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Electrical Bonding of Gastite® CSST

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This Technical Bulletin provides requirements for the direct bonding of Gastite® CSST. These requirements supersede any prior documents and are mandatory manufacturer's instructions until such time as requirements are adopted by the appropriate national/state model codes and direct bonding installation instructions are specified therein. This document replaces Technical Bulletin TB2007-01 and Section 4.10 Electrical Bonding/Grounding of the January 2008 Gastite Design & Installation Guide. This Technical Bulletin is effective for all Gastite CSST installed from this date forward.

Direct bonding of Gastite® CSST is required for all gas-piping systems incorporating Gastite® 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. A person knowledgeable in electrical system design, the local electrical code and these requirements should specify the bonding for commercial applications.

Gastite® 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 (where of sufficient size) 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 any 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 the piping. This bond is in addition to any other bonding requirements as specified by local codes.

For attachment to the CSST gas piping system, a single bonding clamp must be attached to either a segment of steel pipe or to a rigid pipe component. The corrugated stainless steel tubing portion of the gas piping system shall not be used as the point of attachment of the bonding conductor at any location along its length under any circumstances. See examples provided in Figures 1 and 2.

Proper bonding and grounding will reduce the risk of damage and fire from a lightning strike. Lightning is a highly destructive force. Even a nearby lightning strike that does not strike a structure directly can cause all electrically conductive systems in the structure to become energized. If these systems are not adequately bonded, the difference in electrical potential between the systems may cause the charge to arc from one system to another. Arcing can cause damage to CSST. Direct bonding and grounding as set forth above will reduce the risk of arcing and related damage over a non direct bonded system.

Depending upon conditions specific to the location of the structure in which the Gastite system is being installed, including but not limited to whether the area is prone to lightning, the owner of the structure should consider whether a lightning protection system is necessary or appropriate. Lightning protection systems are beyond the scope of this bulletin, but are covered by NFPA 780, the Standard for the Installation of Lightning Protection Systems and other standards.

As with all Gastite documents, the techniques outlined within this bulletin are subject to all local fuel gas and building codes.

Figure 1 **Bonding Clamp on Pre-Fabricated Meter Stub Out**
(Remove any paint on pipe surface beneath clamp location)

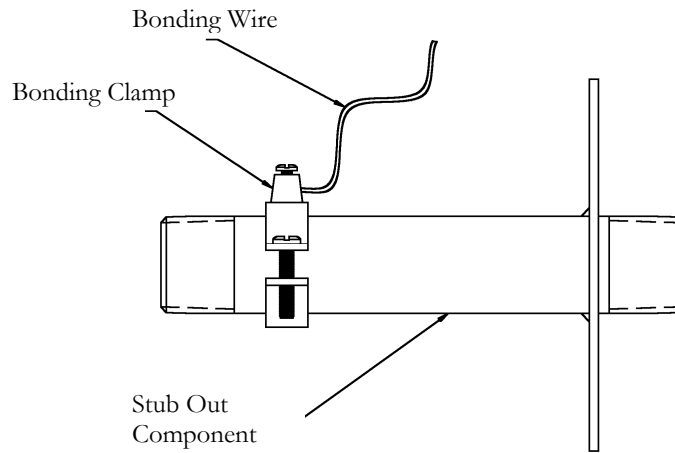
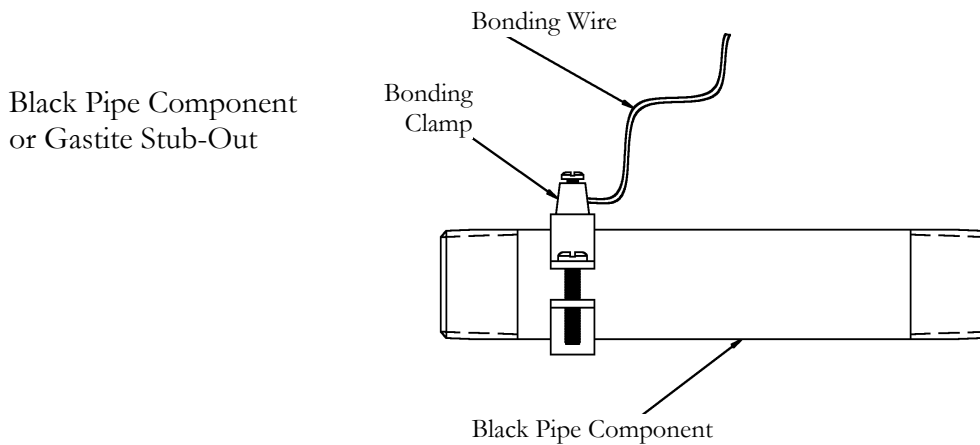


Figure 2 **Bonding Clamp on Steel Pipe Segment**
(Remove any paint or coating on pipe surface beneath clamp location)



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