

Achieving Energy Efficiency via Windows & Doors

By Jon Sader

Heating and cooling our homes expends a substantial amount of energy. Part of the reason is because the conditioned air that requires so much energy to maintain leaks out of the home. The heater or air conditioner works harder, using more energy, to keep the home at an optimal temperature and thus raises monthly energy bills. One of the leading problem areas is not the type of windows and doors in your home, rather how they were installed. If you have a blower door test conducted on your home, the Energy Rater will be able to identify which windows and doors are leaking conditioned air¹.

Some contractors will try to sell you on the expensive proposition of replacing all of your windows & doors. Be wary of this frequently used ploy. More often than not, all you may need to do is install or replace the insulation between the window or door and the framing of the house. Doing so is quick, easy, cost-effective, and does not necessarily require a contractor.

First, one must remove the finished interior trim of the window while being careful not to damage the walls or trim. Inspect the area between the window and the framing of the house and look for insulation or damaged insulation. If there is a void, using spray-foam insulation will fill the gap and prevent conditioned air leaking from outside. For this application, one must use “non-expanding” spray foam insulation so that it will not exert pressure on the window frame². You can find “non-expanding” spray foam insulation cans at nearly any home improvement store. Improving the insulation around the windows and doors is an inexpensive and easy way to improve the ability to maintain climate control within the home.

If in fact your windows and doors are dilapidated and are in disrepair, there are a few things that you should consider when purchasing replacements. It is not the elaborate and fancy glass in new windows that make them more energy efficient. Rather, it is the insulation qualities and how well sealed they are that make windows and doors more energy efficient. The two major characteristics to look for are:

- U-Factor – measures how well the glass insulates the home
- Solar Heat Gain Coefficient (SHGC) – measures how well the glass reflects heat from the sun

Besides the insulation around them, the efficiency of the glass will determine how energy efficient the windows and doors are. Windows and doors with a U-factor equal to or less than .35 are recommended which will significantly increase the home’s insulating ability. Windows & doors with

¹ For more information on Blower Door Tests, please read our article: “Identifying Energy Waste: Blower Door Testing”

² If one uses expanding spray foam, the pressure on the window frame will be so great that opening and closing the window will become difficult if not impossible



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good insulating will advertise that they have “argon panes” which mean they have two panes with argon gas in between.

Windows and doors with a solar heat gain coefficient of equal to or less than 0.27 are also recommended in southern climates. The proper SHGC in windows and doors will help reflect the sun’s radiation that would normally make the home warmer during summer months. Look for the term “Low-E” when purchasing new windows and doors as that represents a quality SHGC.

