SEER

How Energy-Efficient Is Your System?

The air conditioning and heating industry uses a measure known as "SEER" to rate the energy efficiency of air conditioners ("SEER" is an acronym for "Seasonal Energy Efficiency Rating"). In simple terms, the higher the SEER rating, the greater the amount of cooling that the system provides for each unit of electricity used.

Because of advances in technology and design, newer systems have a SEER rating as high as 17 or 19. In fact, Federal Government regulation on 1/23/06 required that new air conditioning units have a SEER of at least 13. By comparison, units that are 8 or more years old probably had a SEER rating of 10 or less when they were installed. Depending on the level of maintenance given the unit, that rating may now be much lower.

What that means to you as a home owner?

Simply that a new unit could save you anywhere from 16 to 40% of your cooling bills. For example, while a new unit could produce 15 BTU's of cooling for one Watt-hour, an older unit that has been poorly maintained may only be producing 7 BTU's of cooling.

Consider the following example (you will be able to modify it to analyze the energy efficiency of your system):

An example

The Basic Formula for Annual Cooling Costs

The basic formula for the expected cost of cooling your home is as follows:

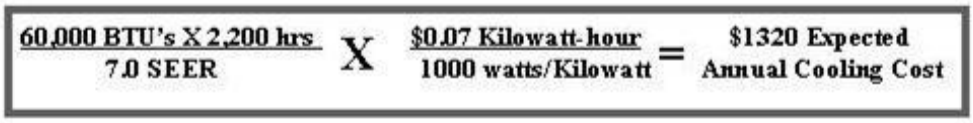
$$\frac{\text{Unit Capacity in BTU's/hr} \times \text{Annual Cooling Hours}}{\text{SEER No.}} \times \frac{\text{Cost/Kilowatt-hour}}{\text{1000 watts/Kilowatt}} = \text{Approximate Annual Cooling Cost}$$

Hours of Cooling Per Year

In the San Antonio area, the cooling season typically requires approximately 2,200 hours of system run time -- one of the highest in the country! (Reference: Air Conditioning and Refrigeration Institute).

Annual Cooling Cost Calculation

Assuming a Kilowatt-hour cost of $.07 (where a Kilowatt is a thousand watts), the projected cost of cooling a home with an older air conditioner with a 7.0 SEER rating would be as follows, when a 60,000 BTUH (5 ton) cooling load is assumed:



With the same assumptions, a newer air conditioning unit with a SEER number of 15.0 would be expected to cool the house for the following cost:

Savings

In the example above, a new, high efficiency air conditioner produced annual savings of $704 - and that is without considering other energy savings devices like programmable thermostats.

If you would like more information about how having a more energy-efficient air conditioner may benefit you personally, it will require a more detailed look at your specific situation.

If your electric bill is more than double in the summer than in the winter, you should consider having your present air conditioner unit checked out. (This assumes that the principal difference in electricity usage is due to air conditioning load. If there is some other explanation for the increase in energy costs, e.g., the energy costs of operating a pool, you may need to do a further analysis.)

These examples are by way of illustration only. Actual results will vary and the savings attained may not be as large as in the example.

Note that there are a number of factors that may affect the number of BTU's required to heat or cool your home, such as level of insualtion in the home, shading, number and type of windows, thermostat settings, number of floors, traffic in and out of the home, and other factors. However, an air conditioner with a higher SEER rating will always require less energy to cool the home than a unit with a lower rating. You may obtain further energy and utility savings by adjusting some of those other factors, e.g., by using a time-controlled thermostat to reduce the cooling requirements when the home is unoccupied, using a heat pump, etc.