

# Residential Building Energy Code Requirements



According to Utah building energy code requirements, all new homes must meet certain standards of energy efficiency. These energy codes have been established to reduce energy bills for homeowners in a cost-effective manner. The energy code requirements must be met as part of the building permit process for new homes. Whether you are a general contractor or owner-builder, these requirements must be fulfilled before the certificate of occupancy will be issued.

The standards require that the building thermal envelope and the ducts in every new home comply with prescriptive code requirements or pass a performance test.

## Building Thermal Envelope:

(must comply with one of the following)

- » **PRESCRIPTIVE CODE REQUIREMENT:** An inspection will be conducted to ensure all air barrier and insulation products have been installed following the manufacturers' installation instructions and requirements as per the criteria listed in Table N1102.4.1.1 (of the international residential code). If this inspection is passed, the blower door test will not be required.
- » **PERFORMANCE TEST:** A blower door test is conducted to determine the airtightness of the home. This test can be done at any time after all of the penetrations through the building thermal envelope have been created.

## Ducts:

(must comply with one of the following)

- » **PRESCRIPTIVE CODE REQUIREMENT:** To meet the duct leakage requirement, an inspection will be conducted to ensure all air handlers and at least 50 percent of the ducts (by length) are installed within the thermal envelope. If this inspection is passed, the duct blaster test will not be required.
- » **PERFORMANCE TEST:** A duct blaster test is conducted to detect leaks in the duct system. This test can be done any time after the duct work is completely installed, and it can be performed with or without the air handler installed.

We encourage performance testing for air leakage when the home is completed as this is a method to prove your home was built correctly and that it performs above the minimum standards established in the current building code. However, you can choose either option for meeting each of the requirements.

## Frequently Asked Questions

### What is a Duct Blaster Test?

This test detects leaks in the duct system. Leaks in return ducts allow unconditioned air (hot air from the attic, cold air from the basement/crawl space) to be pulled into the heating/cooling system.

Leaks in supply ducts allow the heated or cooled air to escape the system before being delivered to your home. Leaky duct work is a waste of money and energy as it will cause your furnace and/or air conditioner to have to work extra hard to make the air in your home the right temperature.

### What is a Blower Door Test?

This test helps determine the airtightness of the home. The more airtight the home is, the less air leakage will occur, thus helping the home maintain a comfortable temperature without causing the furnace and/or air conditioner to work more than necessary. A home with the proper building tightness will consume less energy and will be less prone to moisture condensation problems and uncomfortable drafts.

### What is in the value in meeting energy compliance regulations?

A home that is built up to par with the energy code will result in a lifetime of cost savings for the home owner. Energy efficient homes get more from the energy they use and ultimately help improve the environment.

### What is the cost for the energy compliance tests?

The cost of the duct blaster test and the blower door test will depend on the size of the home and the complexity of the duct work. When both tests are conducted at the same time, the cost averages \$300. We can provide a price estimate over the phone by asking just a few basic questions about your home. Call us for a quote.

### Where do I obtain the necessary paperwork?

We can either provide the paperwork for you, or you can obtain it from the building department in the jurisdiction in which you are building.

### How long does it take to perform both tests?

When performed at the same time, the tests will take about four hours. Performing the tests simultaneously is the most cost-effective option.

### Who can perform the tests?

The energy code states: "The following parties shall be approved to conduct testing: Parties certified by BPI or RESNET, or licensed contractors who have completed training provided by Blower Door Test equipment manufacturers or other comparable training." C.R.I., Inc. meets these requirements and is certified to perform both the duct blaster test and the blower door test.

### Can other individuals be working on the home while the tests are conducted?

It is best if no one is in the home while these tests are being conducted. It is easier to control the test environment for an accurate reading if no extra people are coming and going during the test. If any doors or windows are inadvertently opened during the test, the air seal will be broken and the test results will not be accurate.

### What if the home doesn't pass the tests?

Both tests will result in either a pass or fail. If the home fails one or both tests, corrections will need to be made to the home to bring it up to the standard requirements. If the duct blaster test reveals leaks in the duct work, these leaks will need to be sealed. If the blower door test results in a "fail", actions will need to be taken to seal the building envelope more tightly. Sources of air leakage will need to be located and sealed.

## Licensing

At C.R.I., Inc., we hold a variety of certifications and licenses in the home energy audit field as well as general construction. Our credentials and experience in energy efficiency, regulation, and general construction give us a unique ability to communicate with and understand the impact of this process on all involved parties, including the homeowner, the contractors, and any others involved in the home building process.