

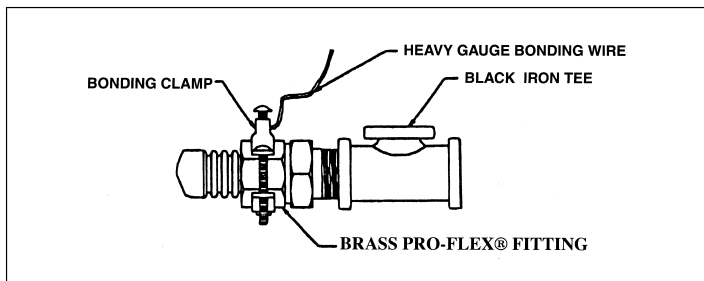
TECHNICAL BULLETIN 112006

ELECTRICAL BONDING & GROUNDING

NOVEMBER 1st, 2006

ADDENDUM TO the PRO-FLEX® CSST INSTALLATION/TRAINING GUIDE (reprint #11 08/06) and REFERRING TO SECTION 4.5, page 28, ELECTRICAL BONDING/GROUNDING

In accordance with the National Electrical Code (NEC) ANSI/NFPA 70 proper bonding and grounding of gas-piping systems in a structure and the structure's electrical system by a qualified electrician is required. Adhering to this requirement will provide an effective electrically continuous path to conduct stray voltage or current safety to ground. The NEC also provides that it is a good practice to bond all metallic systems and objects that could be energized by an electrical charge. Consistent with these requirements, Tru-Flex Metal Hose Corp., requires the gas-piping system to be bonded to the electrical earth grounding system of the structure through the use of a bonding clamp and wire. The bonding point must be in as close proximity to the electrical panel as practical; close proximity of the bonding point to the gas meter is also desirable. The wire gauge for this bond must be sized, at a minimum, for the full amperage available through the electrical service. Further minimizing impedance over the bonding assembly is desirable. The NEC should be referenced for additional requirements and specified techniques for bonding and grounding.



Drawing #1

For attachment to the Pro-Flex® gas piping system, bonding clamps must be attached to the Pro-Flex® brass fitting, a steel manifold or to a rigid pipe component connected to a Pro-Flex® fitting, (drawing #1). The

corrugated stainless steel tubing portion of the gas piping systems, SHALL NOT be used as the bonding attachment point under any circumstances. For sizing bonding connectors, refer to ANSI/NFPA 70, Table 250-66.

Bonding and grounding requirements are also addressed in the National Fuel Gas Code, ANSI/NFPA 54, specifically requires: "each above ground portion of a gas piping system which is likely to become energized shall be electrically continuous and bonded to a designed, permanent, low impedance effective ground fault current path."

Lightning is a highly destructive force. Even a nearby lightning strike that does not strike a structure directly can cause systems in the structure to be energized. Proper bonding and grounding may reduce the risk of damage and fire from certain lightning strikes. If systems that could become energized by lightning are not all properly bonded, the differences in potential between such systems may cause the charge to arc from one system to another. Arching can cause damage to CSST. Bonding and grounding CSST as set forth above will help reduce the risk of arching and related damage.

Depending upon conditions specified to the location of the structure in which the Pro-Flex® 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 the bulletin, but are covered by NFPA 780, the Standard for Installation of Lightning Protection Systems, and other standards.

As with all Pro-Flex® guidelines, the techniques outlined within this bulletin are subject to all local fuel gas, building and electrical codes.



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