

Sean May 1 3 min read

## Blower Door Tests 101: Everything you need to know

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Your new home is almost complete and the future owners are excited to start moving in in the next few weeks, but as you know, there are always a few more hurdles to get across before you can deliver the new home with a Certificate of Occupancy from the Authority Having Jurisdiction (AHJ). In order to get that certificate, and meet code, you'll need to test the home's airtightness.

The primary means for doing that is through a blower door test.

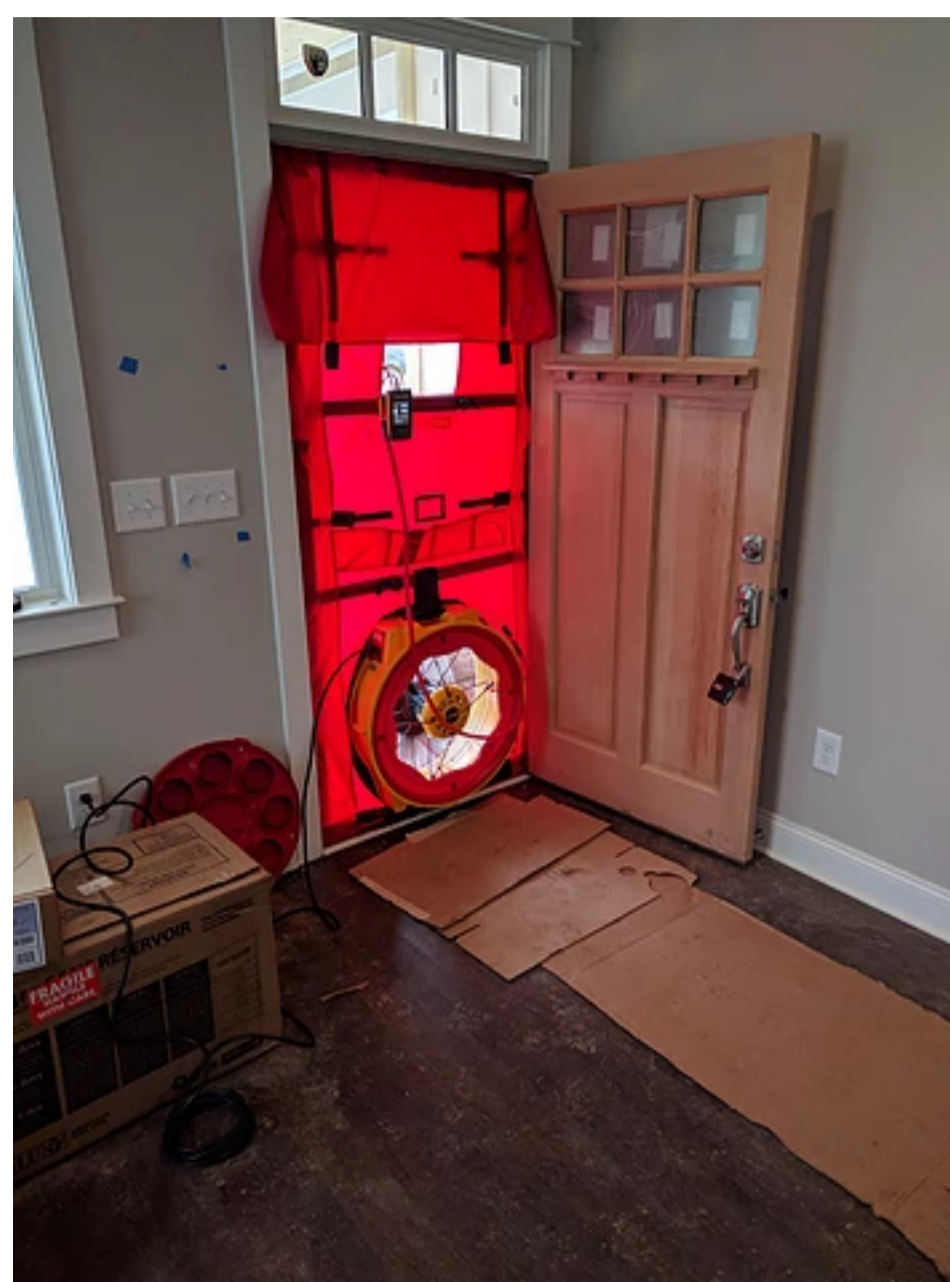
### What is a blower door test?

A [blower door test](#) measures how airtight or leaky a home is.

It is a common feature of code compliance tests, energy audits & whole home certifications like Energy Star or HERS ratings.

### How does a blower door work?

1. All devices that would affect the air flow in the home (HVAC, bathroom fans, etc) are turned off
2. A blower door is mounted in an external door frame, hoses are connected to measure the air pressure outside, inside, and in the fan assembly, and a manometer is set up to run the whole test
3. The fan in the door blows air out of the house, depressurizing the home to a set standard with the outside
4. As air is pulled out of the house, it is naturally replaced by new air. This new air comes through the air leaks in the house.
5. By measuring the air flow through the fan (courtesy of the manometer) and plugging it into a formula with the volume and dimensions of the home, the amount of air leakage can be identified



### What is a blower door test used for?

The most common use of a blower door test is as a part of code compliance testing in new home construction. Because the air leakage is so important, this test is required by building code.

Think of it this way: an air-tight home is a demonstration of a higher quality of construction. So if your home is super leaky, it was probably thrown together and shows that a lot of care wasn't put into the details.

Blower door tests are also a standard part of energy audits. If you want to figure out how to save money on your utility bills, the inspector should definitely have this as a part of the inspection. A blower door test can help pinpoint exactly where the air leaks are.

### How much does a blower door test cost?

A blower door test in Nashville and Middle Tennessee will cost you somewhere between \$150 and \$400.

It's not really a DIY kind of task. If you wanted to buy the blower door, fan, and manometer, you're going to be paying a few thousand dollars. So even if you want to do the air sealing and insulation work yourself, save yourself some money and find a certified professional to conduct the test and inspection.

### Who can do blower door tests?

There are two different certifying authorities for blower door tests. When you're looking for a contractor to inspect your home and run these tests you want to make sure they are certified by the [Building Performance Institute](#) (BPI) or by [RESNET](#) as a HERS rater. You can find contractors near you by clicking on the organization name.

### Is your house ready for a blower door test?

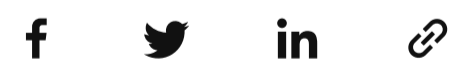
So what do you as a home builder need to know about making sure the home is ready for this testing? There are a couple of key steps that need to be done before the blower door testing can be certified by an authorized and certified third party:

1. All penetrations in the exterior envelope of the building must be made and completely sealed, including venting for dryers, range hoods, and bathroom fans, etc.
2. All windows and doors should be fully installed with appropriate weather stripping and sealing.
3. Penetrations and openings into kneewalls, crawlspaces, and attics should be closed and sealed as tightly as possible.
4. Water should be on and filling all plumbing traps (you might be surprised how much air can be sucked in through a house full of open/dry pipes!) **\*Important note:** this is not a requirement. In fact, blower door tests can be done at rough-in. However, your home will score better if the test is done when finished out, including having water in all pipes.
5. The main air handler for the HVAC as well as all ductwork should be installed and sealed to required specifications.

Once these steps are complete, the house should be ready for testing for both air infiltration using a blower door, as well as duct leakage using a duct blaster fan.

If all goes well, the test results will indicate that the house was built with care and is as tight as possible.

The old adage that a house needs to breathe just isn't true anymore. You should build it tight, and then ventilate it right.



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41 Peabody St  
Nashville, TN 37210

Tel: 615-398-9096  
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