Technical Bulletin: Duct Testing

Residential New Construction Program

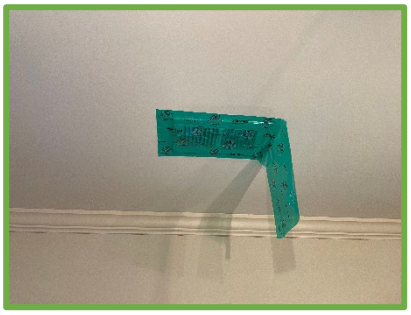
BUILDING A SMARTER ENERGY FUTURE℠

Accurate duct testing and modeling is crucial to the Duke Energy RNC Program savings calculations. Local building code and RESNET requirements must be followed during testing. Duct location modeling is also important, and this technical bulletin will give guidelines to help raters estimate duct locations percentages in the field.

Below are testing requirements that should be followed when there are three or fewer return grills. If the system has more than three return grills, refer to ANSI/RESNET/ ICC 380-2019 Section 5.3: Procedure to Install the Test Apparatus and Prepare for Airtightness Test.

- The Duct Blaster fan should be attached to the largest return closest to the air handler.
- The filter at the return being tested from should be removed.
- Supply boots and return boxes shall be sealed temporarily around the face and perimeter.
- Ensure the system is turned off and any fan or ventilation to the outside is also off.
- The reference hose should be attached to the closest supply to the air handler.

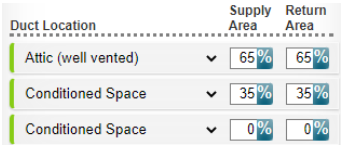
Tape only covers the supply, is not sealed to drywall.



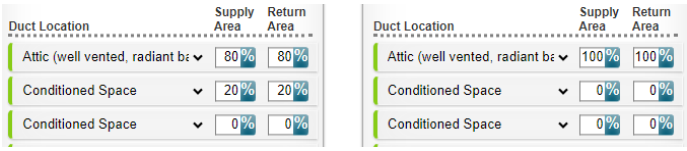
Tape covers supply and is sealed to the drywall.

Vent cap covers the supply and seals to the drywall.

Accurate modeling of duct location in the distribution system section of the Mechanical page on Ekotrope is imperative to the rebate calculation. Below are examples of the duct locations entries in Ekotrope.



Duct split for a 1 system home



Duct split for a 2 system home

The table on the next page includes a few common floor plans and their typical duct location breakdowns. As a general rule of thumb, the air handler itself makes up approximately 10% of the system and each chase with ductwork is also about 5%. The table on the right is the legend for the Home Shell column on the next page.

	1st Floor Walls
	2nd Floor Walls
	Rim Joist

Legend for the Home Shell

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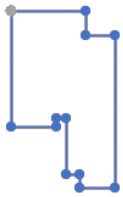
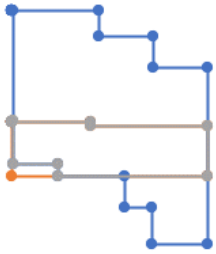
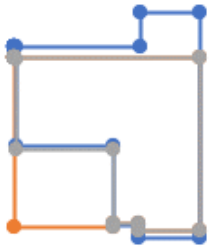
Home Shell	Foundation	Air Handler Quantity/Location	Baseline Duct Location Split
 1 story home	Slab	1/Attic	100% Attic
	Vented Crawl	1/Crawl	100% Vented Crawl
	Conditioned Crawl	1/Crawl	100% Cond. Crawl
 1 ½ story home	Slab/Vented Crawl	1/Attic	80-90% Attic 10-20% Cond. Space
	Vented Crawl	1/Attic	80-90% Attic 10-20% Cond. Space
 2 story home	Slab	1/Attic	60-70% Attic 30-40% Cond. Space
		1/Mechanical room	50-60% Attic 40-50% Cond. Space
		2/Attic	Unit 1 70-80% attic 20-30% Cond. Space
			Unit 2 100% attic
	Vented Crawl	2 Total 1/Crawl 1/Attic	Unit 1 100% Vented Crawl
			Unit 2 100% Attic
	Conditioned Crawl	2 Total 1/Crawl 1/Attic	Unit 1 100% Cond. Crawl
			Unit 2 100% Attic

These baseline duct locations may not represent every home with similar floor plans but should serve as a starting point and a guideline when assessing duct locations.

Always defer to RESNET guidance on duct testing.
Please contact us at DERNC@icfprogram.com with questions or for additional information.