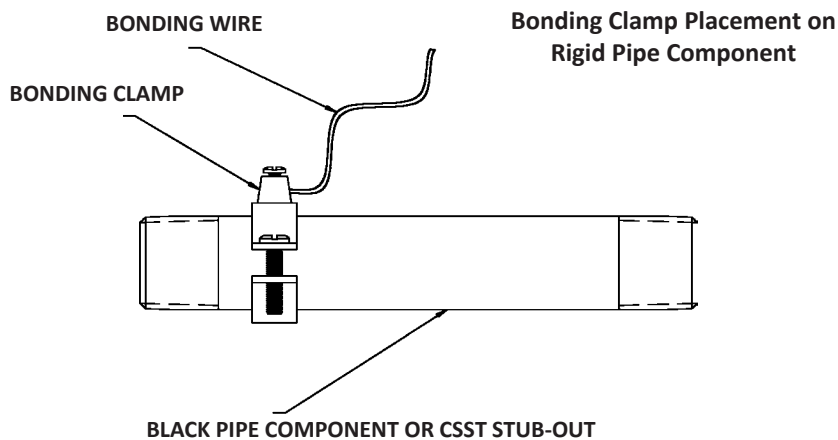
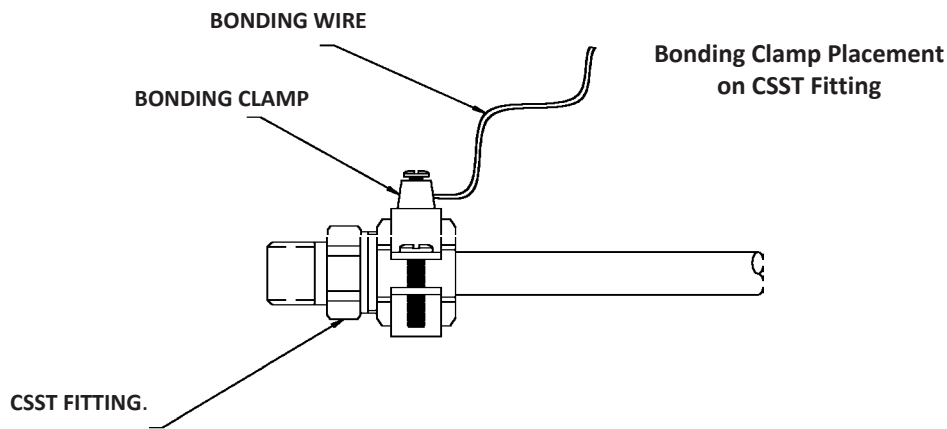


## 4.10 Electrical Bonding

- *Per the 2009 or later versions of national model codes [NFPA-54 (National Fuel Gas Code), the Uniform Plumbing Code (UPC), and the International Fuel Gas Code (IFGC)], any gas piping system containing at least one segment of non-conductive (Yellow) coated CSST must be bonded to the buildings electrical grounding electrode system.*
- ***Pro-Flex® strongly recommends the equipotential bonding of all metallic mechanical systems to the structure's grounding electrode. Bonding serves to protect people and equipment in the event of an electrical event.***
- *All CSST manufactured by Pro-Flex, LLC shall be bonded in accordance with the national model codes and these instructions. If there is an inconsistency between these instructions and local codes, the local codes shall control*
- *There are no additional bonding requirements for **Flak Jacket™ CSST** set forth in the manufacturer's written instructions. **Flak Jacket™ CSST** is to be bonded in accordance with the National Electric Code NFPA 70 section 250.104(B) in the same approach as the minimum requirements for rigid metal piping. However, installers must follow any local code requirements that are more stringent than the manufacturer's written instructions.*
- ***Flak Jacket™ CSST** shall not be painted, otherwise coated or have labels applied.*
- *Neither **Flak Jacket™** nor **Pro-Flex® CSST** flexible gas piping are to be used as a grounding conductor or electrode for an electrical system.*

### **When Direct Bonding is Required by Local Code or Manufacturer's Requirement:**

- a) Yellow jacketed Pro-Flex® CSST must be bonded in accordance with this section.**
- b)** The bonding must be performed by a qualified person recognized by the local jurisdiction [AHJ] as capable of performing such work.
- c)** A single bonding clamp that is listed to UL 467 is to be attached to *EITHER* a CSST Fitting *OR* a rigid pipe or rigid component at any point in the gas piping system downstream of the gas meter or second stage regulator in an accessible location.
- d)** The bonding conductor [wire] is to be solid or stranded 6 AWG copper [minimum] or equivalent and not to exceed 75 feet in length. The effectiveness of the bond will be improved utilizing the shortest practical conductor [wire] length.
- e)** The bonding conductor [wire] is to be directly and permanently connected to the electrical service grounding system. This can be achieved through a connection to the ground buss in the electrical service enclosure, the grounding electrode conductor, or the grounding electrode used. All grounding electrodes used shall be bonded to the electrical service grounding electrode, or if available, the lightning protection grounding system.
- f)** The bonding shall be done in accordance with NFPA-70 [the National Electric Code] or CSA-C22.1 [the Canadian Electric Code].
- g)** CSST shall not be directly supported on or by other electrically conductive systems including metallic water pipe, electric power or communications cables, HVAC ducts or plenum, and structural steel beams or framing.
- h)** A daisy chain configuration may be used to bond multiple gas services [meters] that are located within a single structure.



⚠ Depending upon conditions specific to the location of the structure in which the flexible gas piping system is being installed, including but not limited to whether the area is prone to lightning activity, the owner of the structure should consider whether a lightning protection system is necessary or appropriate. Lightning protections are beyond the scope of this guide, see NFPA 780, the Standard for the Installation of Lightning Protection Systems, and other standards.

⚠ Failure to properly bond **Pro-Flex**® flexible gas piping systems in accordance with NFPA 70 [NEC] may lead to damage to the CSST system in the event of a lightning strike.

⚠ Proper bonding will help reduce the possibility and/or severity of arcing between conductive systems when energized by a nearby lightning strike.

⚠ For additional information about electrical bonding of CSST see ICC 2015 Code Notes listed in the Literature Download section of this website.