

Energy HVAC codes to know

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Familiarize yourself with these energy codes before you get going on your new construction project.

The 2010 version of ASHRAE 90.1 has increased the minimum efficiency requirements of new HVAC (and other energy end-use equipment) by about 18% compared to the 2007 version. HVAC efficiency is measured as Energy Efficiency Ratio (EER in Btu cooling/watt input), Coefficient of Performance (COP in Btu cooling/Btu input) or Full-Load Value (FLV in kW input/Ton cooling).

Packaged rooftop unitary minimum efficiency requirements are shown in the table below. The 2010 ASHRAE code has also significantly broadened the requirement for economizers on new units.

Unitary Air Conditioner Minimum Efficiency Requirements (ASHRAE 90.1-2010)		
Size Range	Full-load EER (Btu/watt)	
	Air-Cooled	Water-Cooled
65-135 kBtu/hr (5-11 ton)	11.2	11.9
135-240 kBtu/hr (11-20 ton)	11.0	11.8
240-760 kBtu/hr (20-63 ton)	9.9	12.2
>760 kBtu/hr (>63 ton)	9.6	11.5

Next, take a look at the minimum efficiency requirements for packaged terminal air conditioners (PTACs) and packaged terminal heat pumps (PTHPs).

PTAC/PTHP Minimum Efficiency Requirements (ASHRAE 90.1-2010)		
	Non-Standard Size	Standard Size
Cooling		
Full-load EER (Btu/watt)		
PTAC (7,000 Btuh)	9.4	11.7
PTAC (15,000 Btuh)	7.7	9.3
PTHP (7,000 Btuh)	9.3	11.9
PTHP (15,000 Btuh)	7.6	9.5
Heating		
Full-load COP (Kbtuh)		
PTHP (7,000 Btuh)	2.7	3.3
PTHP (15,000 Btuh)	2.5	2.9

Here are the chiller minimum efficiency requirements. By comparison, the best available FLV is 0.47-0.58 kW/ton for large (>150 ton) water-cooled chillers.

Chiller Minimum Efficiency Requirements (ASHRAE 90.1-2010)			
Compressor Type/Capacity	Full-Load Rating, COP	Full-Load Rating, FLV (kW/ton)	Part-Load Ratings, IPLV (kW/ton)
Reciprocating (75-150 tons)	4.54	0.775	0.615
Screw/Scroll (<150 tons)	4.54	0.775	0.615
Screw (150-300 tons)	5.17	0.680	0.580
Screw (301-800 tons)	5.67	0.620	0.540
Centrifugal (<300 tons)	5.55	0.634	0.596

Meet (and exceed!) code requirements with your HVAC system. Our incentives can help you make it happen.

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