

ISSUE: DS 2020-0056: Petitioner Jonathan Sargeant of Omegaflex, Inc. is seeking a declaratory Statement with regard to whether the bonding of CSST should be performed in accordance with Sections 310.2 through 310.3 or in accordance with sections 310.1 through 310.3 of the 7th Edition (2020) Florida Building Code, Fuel Gas.

Petitioner seeks clarification of the following questions:

Under the Florida Building Code - Fuel Gas, Seventh Edition (2020) is the bonding of CSST to be performed in accordance with Sections 310.2 through 310.3 and not in accordance with sections 310.1 through 310.1 1.5?

Background:

Omegaflex is a manufacturer of Corrugated Stainless Steel Tubing (CSST) products with manufacturing facilities located in Exton, PA. Omegaflex manufactures an arc-resistant CSST under the brand Trac Pipe Counterstrike. They are one of five brands of CSST available in the United States, all of whom manufacture products installed in accordance with section 310 of the Florida Building Code - Fuel Gas, Seventh Edition (2020). The petitioner is seeking clarification of contradictory provisions in the Florida Building Code - Fuel Gas, Seventh Edition (2020) governing the bonding of CSST.

7th Edition (2020) Florida Building Code, Fuel Gas

CHAPTER 3: General Regulations

Section 310 (IFGS) Electrical Bonding

310.1 Pipe and tubing other than CSST.

Each above-ground portion of a gas piping system other than corrugated stainless steel tubing (CSST) that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping other than CSST shall be considered to be bonded where it is connected to appliances that are connected to the equipment grounding conductor of the circuit supplying that appliance.

310.1.1 CSST.

Corrugated stainless steel tubing (CSST) gas piping systems and piping systems containing one or more segments of CSST shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.1.1.1 Point of connection.

The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.

310.1.1.2 Size and material of jumper.

The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

310.1.1.3 Bonding jumper length.

The length of the bonding jumper between the connection to a gas piping system and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes used shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.1.1.4 Bonding connections.

Bonding connections shall be in accordance with NFPA 70.

310.1.1.5 Connection devices.

Devices used for making the bonding connections shall be listed for the application in accordance with UL 467.

Section 310.2, CSST

This section applies to corrugated stainless steel tubing (CSST) that is not listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. CSST gas piping systems and piping systems containing one or more segments of CSST shall be electrically continuous and bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.2.1 Point of connection.

The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.

310.2.2 Size and material of jumper.

The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

310.2.3 Bonding jumper length.

The length of the bonding jumper between the connection to a gas piping system and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes installed to meet this requirement shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.2.4 Bonding connections.

Bonding connections shall be in accordance with NFPA 70.

310.2.5 Connection devices.

Devices used for making the bonding connections shall be listed for the application in accordance with UL 467.

310.3 Arc-resistant CSST.

This section applies to corrugated stainless steel tubing (CSST) that is listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. The CSST shall be electrically continuous and bonded to an effective ground fault current path. Where any CSST component of a piping system does not have an arc-resistant jacket or coating system, the bonding requirements of Section 310.2 shall apply. Arc-resistant jacketed CSST shall be considered to be bonded where it is connected to an appliance that is connected to the appliance grounding conductor of the circuit that supplies that appliance.

7th Edition (2020) Florida Building Code, Residential

SECTION G2411 (310) ELECTRICAL BONDING

G2411.1 (310.1) Pipe and tubing other than CSST. Each above-ground portion of a *gas piping system* other than corrugated stainless steel tubing (CSST) that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. *Gas piping* other than CSST shall be considered to be bonded where it is connected to *appliances* that are connected to the *equipment* grounding conductor of the circuit supplying that *appliance*.

G2411.2 (310.2) CSST. This section applies to corrugated stainless steel tubing (CSST) that is not listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. CSST *gas piping* systems and piping systems containing one or more segments of CSST shall be electrically continuous and bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

G2411.2.1 (310.2.1) Point of connection. The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.

G2411.2.2 (310.2.2) Size and material of jumper. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

G2411.2.3 (310.2.3) Bonding jumper length. The length of the bonding jumper between the connection to a gas piping system and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes installed to meet this requirement shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

G2411.2.4 (310.2.4) Bonding connections. Bonding connections shall be in accordance with NFPA 70.

G2411.2.5 (310.2.5) Connection devices. Devices used for making the bonding connections shall be listed for the application in accordance with UL 467.

G2411.3 (310.3) Arc-resistant CSST. This section applies to corrugated stainless steel tubing (CSST) that is listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. The CSST

shall be electrically continuous and bonded to an effective ground fault current path. Where any CSST component of a piping system does not have an arc-resistant jacket or coating system, the bonding requirements of Section G2411.2 shall apply. Arc-resistant jacketed CSST shall be considered to be bonded where it is connected to an appliance that is connected to the appliance grounding conductor of the circuit that supplies that appliance.

7th Edition (2020) Florida Building Code, Building

[A] 102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

Staff Analysis

Question:

Under the Florida Building Code - Fuel Gas, Seventh Edition (2020) is the bonding of CSST to be performed in accordance with Sections 310.2 through 310.3 and not in accordance with sections 310.1 through 310.1 1.5?

Answer:

Option #1/Petitioner:

Petitioner respectfully believes that the answer to the question outlined above is "Yes."

Sections 310.1.1 through 310 1.1.5 were pre-existing language from the Florida Building Code - Fuel Gas, Sixth Edition (2017)

Sections 310.2 through 310.3 were added with the adoption of the Florida Building Code - Fuel Gas, Seventh Edition (2020).

When the NFPA 54 (2018), International Fuel Gas Code (2018), and International Residential Code (2018) added the new language contained in sections 310.2 through 310.3, it was accompanied by the deletion, in their entirety, of sections 310.1.1 through 310.1.1.5. I believe that was the intent of the Florida Building Commission as well. I believe that not deleting sections 310.1.1 through 310.1.1.5 was an error that needs to be corrected by means of a future code change. However, the current language of the 2020 Florida Building Code conflicts with itself because these three sections exist within the same document. The 2017 language directs the installer to directly bond all CSST tubing systems. The current 2020 language instructs the installer to directly bond only non-arc-resistant (yellow) CSST tubing systems, but permits arc-resistant (black) CSST "to be bonded where it is connected to an appliance that is connected to the appliance grounding conductor of the circuit that supplies that appliance." Because the bonding provisions are in conflict, I am seeking remedy through a declaratory statement to guide inspectors and installers on the use and

interpretation of this code section until the language can be amended through the next Florida code change cycle.

Option #2/Staff

The answer to the Petitioner's question is yes. The requirements of Sections 310.2 through 310.3 are more specific than the requirements of Sections 310.1 through 310.1.5 of the 7th Edition (2020) Florida Building Code, Fuel Gas with regard to method of bonding to be performed for CSST tubing systems and therefore in accordance with Section 102.1 of the 7th Edition (2020) Florida Building Code, Building, the requirements of Sections 310.2 through 310.1.3 prevail over the requirements of Sections 310.1 through 310.1.5.