



Home Tips®



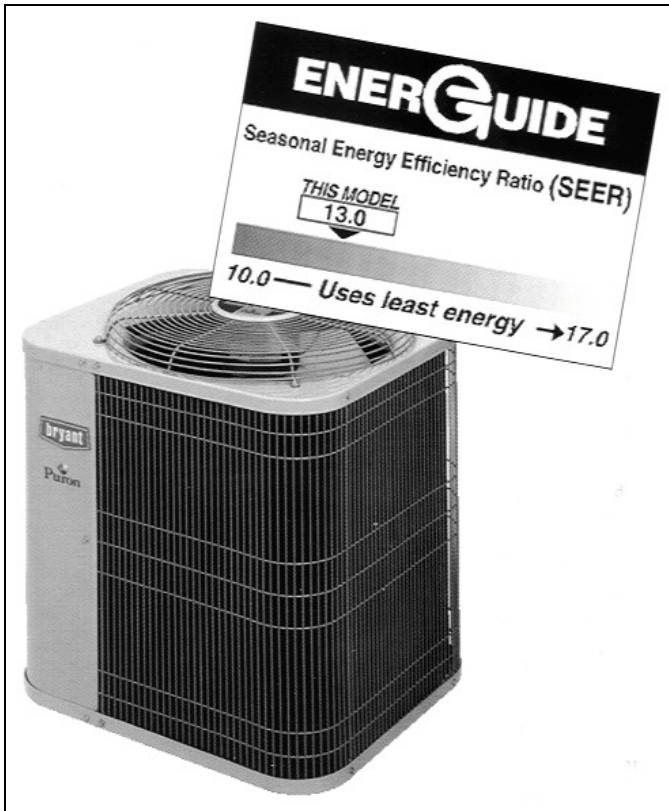
• CHRISTIAN BUILDING INSPECTORS, INC., 3697 HABERSHAM LANE, DULUTH, GEORGIA 30096, 770-849-0920 • JANUARY 2006 •

Q & A

New Air Conditioner Efficiency Requirement For 2006?

We are planning to replace our air conditioner next spring and understand there is a new requirement. Can you fill us in on the details?

According to Frank Johnson, the president of Robertson-Morrison Inc. in Ann Arbor, Michigan, the U.S. Department of Energy has mandated a change to the minimum efficiency of central air conditioners. This letter is intended not to alarm



but instead to provide background information to allow informed decisions based on the new regulations. The regulations impact central air conditioners and heat pumps up to 5 tons of capacity. At this point in time, particular focus should be on air conditioning condensers that are reaching the end of their effective life, which is typically 15 to 17 years. Effective January 23, 2006, manufacturers will be allowed to produce only equipment that meet the new minimum rating of 13 SEER (SEER is the Seasonal Energy Efficiency Ratio). This is a 30 percent increase relative to the current minimum

requirement of 10 SEER. Air conditioning units that are less than 13 SEER can be installed until the available stock of those units is depleted.

In order to achieve the higher efficiency requirements, the manufacturers will be increasing the coil surface areas to improve the heat transfer effectiveness of systems. The outdoor condensing units will be up to twice the size of the current 10 SEER units. In addition, the indoor evaporator coils will increase in height by 5" and require a thermal expansion valve to meter the refrigerant. The new 13 SEER units will not only require more copper, aluminum and steel, but also the system will utilize 40 percent more refrigerant.

It would also be worth considering changing to a system that utilizes a new synthetic refrigerant to avoid the increased service costs related to the 65 percent reduction in R-22 production that begins in 2010. In addition, production of R-22 Freon based air conditioning equipment will be halted in 2010.

We've put together a list of key points from a variety of sources:

- The cost of installing 13 SEER systems will be considerably more expensive than the current 10 SEER systems. When considering that the indoor evaporator coil also needs to be changed, the price approaches a 50 percent increase.
- In some instances, there may not be physical room in existing mechanical rooms to install the taller evaporator coils. Fan coil systems will require a complete indoor unit/air handler change.
- If a matching indoor evaporator coil is not installed, not only will the installation not meet the 13 SEER mandate (which will likely become an issue with local inspectors), but it also could cause premature compressor failure to occur.
- The larger indoor evaporator coils will create more air resistance. In some existing marginal airflow systems, a new furnace or air handler could be required.
- The outdoor condensing units will be up to 110 percent larger. For multiple groupings of condensing units, this could add further complications and costs.
- The larger size of the components will also impact costs due to increased shipping (108 condensing units per truckload vs. the current 342 units), warehousing and handling costs.

The manufacturers have phased out production of the current units in the second and third quarters of 2005. All units manufactured after January 23, 2006, must be 13 SEER or above.

Apartments and condos that use the "through the wall" type of packaged HVAC units (Magic Chef, Armstrong, Magic Pak) have been granted an exception to 2010. The size impact when this type of unit is required to meet higher energy

