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Ms. Abigail Daken
US EPA
ENERGY STAR
1200 Pennsylvania Ave NW
Washington, DC 20460

Re: ENERGY STAR Product Specifications for Furnaces, Final Draft, Version 3.0 and 4.0:

Ingersoll Rand Residential Solutions, manufacturer of Trane and American Standard residential heating and air conditioning products, appreciates the opportunity to comment on the EPA's Final Draft of Version 3.0 and 4.0 specification for ENERGY STAR Furnaces.

In general, we applaud the extension of the effective date for the Air Leakage requirement. At the same time we continue to believe, as stated in our October 4, 2010 response, that a single AFUE level of $\geq 92\%$ is a better approach than the regional requirements laid out in this final draft.

There are a number of instances in the final draft that need clarification or correction. These are listed below:

Line 31-34:

The definition of a "Product Family" is given, but never referenced in the specification. Lines 223-225 refer to the definition of "Basic Model provided in Section 1", but that does not exist. We suggest that "Product Family" definition be changed to:

Basic Model Groups (BMGs). ...A Basic Model Group is a family of models which have identical ratings for heating input, output heating capacity, electric power (PE), auxiliary electrical energy consumption (EAE), fossil fuel energy consumption (EF), and annual fuel utilization efficiency (AFUE).

Line 36-38:

The definition of AFUE should be changed to conform to the official definition in ASHRAE-Standard 103 (2007) as cited in 10 CFR 430 Subpart B Appendix N Para 10.1.

Line 40-43:

The definitions of the terms E_F and E_{AE} need to be added with reference to ASHRAE-Standard 103 (2007) and 10 CFR 430, Part B, Appendix N. Since DOE has proposed changing the definition of E_{AE} to include standby and off mode electric power, this ENERGY STAR specification needs to define clearly which definition is to be used.

Additionally, the definition of "e" needs to be corrected to show that it is the ratio of the furnace electrical consumption to the furnace's total energy use. The electrical consumption, E_{AE} , includes more than just the blower motor electrical usage.



Line 50-52:

The definition for HDD needs to be more precise. One possibility is as follows:

Heating Degree Days (HDD): HDD for each state are calculated by subtracting the population-weighted daily average temperature for that state from a balance temperature of 65° F, and summing only positive values over an entire year.”

Line 190-199:

The section on rounding needs to be reworked as it remains confusing. Line 194 states that rounding-up is not allowed to qualify, but Line 197 states that reported results need to be rounded. Perhaps this would be clearer if the requirement would be for reporting to be to one significant figure more than that of the specification. Additionally, Table 1 needs to be referenced when citing “specification limit”.

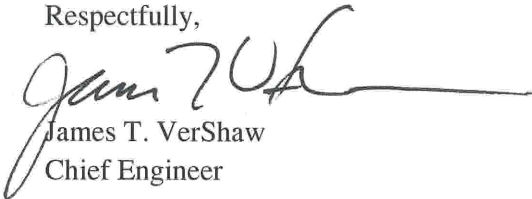
Line 207-211:

The warranty requirement, as written, is so non-specific that it is meaningless. All furnace manufacturers offer warranties. We recommend that this section be removed.

Line 233:

In Table 2 the notation, (Version 4.0 only), needs to be moved to the first column. The version reference is to the Energy Star Requirement, not to the test method.

Respectfully,



James T. VerShaw
Chief Engineer