

TracPipe® CounterStrike® CSST Engineering Specification

A23 01 94 FUEL GAS PIPING

Part 2 Products

Natural Gas and LP Gas

2" and Smaller- **TracPipe® CounterStrike®** Corrugated Stainless Steel Tubing (CSST)

Codes: ICC Codes (IFGC, IRC, IMC, IPC), NFPA 54, UPC, CAN/CSA B149.1, NFPA58

Standards: ANSI LC1/CSA 6.26, ASTM E84 (UL723), ICC LC 1024, ANSIZ223.1

Listings: CSA, ICC PMG1058, UL (Through Penetration Firestop System), IAPMO ES ER-0227, ICC ESR-4565 (Seismic Performance)

Pipe - *TracPipe CounterStrike* tubing shall be 300 series Stainless Steel Strip conforming to ASTM A240 rated for 25 psi and have an elevated pressure rating of 125G for sizes up to 1 ¼" and 25G for 1 ½" and 2". *TracPipe CounterStrike* tubing shall not be subjected to heat treating or annealing after the corrugation forming operation.

Conductive Jacket - *TracPipe CounterStrike* jacket shall be an extruded fire-retarded engineered polymer designed to enhance the energy dissipating properties of the flexible gas piping. Conductive jacket shall conform to ASTM E-84 (UL723) flame spread rating not to exceed 25 and ASTM-E84 (UL723) smoke density rating shall not exceed 50. Conductive jacket shall be resistant to UV.

Fittings - *TracPipe CounterStrike AutoFlare®* fittings shall be made of yellow brass and be tested and listed by CSA International for use in concealed locations. The fittings shall provide a metal to metal seal. Brass fittings shall not contain gaskets or O-rings to facilitate the seal between the tubing and the fitting.

Approved Manufacturers - Omega Flex, Inc.

Quality Assurance - *TracPipe CounterStrike* CSST shall be listed by CSA International to the performance requirements of ANSI LC 1 / CSA 6.26. The conductive jacket shall meet the requirements of ANSI LC 1 / CSA 6.26, Part 5.16.

Installer Qualifications - Each installer must meet applicable state and local requirements established by the Authority Having Jurisdiction (AHJ) and must be successfully trained through the *TracPipe CounterStrike* manufacturer's installation program.

Installation – The installation shall be in compliance with the *TracPipe CounterStrike* Design Guide and Installation Instructions.

Appliance Terminations: Termination Mount fittings are to be used for the tubing at all moveable appliance locations and other stub-out points. The tubing may be run directly to the manual shut-off valve on fixed appliances

Regulators: Regulators must be listed to a recognized national standard for pressure regulators. Line Pressure Regulators listed to ANSI Z21.80 and equipped with a vent limiter do not require a vent line to be run outdoors.

Protection: Striker plates shall be used where necessary and marked with the symbol of the Manufacturer and CSA International. Striker Plates shall be made from carbon steel, heat treated to >RB75 and <RB85. Floppy type RW galvanized steel electrical conduit shall be used for additional protection.

Identification - *TracPipe CounterStrike* shall be marked with the manufacturer's name or symbol, approving agencies, pressure rating and manufacturing date code. The piping system shall be marked by the manufacturer with the word "GAS" in black letters every two feet. Do not paint, stencil or apply unapproved labels to the piping system.

Electrical Bonding - Flexible gas piping shall be bonded in accordance with the National Electrical Code NFPA 70 Article 250.104 and the National Gas Code NFPA 54, and any local requirement which may exceed the national codes. If bonding is required, a bonding clamp must be attached to the brass fitting or to a black pipe component in the same electrically continuous gas piping system. The corrugated stainless steel portion of the gas piping shall NOT be used as a bonding attachment under any circumstance.

Seismic Performance - CSST Flexible Gas Piping must be listed by ICC for Seismic Performance. Flexible gas piping shall be rated for installation in Seismic Design Categories C, D, E and F and structures assigned an I_p of 1.5. Evaluation should be in accordance with Section 13.2.5 of ASCE/SEI 7-16

Underground and Under Slab Gas Piping

Piping - *TracPipe® PSII* Underground piping shall consist of 300 type stainless steel csst with an integral polyethylene sleeve. The piping system shall be designed to withstand superimposed loads. The sleeve shall have internal vent channels running lengthwise to direct any leakage along the pipe to the end fitting.

Fittings - *TracPipe PSII* fittings shall be made of yellow brass and be tested and listed by CSA International for concealed use. Joints shall be a metal-to-metal seal with no gaskets.

Installation - For gas piping under building slabs, requirements for Plumbing, Mechanical and Fuel Gas Codes shall be followed for encasement in non-metallic conduit with venting to the atmosphere. The construction of *TracPipe PSII* pre-sleeved system does provide the encasement and venting capabilities required by codes.

Joints - Underground fittings are not permitted under a building slab.

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Jacket - CSST jacket shall be an extruded fire-retarded engineered polymer designed to enhance the energy dissipating properties of the flexible gas piping. Conductive jacket shall conform to ASTM E-84 (UL723) flame spread rating not to exceed 25 and ASTM-E84 (UL723) smoke density rating shall not exceed 50. Conductive jacket shall be resistant to UV.

Fittings - CSST fittings shall be made of yellow brass and be tested and listed by CSA International for use in concealed locations. The fittings shall flare the tubing using a stainless steel insert to pilot the tubing ID or an integral snap ring in a one piece fitting. The fitting and tubing assembly shall provide a metal to metal seal. Brass fittings shall not contain gaskets or O-rings to facilitate the seal between the tubing and the fitting.

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