

Ducts Must Pass!



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Fig. 1: Minneapolis Duct Blaster®



Sealed Register Boot



Sealed Branch & Trunk

What's new in the RI Energy Code for residential new construction?

Rhode Island has adopted the 2013 RI State Energy Conservation Code, which requires all new residential heating and air conditioning systems with ducts in unconditioned space to pass duct leakage testing verification. This is not new to the building and energy conservation code for residential ducted systems; it was first introduced into the RI SBC-2 and SBC-8 codes in 2010. This requirement applies to any new duct system permitted after October 1, 2013. The test results must be reported to the building official and recorded as cubic feet of air per minute (CFM) leakage per 100 SF of conditioned space at 25 Pascals of pressure (CFM25). The system does not need to be tested if the ducts and air handlers are located entirely within the building thermal envelope (conditioned space).

Reference - SBC-2 N1103.2.2 and SBC-8 R403.2.2

What is a duct leakage test?

The duct system is sealed (registers are taped) and a small fan is placed in an opening in the air handler or on the return side of the system (Fig. 1). This fan pressurizes the duct system and a gauge records the pressure and CFM flow rate of the fan to maintain a pressure difference of 25 Pascals (0.1 inch w.g.). The CFM is then converted to CFM25 per 100 SF of floor area using the conditioned square feet of the house. The calculation is as follows: $CFM25 \text{ per } 100 \text{ SF} = (CFM25 / SF \text{ of the conditioned space}) \times 100 \text{ SF}$. Results must meet requirements listed in Figure 2.

Who is approved to perform the duct leakage testing?

There is no clear guidance on the qualifications for performing duct testing. The Building Code Commission is reviewing legislation that will approve individuals as "Energy Specialists" statewide, which will set the standard. Before the test is conducted, the testing agents' qualifications should be reviewed and approved by the building code official.

Reference - SBC-2 N1103.2.2 and SBC-8 R403.2.2

What happens if the duct system fails?

The system must be brought into compliance. This can be difficult to do at the time of *Certificate of Occupancy*, therefore it is recommended that this test be performed at the rough mechanical inspection, when all of the ducts are accessible.

Maximum Allowable Leakage in CFM25/100 SF Conditioned Space		2013 SBC-2 & SBC-8
Post-Construction	Total Leakage	8
Rough-in	Total Leakage	6
	Total Leakage: w/out air handler	4

Fig. 2: Duct Leakage Requirements

Have questions:

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