INTERPRETATION TO AHRI STANDARDS 550/590-2020 (I-P) AND 551/591-2020 (SI) - 3

PERFORMANCE RATING OF WATER-CHILLING AND HEAT PUMP WATER-HEATING PACKAGES USING THE VAPOR COMPRESSION CYCLE

Date Approved: February 16, 2022

Question: Should the fouling factor correction ΔT_{adj} be applied to both entering and leaving water temperatures?

References: Section 4.6.1 Method for Simulating Fouling Factor Allowance, Table 1. Definition of Operating Condition Tolerances and Stability Criteria

Answer: No. The fouling factor correction ΔT_{adj} must be applied to the controlled temperature for a given heat exchanger (added to the target condenser entering water temperature or subtracted from the target evaporator leaving water temperature in cooling mode). Operating condition tolerance limits per Table 1 apply to the adjusted target temperature. Flow rate through the heat exchanger must be set to the rated flow rate for the load point within the tolerance limits in Table 1. Capacity must meet the requirements for the load point within the tolerance limits in Table 1.

Note that the test requires control over one temperature and the flow rate in a heat exchanger within tolerances given in Table 1. The uncontrolled temperature may vary as long as the tolerances on the other parameters are met for a valid test.