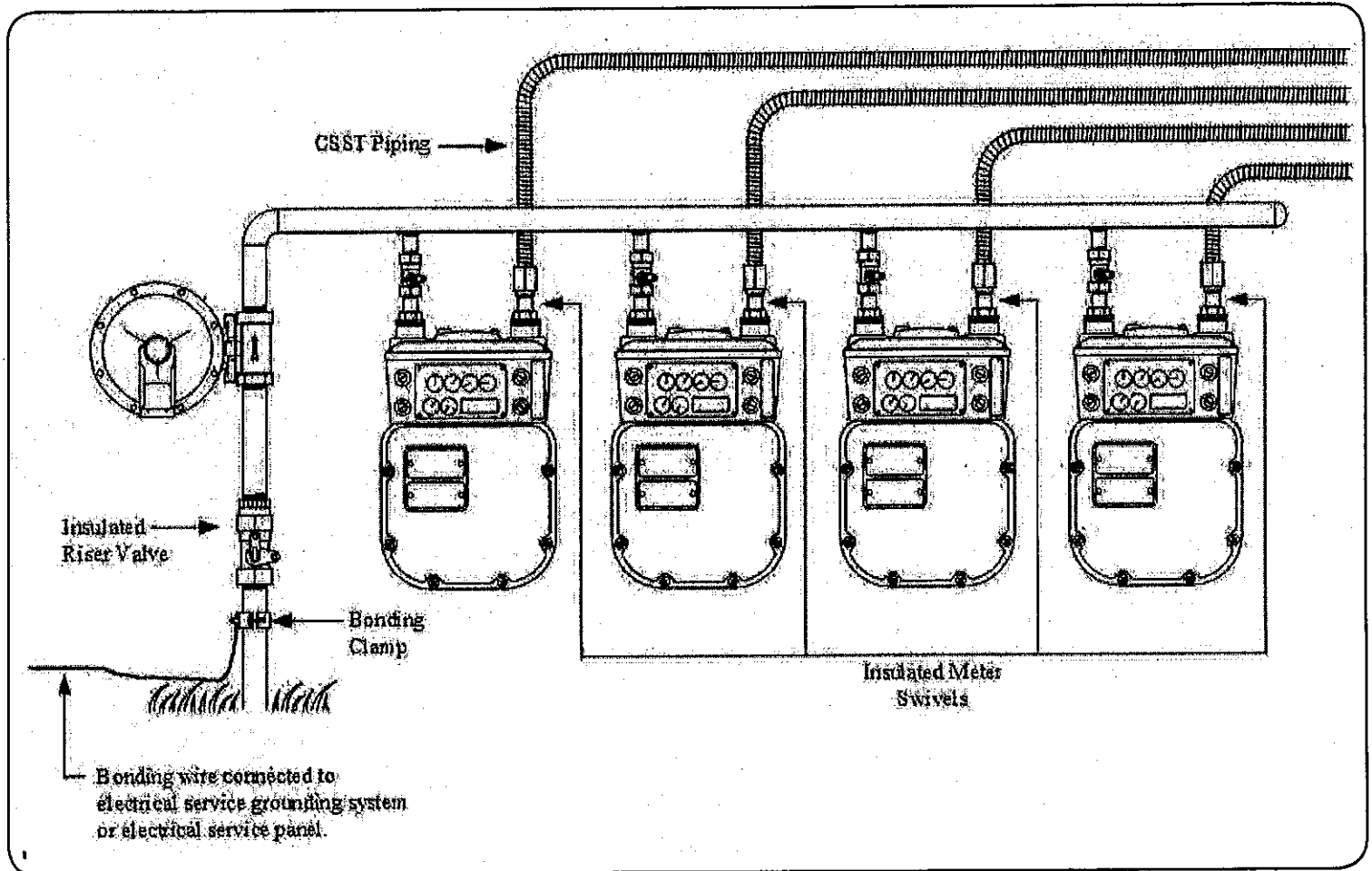


Acceptable CSST installation - example 2



Unacceptable CSST installations

Unacceptable CSST installation - example 1

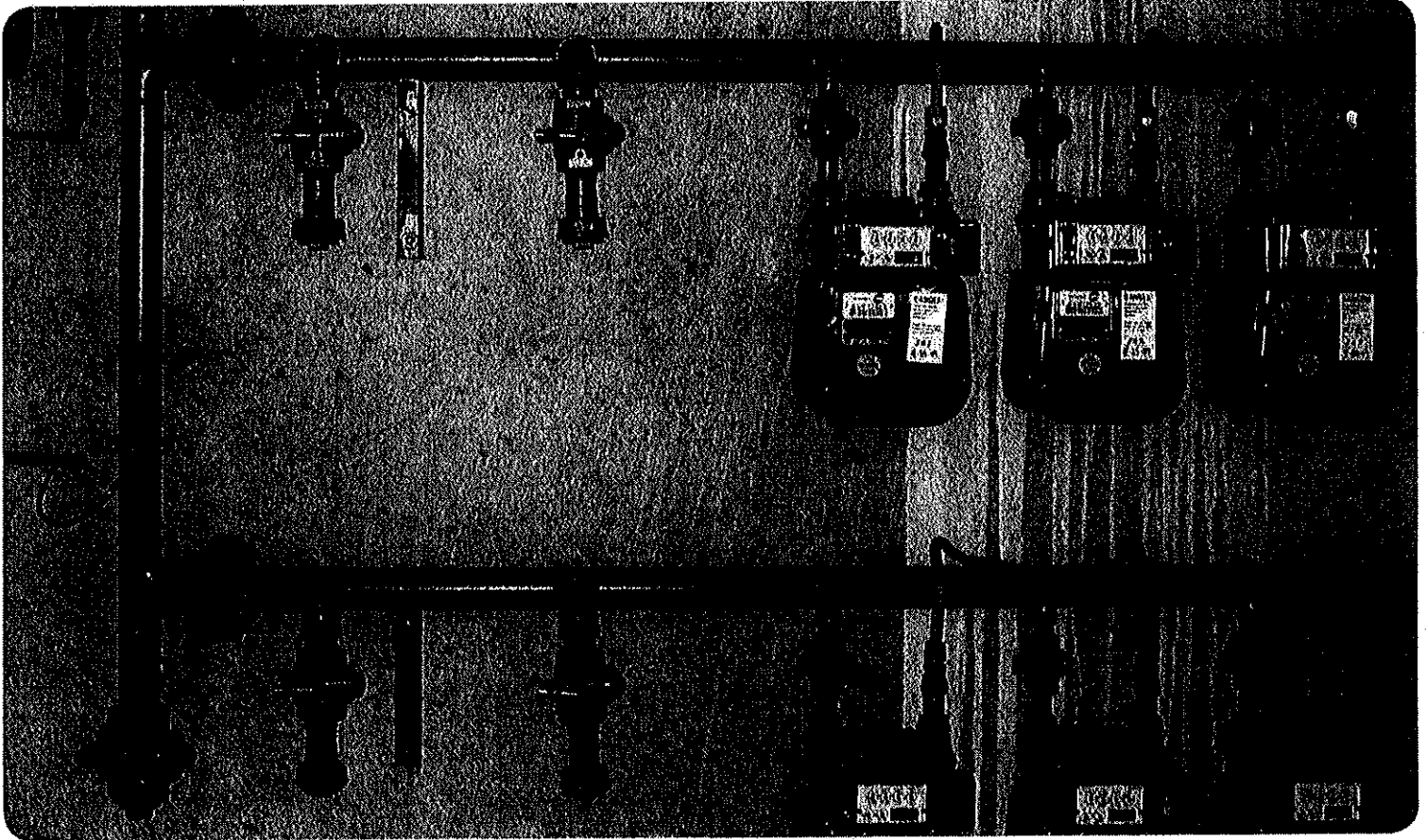


- This installation shows an attempt to bond customer-owned CSST piping using company natural gas facilities. In this scenario, there is no connection between the CSST piping and the bond wire due to insulators located at the riser valve and the meter outlet swivels.

Unacceptable CSST installation - example 2 (next page)

Unacceptable CSST installations

Unacceptable CSST installation - example 2



- This picture shows an attempt to bond customer-owned CSST piping using company natural gas facilities. In this scenario, there is no connection between the CSST piping and the bond wire due to insulators located at the meter outlet swivels.