

Direct Bonding of Standard (Yellow) CSST

Direct bonding is required for all gas-piping systems incorporating standard (yellow) CSST whether or not the connected gas equipment is electrically powered. This requirement is provided as part of the manufacturer's instruction for single-family and multi-family buildings and required by the National Fuel Gas Code, the International Fuel Gas Code and the Uniform Plumbing Code. A person knowledgeable in electrical system design, the local electrical code and these requirements should specify the bonding for commercial applications.

Standard CSST installed inside or attached to a building or structure shall be electrically continuous and direct-bonded to the electrical ground system of the premise in which it is installed. The gas piping system shall be considered to be direct-bonded when installed in accordance with the following:

The piping is permanently and directly connected to the electrical service equipment enclosure, the grounded conductor at the electrical service, the grounding electrode conductor, or to one or more of the grounding electrodes used. For single and multi-family structures, **a single bond connection** shall be made downstream of the individual gas meter for each housing unit and upstream of the first CSST connection. The bonding conductor shall be no smaller than a 6 AWG copper wire or equivalent. The bonding jumper shall be attached in an approved manner in accordance with NEC Article 250.70 and the point of attachment for the bonding jumper shall be accessible. Bonding/grounding clamps shall be installed in accordance with its listing per UL 467 and shall make metal-to-metal contact with a steel pipe component or first CSST fitting. This bond is in addition to any other bonding requirements as specified by local codes.

The corrugated stainless steel tubing portion of the gas piping system shall not be used as the point of attachment of the bonding clamp at any location along its length under any circumstances. See examples provided in Figures 1 and 2.

Fig. 1. Bonding Clamp on Steel Pipe

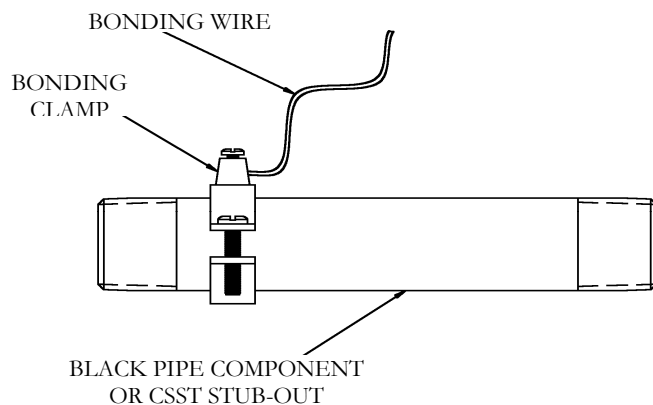
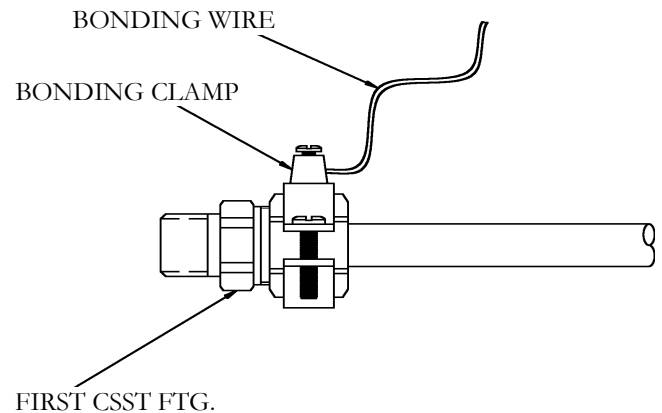


Fig. 2. Bonding Clamp on First CSST Fitting



Manufacturers of black jacketed CSST products which have been tested and listed to ICC-ES LC 1024, "CSST Utilizing a Protective Jacket", may not require or include in their instructions the additional direct-bonding step that is required with standard (yellow) CSST products. However local codes are controlling and may differ from manufacturer's requirements. Local codes are governing and must be adhered to.