

Comments Via E-mail from Ken Fonorow, Florida HERO

Please forward my comments on the proposed prescriptive package that the EPA Energy Star Homes Program has released for public comment to the appropriate person(s).

1) I have concerns that the 14 SEER minimum efficiency for A/C systems will result in systems being selected without regard to their SHR (Sensible Heat Ratio). In a hot/humid climate, a systems ability to remove moisture will have a significant impact on the amount of energy used for space conditioning. The interrelationship of temperature vs. humidity for comfort is a well established fact.

There are methods that can be used to increase the SEER while decreasing the SHR. This is not in the consumers best interest. Specifically, the SEER rating of a system will be increased if the evaporator coil is increased in size relative to the condensing section. A larger coil will take more run time to begin to dehumidify. As comfort is based on the interrelationship between temperature and humidity, this will often times result in an occupant needing to reduce the temperature in order to achieve a "comfort zone". A lower temperature setting will increase the amount of energy used.

Another method to increase the SEER rating is to use a TDR (Time Delay Relay). This control device will allow the air handler blower fan to continue to run after the condensing section has turned off. This will result in the re-evaporation of the moisture that is on the evaporator coil and distributing this moisture into the home. Again, the temp/humidity relationship will be impacted negatively with regard to energy use.

I suggest that the systems SHR be specified along with the SEER rating for the hot/humid climate zones.

2) A "Right-sized" system using Manual J should be better defined. The Manual J program allows the individual developing a load calculation significant opportunity to "adjust" the result based on the inputs selected.

These inputs need to be defined. For example, the infiltration rate, temperature differential, duct gain/loss; etc, selected will have a significant impact on the size of the system. For example, I could perform a Manual J on a 1,500 sq/ft home and show that the home needed a 1 1/2 ton system or a 5 ton system.

3) While I am most pleased to see a criteria established for duct leakage, there is no mention of duct system sizing or the static pressure that the system is operating at. A Right-sized system with tight ducts will not perform well if the distribution system is poorly sized. I suggest that a Manual D be performed, with appropriate input criteria specified, along with the requirement that the system operate within the manufacturers design static pressures. Please note that it takes me about 20-30 minutes to develop a Manual D once I have completed a Manual J and that it takes about one minute to check the static pressure.