

# HERS Rating

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**As of October 1, 2005**, you must have your home or office ducts tested for leaks when you have a central air conditioner or furnace installed or replaced. Ducts that leak 15 % or more must be repaired to reduce the leaks. **After your contractor tests, seals the ducts, and fills out the proper forms**, you choose an approved third-party HERS Rater to check and make sure the duct sealing and duct testing was done properly.

**Duct sealing is not required in the following situations:**

- 1 When homes (does not apply to nonresidential structures) are in specific coastal climate zones
  - 2 When systems have less than 40 feet of ductwork in unconditioned spaces like attics, garages, crawlspaces, basements or outside the building.
  - 3 When ducts are constructed, insulated or sealed with asbestos.
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**As of January 1 2010**, you must have your home air conditioning tested for proper refrigerant charge when you have a central air conditioner or furnace installed or replaced on a system that has central air conditioning. **After your contractor installs and charges the air conditioner, and fills out the proper forms**, you choose an approved third-party HERS Rater to check and make sure the installation and refrigerant charging was done properly by performing a Refrigerant Charge Verification.

**Refrigerant Charge Verification is not required in the following situations:**

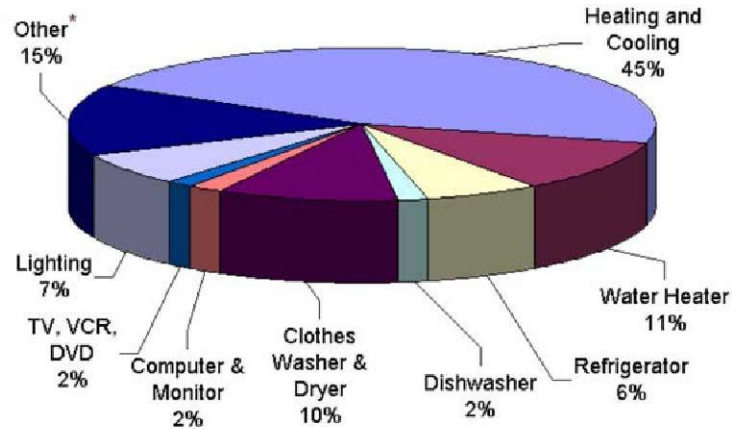
- 1 When homes are in specific coastal climate zones.
  - 2 When the system is a package unit.
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**As of January 1 2010 there are no longer alternatives for high efficiency equipment and added duct insulation to be installed instead of fixing duct leaks or performing a refrigerant charge verification.**

The greatest energy use in California homes is for central air conditioning and heating. Most homes with central air conditioning and heating systems have ducts that were *never properly sealed* . The average home's ducts leak around **30 %** of the conditioned air outside the home. These leaks are taking money straight out of your pocketbook. Properly sealed ducts will lower your energy bills and reduce pollution inside your home.

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## Where am I spending my energy dollars?



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## What's a "HERS Rater"?

HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the **Home Energy Rating System (HERS)**. These ratings include field verification and diagnostic testing to determine energy efficiency levels among homes tested for duct efficiency, envelope leakage, refrigerant charge verification and building insulation for compliance with current building efficiency standards.

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## What are "sealed ducts"?

Ducts are a system of tubes that distribute conditioned air to rooms throughout a structure. Sealed ducts have properly installed joints and connections to minimize leakage air. Air leaks cannot be seen, and so diagnostic testing verifies leakage. The use of a fog machine in conjunction with the Duct Blaster™ can help to locate them. These leaks can then be

addressed by using approved tapes, mastics, and mechanical fasteners.

[Back to the Top](#)

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## What is "RCV" (Refrigerant Charge Verification)?

**RCV is a battery of measurements and calculations performed on your A/C system to insure that your system is operating at its peak efficiency and that you are not paying higher utility bills because of an improperly installed or charged system.**

First a little background on the issue.

**The only way to insure that any air conditioning system is properly charged** is to follow specific procedures that take into account many variables. These variables can include such things as the temperatures both inside and outside the structure, the refrigerant saturation temperatures at both of the coils, the humidity, the configuration of the system and the temperature drop across the coils when running.

**Over the years many HVAC contractors have invoked shortcuts due to expediency, ignorance, or apathy.**

**One widely used shortcut is the "beer can cold" method to charging a system.** This involves dumping refrigerant into the system until the suction line becomes as cold as a good cold can of beer and presto, you're done.

Let's assume you paid for a 14 SEER system and your contractor is a beer can cold kind of guy. In all likelihood you are being left with a system that is (if you are lucky) a 10 SEER system. This means that you will now be paying a much higher utility bill than you should be paying. Yes, your system cools the home but **you have no idea that the 14 SEER system you were sold is operating at 10 SEER or lower.**

Having an independent third party inspector (a [HERS rater](#)) perform the RCV tests on your system after the contractor does his job both insures that the contractor is doing right by you and quantifies that your system is performing at it's peak efficiency. The job is not completed until the system passes the HERS (energy efficiency) tests and the building inspector will not sign off on the job without the HERS Certificate.

[Back to the Top](#)

## What is a Duct Tester

A duct tester is a tool used to test the air leakage rate of forced air duct systems. The equipment consists of a calibrated fan, tape to temporarily seal all the registers, flexible duct to connect the fan to the central return of the duct system; and a digital meter to measure fan flow and duct pressure. Duct leakage is measured by pressurizing the duct system and precisely measuring the fan flow and duct pressure. Duct leakage measurements are used to diagnose leakage problems and certify the quality of duct system installation.

[Back to the Top](#)

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## Duct Leakage Testing

Duct leakage measurements are used to diagnose duct leakage problems and verify the quality of your duct system. HERS Raters can use either a duct tester to measure how leaky, or tight, a heating or cooling system is.

Leaky ducts can reduce the efficiency of a forced-air heating or cooling system by 20 to 40+%. These leaks can make your home uncomfortable and unhealthy. Leaks in return ducts can pull pollutants into your home from your attic, basement or garage. Leaky supply ducts can negatively pressurize the house and cause drafts or moisture problems.

Sealing leaky ducts will improve both the efficiency and performance of your heating and cooling system. Leaky ducts make your heating and cooling system work longer and harder to keep you comfortable. Homeowners who have had their leaky ducts sealed have noticed a decrease in their monthly energy bills and an increase in comfort.

[Back to the Top](#)

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