

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
1202 Mail Service Center, Raleigh, NC 27699-1202
919-661-5880**

Installation of Factory-Made Flexible Duct on Ceiling Joists

Code: 2012 Mechanical Code
Section: 603.10

Date: September 1, 2011

Question:

In a ventilated attic space, may UL 181 listed factory-made flexible air duct rest on ceiling joists and may insulation for the ceiling be blown around the duct? Also, may the flexible duct rest on top of blown or batt insulation installed in a ceiling of a ventilated attic space?

Answer:

Section 603.10 indicates that UL 181 listed factory-made flexible air duct is to be installed in accordance with the manufacturer's installation instructions. The flexible duct manufacturers' provisions for supporting flexible air duct is packaged with the product and is the same as in the Air Diffusion Council's publication "Flexible Duct Performance and Installation Standards." The requirements are to support horizontal flexible duct within every 5 feet with no more than ½ inch per foot of length sag between supports. Flexible duct may rest on ceiling joists or truss supports. Flexible duct may rest on ceiling joists or truss supports and have the ceiling insulation blown around the duct. The cavity beneath the duct must be fully filled to provide a continuity of the thermal envelope. The overall thickness of the ceiling insulation is that which is required for compliance with the energy code. There is no thermal envelope trade-off requirement resulting from the flexible duct being partially in-bedded in the ceiling insulation. Also, flexible duct may be installed to rest on top of blown or batt insulation. The installed ceiling insulation in this case is that which is required for compliance with the energy code for the thermal envelope provisions. There is no thermal envelope trade-off requirement resulting from the flexible duct partially compressing the ceiling insulation.

An earlier opinion voiced at the mechanical workshops stated that the flexible duct should be supported above the required ceiling insulation. However, more energy is conserved when the flexible duct receives the added benefit of the ceiling insulation and should be allowed given it does not conflict with manufacturer's installation instructions.

Keywords:

flexible duct installation