Cold Climate Air-Source Heat Pump Specification

As facilitated by Northeast Energy Efficiency Partnerships (NEEP)

The following specification defines a set of performance requirements and reporting requirements to meet the voluntary "Cold-climate Air-Source Heat Pump Specification" (ccASHP Specification). The specification was designed to identify air-source heat pumps that are best suited to heat efficiently in cold climates (IECC climate zone 4 and higher). The specification is intended as a model equipment specification to be used broadly by energy efficiency program administrators in cold climates as a minimum requirement for program qualification. It also is intended for engineers, contractors, and other practitioners who need assurance that the equipment they select will have the required heating capacity at design temperature without unnecessary oversizing, and will serve the load efficiently throughout the ambient temperature range.

Stakeholders should be aware that simply meeting the performance requirements does not necessarily mean a product is appropriate for all cold climate applications. Consumers, contractors, and designers should review building loads, equipment capacities at design temperatures, and other important factors before selecting equipment

Scope

- Air-to-air, split system heat pumps
- Both single-zone and multi-zone systems
- <65k Btu/hour at 47˚F (dry bulb)
- Ducted and ductless systems
- Does NOT include ground-source or air-to-water heat pump systems

Performance Requirements

- Compressor must be variable capacity
- Indoor and outdoor units must be part of an AHRI matched system
- ENERGY STAR Certified
- COP @5° F $\geq$1.75 (at maximum capacity operation)
- Ductless: HSPF $\geq$10 for Single-zone systems or HSPF $\geq$9 for Multi-zone systems
- Ducted: HSPF $\geq$10
- Engineering data for each system must be reported through the attached "*Cold Climate Air-Source Heat Pump Performance Information Tables*". Incomplete tables will not be considered.
- When providing data for the varying temperature conditions, do not include the power required for defrost cycling or drain pan heater operation. If a pan heater is integrated with, or is available as an accessory to, this information will be provided separately.