

**INTERPRETATION IC 90.1-2019-1 OF  
ANSI/ASHRAE/IES STANDARD 90.1-2019  
Energy Standard for Buildings Except Low-Rise Residential Buildings**

**Date Approved:** June 1, 2020

**Request from:** Richard Lord, Carrier Corporation, 2325 Sarvisberry Place, Monteagle, TN 37356.

**Reference:** This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IES Standard 90.1-2019, Section 6 and Table 6.8.1-16, regarding minimum efficiency requirements for heat pump and heat recovery chiller packages.

**Background:** Table 6.8.1-16 was introduced into ASHRAE/IES 90.1-2019 to define the requirements for the new emerging chiller application that can provide simultaneous cooling and heating and offer great opportunities for systems related energy savings. In the table both cooling minimum efficiencies as well as heating efficiencies are defined. For heating duty Table 6.8.1-16 defines efficiency requirements for 105 °F, 120 °F, 140 °F and 140 °F boost, leaving condenser water, which are based on the reference AHRI 550/590(IP) and AHRI 551/591(SI) standard. The actual chiller that would meet these heating rating conditions would likely be different products and have different compression, heat exchangers, and refrigerants. Compliance with all four requirements does not make sense and is not practical, but the table and ASHRAE/IES 90.1-2019 is not clear as to what compliance requirements are for the multiple heating rating conditions and metrics. The original intent of the table was not to require compliance with all 4 heat requirements but was not clarified in the standard or table footnotes. Also, for the air source products there is some confusion about the requirements for the 47 °F and 17 °F heating rating conditions and the intent was that similar to air source heat pumps covered in Table 6.8.1-2, compliance with both are required.

**Interpretation No.1:** For heat pumps the 4 heating rating conditions of 105 °F, 120 °F, 140 °F, and 140 °F boost, only compliance with one rating condition and efficiency are required. The cooling requirement must be met.

**Question No.1:** Is this interpretation correct?

**Answer No.1:** Yes.

**Interpretation No.2:** For air-source products there is a rating and efficiency metric at 47 °F and 17 °F ambient source temperatures. Compliance with both heating efficiencies is required. The cooling requirement must be met.

**Question No.2:** Is this interpretation correct?

**Answer No.2:** Yes.