

**NC Department of Insurance  
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**Internal Sealants and Factory-Installed Gaskets**

**Code:** 2012 Mechanical code  
**Section:** 603.9

**Date:** April 19, 2016

**Question:**

Are field-applied external tapes the only way to meet the joint sealing requirements of 603.9?

**Answer:**

No.

An excerpt of the code section reads:

“All joints, longitudinal and transverse seams and connections in ductwork shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric systems, liquid sealants or tapes.”

The purpose of this interpretation is to address the widespread availability of factory-sealed metal ductwork and fittings that are available, and other methods such as mist-sealing<sup>1</sup> that seal from the inside. Of course, there other requirements<sup>2</sup> and exceptions in section 603.9, and there may be further requirements in design specs in regards to pressure limits that may preclude any given sealing method, but in concept field-applied tapes are not the only acceptable means of sealing metal ductwork.

Several manufacturer of metal ductwork market ductwork that have both longitudinal and transverse foam<sup>3</sup> gaskets factory-installed, and then field snapped-together and closed. Likewise, more and more fittings with factory-sealed seams can be ordered. Although it may be easier to see and therefore inspect joints that are externally sealed with tapes and mastics, section 603.9 does recognize other methods such as gaskets and liquid sealants. Installers need to have the manufacturer’s data available for review to the code official, and the ductwork needs to be available for inspection without being covered up the same as a field-installed sealant methods.<sup>4</sup>

When there are factory-installed fittings, there still may be seams that need to be field-sealed where they mate up with other fittings.

**Keywords:** Aeroseal

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<sup>1</sup> Mist sealant subject to 604.3, UL 723 or ASTM E84, flame/smoke of 25/50 or lower. Aeroseal.

<sup>2</sup> This interpretation is not meant to be used as a substitute for manufacturer’s installation instructions for properly sealing and attaching flex duct.

<sup>3</sup> Sealants and gaskets are subject to 604.3, UL 723 test or ASTM E84, flame/smoke of 25/50 or lower.

<sup>4</sup> There are also factory sealed and insulated duct sections available, coordination with the code official can be done to ensure acceptable data is available to verify the ductwork under the insulation is sealed.