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Bonding of Corrugated Stainless Steel Tubing

- Code Section:** ORSC Sections G2411.1 and G2408.1
OESC Article 250.104(B)
OMSC C310
- Code Edition:** 2008 Oregon Residential Specialty Code (ORSC)
2008 Oregon Electrical Specialty Code (OESC)
2007 Oregon Mechanical Specialty Code (OMSC)
- Date:** Issued May 21, 2008
- Subject:** Bonding requirements for Corrugated Stainless Steel Tubing (CSST); effect of manufacturer's technical bulletins and installation instructions.
- Background** Several manufacturers of corrugated stainless steel tubing (CSST) have issued technical bulletins and installation instructions that require their product to be bonded to the electrical grounding system. This manufacturer's instruction is in addition to the bonding requirement for gas piping systems under Oregon's codes. Both the OESC and the OMSC, require the gas piping system to be bonded. Under the ORSC gas piping systems must be bonded in accordance with the electrical code.
- Question:** **When CSST is installed as a component of a gas piping system in a building regulated under the ORSC, is the customer or contractor required to comply with a manufacturer's instruction that requires bonding that is in addition to the bonding requirements under the OESC?**
- Answer:** **No. In residential applications, a requirement contained in CSST installation instructions that calls for bonding that is in addition to the OESC requirement for bonding of the gas piping system is not a requirement in Oregon.**
Gas piping systems that are bonded in accordance with OESC article 250.104(B) shall be considered to be adequately protected.
- Analysis:** ORSC Section G2411.1 requires that bonding of gas piping systems shall *be in accordance with the electrical code*. OESC article 250.104(B) requires that the gas piping system be bonded.
ORSC section G2408.1, requires compliance with conditions of listing, manufacturer's instructions and the code. Where a code provision is less restrictive than a condition of listing or a manufacturer's instruction the more restrictive applies. The language in ORSC section G2408.1 is a general standard and is not specific to bonding of gas piping. The division interprets the more specific standard in ORSC section G2411.1, which defers to the electrical code for bonding requirements of gas piping, to supercede ORSC section G2408.1.

Question: When CSST is installed as a component of a gas piping system in a building *not regulated under the ORSC*, is the customer or contractor required to comply with a manufacturer's instruction that requires bonding that is in addition to the bonding requirements under the OESC or the OMSC?

Answer: No. In commercial applications, a requirement contained in CSST installation instructions that calls for bonding that is in addition to the bonding requirements in OESC article 250.104(B) or OMSC section C310.1 is not a requirement in Oregon. Gas piping systems that are bonded in accordance with OESC article 250.104(B) or OMSC section C310.1 shall be considered to be adequately protected.

Analysis: OESC article 250.104(B) and OMSC section C310.1 require bonding of the gas piping system. While both the OESC and OMSC require compliance with manufacturer's instructions in certain circumstances, the division finds those provisions inapplicable to bonding requirements of CSST for the following reasons:

- OESC article 110.3(B), which requires compliance with installation instructions that were included in the listing, applies only to electrical products, which CSST is not.
- An additional bond requirement for CSST was considered by CMP-5 for inclusion in the National Electrical Code and was rejected. A similar requirement was approved for inclusion in the 2009 National Fuel Gas Code. However, given the fact that Oregon treats this issue as an electrical installation, the division defers to the standard required under the OESC.
- The additional bonding requirement is not required at all in residential applications (see above).
- In order to achieve consistency, coordination and streamlining of the state building code.

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