

(This foreword is provided for information only and is not part of the draft addendum.)

FOREWORD

Draft Addendum 90.1u –Publication Draft. ARI’s industry-wide certification program for water-source, ground-water-source and ground-source heat pumps will begin using the ISO test procedure in the year 2000. Since the directory listings will be based on the ISO test procedure, it would be most helpful to code officials to have the Standard show requirements based on the ISO procedure. The added values show the ratings using the ISO procedure that are equivalent to the current efficiency requirements that are based on ARI standards.

Addendum 90.1u

See attached Table 6.2.1B

**Table 6.2.1B (I-P Units)
Unitary and Applied Heat Pumps, Electrically Operated, Minimum Efficiency
Requirements**

Equipment Type	Size Category	Sub-Category or Rating Condition	Minimum Efficiency ^b	Efficiency as of 10/29/2001 ^b	Test Procedure ^a
Air Cooled, (Cooling Mode)	< 65,000 Btu/h ^d	Split System	10.0 SEER	10.0 SEER	ARI 210/240
		Single Package	9.7 SEER	9.7 SEER	
	≥65,000 Btu/h and < 135,000 Btu/h	Split System and Single Package	8.9 EER ^c	10.1 EER ^c	ARI 340/360
		Split System and Single Package	8.5 EER ^c	9.3 EER ^c	
Water-Source ^e (Cooling Mode)	< 17,000 Btu/h	85°F Entering Water	9.3 EER		ARI 320
		86°F Entering Water	<u>9.3 EER</u>	11.2 EER	ISO-13256-1
	≥ 17,000 Btu/h and < 65,000 Btu/h	85°F Entering Water	9.3 EER		ARI 320
		86°F Entering Water	<u>9.3 EER</u>	12.0 EER	ISO-13256-1
	≥65,000 Btu/h and < 135,000 Btu/h	85°F Entering Water	10.5 EER		ARI 320
		86°F Entering Water	<u>10.5 EER</u>	12.0 EER	ISO-13256-1
Groundwater-Source ^e (Cooling Mode)	< 135,000 Btu/h	70°F Entering Water	11.0 EER		ARI 325
		59°F Entering Water	<u>13.8 EER</u>	16.2 EER	ISO-13256-1
Ground Source ^e (Cooling Mode)	< 135,000 Btu/h	77°F Entering Brine	10.0 EER		ARI 330
		77°F Entering Water	<u>10.8 EER</u>	13.4 EER	ISO-13256-1
Air Cooled (Heating Mode)	< 65,000 Btu/h ^d (Cooling Capacity)	Split System	6.8 HSPF	6.8 HSPF	ARI 210/240
		Single Package	6.6 HSPF	6.6 HSPF	
	≥65,000 Btu/h and < 135,000 Btu/h (Cooling Capacity)	47°F db/43°F wb Outdoor Air	3.0 COP	3.2 COP	
≥135,000 Btu/h (Cooling Capacity)	47°F db/43°F wb Outdoor Air	2.9 COP	3.1 COP	ARI 340/360	
Water-Source ^e (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	70°F Entering Water	3.8 COP		ARI 320
		68°F Entering Water	<u>3.9 COP</u>	4.2 COP	ISO-13256-1
Groundwater-Source ^e (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	70°F Entering Water	3.4 COP		ARI 325
		50°F Entering Water	<u>3.4 COP</u>	3.6 COP	ISO-13256-1
Ground Source ^e (Heating Mode)	< 135,000 Btu/h (Cooling Capacity)	32°F Entering Brine	2.5 COP		ARI 330
		32°F Entering Water	<u>2.8 COP</u>	3.1 COP	ISO-13256-1

^a Section 12 contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.

^b IPLVs and Part load rating conditions are only applicable to equipment with capacity modulation.

^c Deduct 0.2 from the required EERs and IPLVs for units with a heating section other than electric resistance heat.

^d Single-phase air-cooled heat pumps < 65,000 Btu/h are regulated by NAECA. SEER and HSPF values are those set by NAECA.

^e Prior to 10/29/2001 minimum efficiency shall be determined using either the ARI standard listed or ISO 13256-1 with their respective rating conditions.