

Air Conditioning Efficiency Standards Increase

By Tim De Stasio

Effective January 1, 2015, the Department of Energy (DOE) efficiency standards for air conditioning units took effect. This means that new systems installed will be more energy efficient. What does this mean for the consumer? It means in order to make an educated decision on installing or replacing HVAC equipment, you have to understand how air conditioning system efficiencies are measured and rated so you get the best value for your investment.

SEER Ratings

Air conditioning system efficiency is rated in SEER (Seasonal Energy Efficiency Ratio). This can be likened to “miles per gallon” rating for a car. The higher the number, the more efficient the system is. The SEER rating measures air conditioning and heat pump cooling efficiency, which is calculated by the cooling output for a typical cooling season divided by the total electric energy input during the same time frame. The American Refrigeration Institute tests each combination of equipment in a lab, then awards the match up with a certificate showing its efficiency rating.

In 2015, the standard was increased from 13 SEER to 14 SEER. However, dealers and installers are legally allowed to sell and install 13 SEER systems for an additional 18 months, until June 30, 2016, so they are not stuck with old inventory, unable to sell it.

HSPF Ratings

Heat pumps are given another rating for their heating efficiency. The HSPF (Heating Season Performance Factor) measures heat output over electricity consumed. The higher the HSPF, the more efficient a heat pump is. In 2015, the standard was increased from 7.7 to 8.2 HSPF. Just like with the SEER rating, installers can still draw down their old inventory until June 2016.

For the consumer, this means that you have to make a choice: Do you accept a 13 SEER air conditioning system at a reduced rate because your contractor needs to get rid of old inventory, knowing that the system will immediately be considered sub-standard efficiency? Or do you request a 14+ SEER system, knowing you may pay a little more up front?

These decisions depend on the use of the system and your budget. For example, installing in a vacation home that is only used a few weeks out of a year may be viewed differently than if installing in your primary home you live in all year.

Other Factors to Consider

Utility companies also offer rebates for installing higher efficiency HVAC systems. Currently, Duke Energy offers a \$200 rebate for qualifying units. Piedmont Natural Gas offers \$225 for qualifying furnaces. This can help offset the initial cost of a higher efficiency system.

Life Cycle Air Conditioning Operating Cost



Based on performance of one 3 ton air conditioning unit operating for 2100 cooling hours at \$0.11/kWh. Actual costs may vary depending on climate conditions, energy rates, and patterns on usage

Return on Investment (ROI) is another factor in your decision as a consumer. Higher efficiency systems cost more to install. In some cases, they cost more to maintain. While they will save you money over their lifespan in lower energy usage, there is a point where the initial cost outweighs the energy saved over the expected

lifespan of the unit.

From my experience, a 15-16 SEER system matchup provides great performance and energy efficiency without breaking the bank. Above 16 SEER, the initial purchase cost really starts increasing without always giving a quicker ROI.

Inquire about multi stage and variable speed equipment too. Multi stage heat and cooling equipment can offer energy savings during mild weather because they will run at a lower “stage” and save energy. Variable speed compressors and fan motors have also come a long way and are much more efficient than the traditional ones available just a few years ago.

My final suggestion is this: Buy the most efficient system your budget will allow. Plan a replacement ahead of time where you can educate yourself on your options, understand the cost and set aside the funds. Do not find yourself in a position where the system has broken down, needs to be replaced and you are at the mercy of the only contractor in town you could

get to come out the same day. Get multiple options and opinions and ask for explanations. And definitely ask for the ARI certificate for any system that you are interested in purchasing.

Energy costs are on the rise. The industry is trying to come up with new ways to reduce energy usage and comply with rising standards. Become an informed consumer and you can stay comfortable and save money and energy too.

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