

Regarding Corrugated Stainless Steel Tubing (CSST)

Enacted **February 4, 2009**

1. WHEREAS, Corrugated Stainless Steel Tubing (“CSST”) is subject to nearby (a.k.a. indirect) lightning strikes causing electrical arcing which can rupture CSST products leading to property damage and potential injuries or death;
2. WHEREAS, without prior approval by the Board of State Examiners of Plumbers and Gas Fitters (“Board”), it appears manufacturer installation requirements have been changed to require adherence to additional bonding requirements which has now been addressed in NFPA 54, 2009 edition (not adopted in Massachusetts) and given that the Board has not previously approved a CSST product with special lightning protection installation provisions;
3. WHEREAS, certain CSST manufacturers have informed the Board that, when applicable, the additional bonding of CSST piping must be performed by licensed electricians because the new bonding requirements are an enhanced version of bonding required to protect buildings from ground faults, which fall within the purview of electricians and given that these manufacturers previously acknowledged that the additional bonding may not be authorized in Massachusetts, or in the alternative, if authorized, may not be enforceable in Massachusetts by any relevant authorities;
4. WHEREAS, based on the limited information before it that the additional bonding was required for public safety, the Board temporarily rescinded product approval for CSST piping on November 26, 2008 to allow for resolution of the enforcement/requirement of extra bonding by the relevant authorities having jurisdiction;
5. WHEREAS, on January 16, 2009, the Board of Fire Prevention Regulations issued an interpretation finding that additional bonding required by manufacturers would not violate the Massachusetts Electrical Code but made no statement on the enforceability of said requirements.

Now, therefore, the Board, after due consideration and in conjunction with meetings held with the manufacturers, immediately reinstates the previously approved CSST products in Massachusetts pursuant to these provisions;

- A. The Board typically requires products to meet national standards for assurances that they are safe for public use; however, the Board has been unable to identify any national standard for protection of CSST piping (or any piping in general) from indirect lightning strikes. Therefore, pending the adoption of such a standard, and, solely based on evidence provided by manufacturers, the Board accepts the following measures as mitigation for damages from indirect lightning strikes:
 1. Direct Bonding of CSST piping – Manufacturers have provided evidence from a testing center, Lightning Technologies Inc. of Pittsfield, Massachusetts, that additional bonding of CSST products via a bonding jumper helps mitigate damages from indirect lightning strikes.
 2. One other manufacturer, OmegaFlex, has also provided evidence from Lightning Technologies Inc. of Pittsfield, Massachusetts, that its product, also mitigates the damages from indirect lightning strikes due in part to a special jacket material.

- B. Using a bonding jumper with CSST falls outside the scope of plumbing and gas fitting, therefore plumbers cannot be required or otherwise held responsible for adhering to manufacturer's instructions regarding such bonding (be it direct or other types covered by the electrical code). It appears that licensed electricians, adhering to the regulations/codes adopted by the Board of Fire Prevention Regulations, have exclusive jurisdiction over the additional CSST bonding. Therefore, if the manufacturer's instructions require use of a bonding jumper, then such work shall be done in accordance with applicable law, which includes the pulling of any required electrical permits.
- C. Instructions from manufacturers often reference adherence to the "latest edition" of NFPA 54 which is ambiguous. As the 2009 edition requires a type of direct bonding, the Board, via this policy, places the burden on manufacturers to clarify whether such bonding will be required for that particular product.
- D. The Board is adopting this policy based on manufacturer representations that their efforts at mitigating indirect lightning strikes are effective. Should the Board receive evidence to the contrary, or a new standard be adopted which the manufacturer's do not adhere to, the Board reserves the right to reconsider this policy as well as past and future product approvals, to the extent allowed by law and in the best interests of public safety.
- E. Like all other plumbing and gas products, manufacturers must seek Board approval prior to making any other changes to their installation instructions. New CSST products will be similarly reviewed to ensure that steps have been taken to mitigate the effects of indirect lightning strikes.
- F. It shall be the duty of manufacturer's to educate their Massachusetts installers of the above provisions as soon as possible.