PARKER HANNIFIN CORPORATION – PARFLEX DIVISION

! WARNING: Failure or improper selection, design, installation, testing, repairing or use ("Application") of Corrugated Stainless Steel Tubing and related accessories ("CSST") used to convey fuel gas such as natural gas or propane in building structures can cause death, personal injury and property damage. Possible consequences of failure or improper selection, design, installation, testing or use of these Products include but are not limited to:

- Holes and leaks in the tubing caused by electrical arcing between the tubing and an adjacent metal object such as a furnace duct, caused by lightning (whether direct lightning strikes or strikes to trees or ground or poles or wire long distances from the CSST).
- Holes and leaks in the tubing caused by puncture by nails, drills, or other sharp objects.
- Holes and leaks in the tubing caused by kinking.
- Leaks in the fittings and other accessories.
- Fires or explosion or burning of the conveyed gas, or asphyxiation from the conveyed gas, resulting from holes and leaks.

Before selecting, installing, using or repairing any CSST, the instructions below, as well as the Design and Installation Guide provided by the manufacturer, must be read and followed. CSST must not be used unless properly bonded and grounded as described in the instructions below.

1. Advantages And Risks Of Installing CSST. CSST provides significant installation and other advantages over standard (not corrugated) steel and black iron gas delivery systems because of CSST's corrugated design and thinner wall dimensions. However, these same wall dimensions may make CSST more likely than standard steel pipe or black iron pipe to be punctured by a nail or other sharp objects. Additionally, CSST may be damaged by lightning strikes. Lightning is a known highly destructive force. In the event of high voltage from a lightning strike (which can be a direct strike on the building structure or even a strike to trees or ground or poles or wires long distances away from the building structure), CSST can momentarily be at a much higher or lower electrical potential than adjacent metal systems in the building such as heating ducts, copper pipes and wires. If this occurs, an electric spark may arc between the CSST and adjacent metal systems. This arcing can melt holes and cause leaks in the CSST.

2. Bonding And Grounding Of CSST. CSST must not be used unless the CSST is properly bonded and grounded according to applicable building code requirements. Bonding consists of making an electrical connection between the grounding electrode and any equipment, appliance or metal conductor. Grounding consists of making an electrical connection to the general mass of the earth. An electrical connection to the earth must be made by bonding the CSST to the grounding system through the use of a bonding clamp and wire in accordance with any applicable building code requirements, providing a path for any electrical current. Bonding clamps must be attached to a Parflex brass fitting, a steel manifold or to a rigid pipe component connected to a Parflex fitting. The CSST portion of the gas piping system must not be used as the bonding attachment. CSST also must not be used as a grounding electrode or as the grounding path for appliances or electrical systems. Parker recommends that the CSST is equipotentially bonded and grounded using the shortest distance possible. Equipotential bonding consists of making an electrical connection between the CSST and any adjacent metal systems in the house, such as appliances, metal vents, flues, and pipes, to create uniform electrical potential. The latest edition of the National Electric Code and applicable building code requirements should be consulted for additional requirements and specific techniques for bonding and grounding.

3. Installation Instructions. Installation of CSST requires strict adherence to all applicable building codes, as well as to the Parker Design and Installation Guide, during the Application of the CSST. The Parker Design and Installation Guide sets forth the recommended practices to the professional gas service installer and other trade professionals in the Application of the CSST. The recommended practices apply only to Parker CSST. Use of other manufacturers' CSST components or systems in conjunction with Parker CSST is strictly prohibited. For example, Parker tubing will not work with fittings from other suppliers due to differences in dimensions. In any case in which CSST of different manufacturers is to be used in the same building structure (such as in the case of repair), an approved standard (not corrugated) steel or black iron pipe must be used to connect between the CSST of different manufacturers. Improper installation of Parker CSST or any fuel gas system can cause death, bodily injury or property damage, resulting from explosions, fires, or gas asphyxiation.

4. Scope Of Manufacturer Installation Instructions. Where a conflict or discrepancy exists between the Parker CSST Design and Installation Guide and applicable state or local requirements, the state or local requirements

shall take precedence. Nothing in the Parker Design and Installation Guide shall imply that it contains the best or only approved method for installing Parker CSST or that Parker CSST is appropriate for all circumstances. The Parker CSST Design and Installation Guide also shall not be construed to limit any future developments in CSST installation practices or gas piping technology.

5. Qualified Installer. Because the use of natural gas, propane and other fuel gas can be dangerous, special attention must be given to the proper Application of any gas piping system. Application of CSST manufactured or distributed by Parker must be performed only by a qualified Installer. The Installer must be qualified by all applicable state and/or local authorities having jurisdiction and must have successfully completed the Parker training program for the CSST prior to the Application.

6. Lightning Protection System. In order to further increase protection of an entire building structure from potential lightning damage, the Installer should consider the installation of a lightning protection system pursuant to NFPA 780 or other recognized standards, particularly in those areas of the country prone to lightning strikes. Evaluation of the need for (and procedures for installing) lightning protection systems, as set forth in NFPA 780 or similar standards, is beyond the scope of these instructions and the Parker Design and Installation Guide for CSST, because this subject is dependent upon local climate conditions, local building codes, electrical codes, and building and electrician practices. Installers and users of CSST should consult with professional electricians and/or lightning protection professionals to determine the need for and the design or use of a lightning protection system.