| v3 - LEED 2008

Space heating and cooling equipment

EAc6 | Possible 4 points

Glossary

Intent

Reduce energy consumption associated with the heating and cooling system.

Requirements

Note: Both the space heating and the space cooling equipment must meet the requirements of this credit. If only one type of equipment qualifies, then half the points should be taken. Homes built either without air-conditioning or without heating should be modeled under EA 1, using the default (minimum efficiency allowed) in both the reference and the rated homes.

Prerequisites

6.1 **Good HVAC design and installation**. Meet each of the following requirements:

1. Design and size HVAC equipment properly using ACCA Manual J, the ASHRAE 2001 Handbook of Fundamentals, or an equivalent computation procedure.
2. Install HVAC equipment that meets the requirements of the ENERGY STAR for Homes national Builder Option Package (**Table 1**).
3. Install programmable thermostat (except heat pumps and hydronic systems).

Credits

6.2 **High-efficiency HVAC** (2 points). Design and install HVAC equipment that is better than the equipment required by the ENERGY STAR Builder Option Package (**Table 1**).

OR

6.3 **Very high-efficiency HVAC** (maximum 4 points). Design and install HVAC equipment that is substantially better than the equipment required by the ENERGY STAR Builder Option Package (**Table 1**). Any piping designed as part of a heat pump system to carry water that is well above (or below) the thermostatic temperature settings in the home must have R-4 insulation or greater.

Note: The maximum of 4 points is available only if a heat pump is installed. Furnace and boiler systems can earn a maximum of 3 points.

Table 1a HVAC Requirements for IECC Climate Zones 4-8

		HVAC equipment					
					Ground-source heat pumps		
	End use	Central AC and air source heat pumps	Furnaces (gas, oil or propane)	Boilers (gas, oil or propane)	Open loop	Closed loop	Direct expansion
EA 6.1: Good HVAC Design and Installation (prerequisite)	Cooling	≥ 13 SEER			≥ 16.2 EER	≥ 14.1 EER	≥ 15 EER
	Heating	≥ 8.2 HSPF	≥ 90 AFUE	≥ 85 AFUE	≥ 3.6 COP	≥ 3.3 COP	≥ 3.5 COP
EA 6.2: High-Efficiency HVAC (2 points)	Cooling	≥ 14 SEER			≥ 17.8 EER	≥ 15.5 EER	≥ 16.5 EER
	Heating	≥ 8.6 HSPF	≥ 92 AFUE	≥ 87 AFUE	≥ 4.0 COP	≥ 3.6 COP	≥ 3.9 COP
EA 6.3: Very High Efficiency HVAC (heat pump, 4 points; other systems, 3 points)	Cooling	≥ 15 SEER			≥ 19.4 EER	≥ 17 EER	≥ 18 EER
	Heating	≥ 9.0 HSPF	≥ 94 AFUE*	≥ 90 AFUE	≥ 4.3 COP	≥ 4.0 COP	≥ 4.2 COP

* Furnace with low electric energy use.

Table 1b HVAC Requirements for IECC Climate Zones 1-3

		HVAC equipment					
					Ground-source heat pumps		
	End use	Central AC and air source heat pumps	Furnaces (gas, oil or propane)	Boilers (gas, oil or propane)	Open loop	Closed loop	Direct expansion
EA 6.1: Good HVAC Design and Installation (prerequisite)	Cooling	≥ 14 SEER			≥ 16.2 EER	≥ 14.1 EER	≥ 15 EER
	Heating	≥ 8.2 HSPF	≥ 80 AFUE	≥ 80 AFUE	≥ 3.6 COP	≥ 3.3 COP	≥ 3.5 COP
EA 6.2: High-Efficiency HVAC (2 points)	Cooling	≥ 15 SEER			≥ 17.8 EER	≥ 15.5 EER	≥ 16.5 EER
	Heating	≥ 8.6 HSPF	≥ 90 AFUE	≥ 85 AFUE	≥ 4.0 COP	≥ 3.6 COP	≥ 3.9 COP
EA 6.3: Very High Efficiency HVAC (heat pump, 4 points; other systems, 3 points)	Cooling	≥ 16 SEER			≥ 19.4 EER	≥ 17 EER	≥ 18 EER
	Heating	≥ 9.0 HSPF	≥ 92 AFUE*	≥ 87 AFUE	≥ 4.3 COP	≥ 4.0 COP	≥ 4.2 COP

* Furnace with low electric energy use.

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