Why You Should Bond
Corrugated Stainless Steel Tubing (CSST)

WARDFLEX
An ASC Engineered Solution

The WARDFlex® corrugated stainless steel tubing (CSST) system revolutionized the gas plumbing industry with a time- and cost-saving solution to the inherent problems of rigid steel pipe in delivery installations. With unrivaled flexibility, WARDFlex eliminates multiple service points at turns and connections and ensures reliable flow from gas meters to appliances, giving professional contractors a smart alternative to black-steel pipe and other CSST products.

Bonding

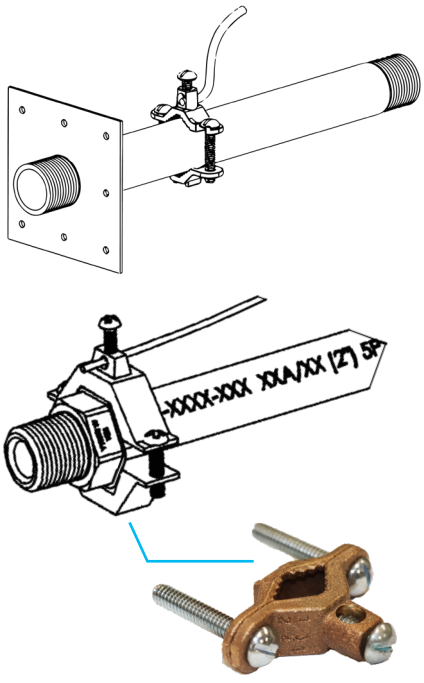
Connecting of metallic systems to establish electrical continuity.

Grounding

Attachment of bonded systems to the earth through the grounding electrode system (ex. an electrical panel is installed at a home and there is a copper ground rod driven into the earth below).

Bonding Clamps

Bonding clamps must meet the UL467 standard. The clamp shall be attached to a clean rigid pipe, pipe nipple, or pipe fitting including a WARDFlex fitting. Never attach the clamp to the CSST tubing. The bonding clamp can be installed anywhere in the gas piping system as long as the bond wire does not exceed 75' in length to get to the electrical grounding system. The bonding wire shall be equivalent to or larger than a #6 AWG copper wire.



This WARDFlex information sheet will provide guidance for safe and proper bonding of our WARDFlex products.

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Building Connections That Last™

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The reason for bonding the system is to create an equipotential path for the energy to be routed to ground. If completed in this manner, all energy will take the same path to ground and arcing will be minimized along with the damage it can cause. The only way to reduce the threat from a direct lightning strike is to add a lightning protection system, which may help reduce the charges of the structure and its systems. In addition, never add an additional ground rod to the structure and bond to it. This creates two separate systems in the structure, which could increase the likelihood of arcing in a high energy event.

WARDFlex® Corrugated Stainless Steel Tubing (CSST)

Yellow WARDFlex CSST consists of a standard polyethylene coating and must always have a direct bond in the gas piping system.

If the yellow CSST was added to an existing iron pipe or copper system, the gas piping system is now required to be bonded. Bonding must be completed even if the gas piping system is attached to a gas appliance that is also attached to the electrical system in the structure. A furnace or cook top, range or dryer that uses both electricity and gas will fall into this category.

WARDFlexMAX® Corrugated Stainless Steel Tubing (CSST)

WARDFlexMAX is a black conductive coated CSST. This coating meets the requirements of the LC 1024 standard for single layer conductive coated products and helps dissipate the energy during an arcing, which reduces the chance of damage to the tubing if excess electrical energy is applied to the product. This energy can enter the system via an indirect lighting strike or a ground fault failure within the structure and can damage the tubing if it jumps or arcs to another metallic system in the structure that has a shorter path to ground. Ward does not require that the WARDFlexMAX product be directly bonded.

Local code may or may not agree with this so always check with local jurisdiction before installing the product. The local code will determine who can perform the bonding, how the bonding is to be done, and where it will tie into the grounding system.