

CASE STUDY

TracPipe®CounterStrike® in Residential Structures

TracPipe® CounterStrike® FGP-CS-500 Pat. 7044167 B2 224

- Save Time
- Save Money
- Increase Installation Options

Product:

TracPipe®CounterStrike® Flexible Gas Piping in Residential Structures

Location:

Pennsylvania



Lightning is a tremendously powerful natural phenomenon that varies widely across the country. The force of a lightning strike can damage homes and electrical and mechanical systems, including gas piping. Bonding of gas piping (as required by applicable codes) to the electrical ground substantially reduces this risk. However builders looking to improve safety for homeowners have asked their contractors to change from standard yellow-jacketed CSST to Counterstrike® flexible gas piping.

A large custom home builder in western Pennsylvania was one of the first to specify Counterstrike® in all of their homes. Before the switch, the home builder dealt with several lightning issues a year, but since switching to Counterstrike® there have been no problems with lightning and gas piping. Other home builders in other high lightning prone areas throughout the mid-section of the country have also switched to Counterstrike®. The switch makes sense to both builders and the contractors who install gas piping because of increased safety and decreased cost. Unlike yellow jacketed CSST, there are no additional bonding requirements for Counterstrike® imposed by the manufacturer's installation instructions. Counterstrike® must be bonded in accordance with the National Electrical Code NFPA 70 Article 250.104 in the same manner as the minimum requirements for rigid metal piping. However, installers must always adhere to any local code requirements that may conflict with these instructions.

Counterstrike® CSST is the most economical approach for gas piping to reduce the problem of damage caused by lightning energy. There are no clamps to attach and no conductor to run to the building's grounding system.

Starting in 2004, Counterstrike® engineers developed and tested a radically different CSST jacket. This jacket was designed to dissipate lightning energy along the surface of the jacket. Counterstrike® has been shown to be 400 times more resistant to the damaging effects of electrical energy than conventional CSST with the yellow jacket. In some ways, Counterstrike® performs even better than rigid metal pipe because Counterstrike® dissipates the lightning energy as compared to rigid pipe systems that simply transfer the energy to other vulnerable components such as flex connectors or gas-fired equipment.

TracPipe®CounterStrike® installed in a manifold arrangement with shut-off valves at each outlet and inlet.



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With the current attention on bonding of CSST gas piping, builders have become unsure of their role in complying with this additional requirement. The home builder desires to provide available safety features but must contain cost increases to make his homes affordable. Many builders around the country have chosen Counterstrike® for their gas piping because this product satisfies the need for safety as well as cost containment. These are the same builders who several years ago switched from black iron pipe gas systems to CSST in order to save time and money during construction. Their experience with CSST has been positive, especially during the time of the housing bubble and the increased pace of construction then. The builder's new dilemma of required bonding for CSST can be alleviated by switching to Counterstrike®. This is a simple transition for a gas pipe fitter because the same fittings and method of attachment are used for Counterstrike® as for the conventional TracPipe® with the yellow jacket.

Manufacturers of standard yellow jacketed CSST have imposed a requirement for bonding of CSST in their installation instructions. This involves running a bonding wire from the gas piping system to the building's grounding system. The bonding wire requirement adds additional cost to the gas piping system which can be from \$50-\$75 or as high as \$150-\$200 depending on the locations of the different services, availability of an electrician and charges for permits. Because Counterstrike® is bonded in the same manner as the minimum requirements for rigid metal piping, the cost for additional bonding may be eliminated (depending on local building codes in effect). There have also been instances where local code officials have been reluctant to approve standard CSST systems that have been directly bonded to the electrical ground; as that arrangement exceeds the minimum requirements under the National Electrical Code (NEC). Bonding gas piping is a "cross code" requirement involving both the fuel gas and electrical codes; this adds to the confusion. Counterstrike® takes all the guess-work and hassle out of CSST installation by conforming to the minimum requirements of the NEC for bonding, while fully complying with all mechanical requirements in the fuel gas codes now in effect across the country.

TracPipe® CounterStrike® regulator and manifold station for a 2 psi gas piping system.



**For safety, cost-savings, and ease of installation,
CounterStrike® CSST is the logical choice.**