

1323.0780 TABLE 7.8, PERFORMANCE REQUIREMENTS FOR WATER HEATING EQUIPMENT.

ASHRAE Standard 90.1, Section 7, Table 7.8, is amended to read:

TABLE 7.8 Performance Requirements for Water Heating Equipment

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Performance Required^a
Electric Water Heaters	≤12 kW	Resistance ≥20 gal	0.97-0.00132V EF
	>12 kW	Resistance ≥20 gal	20+35 √V SL, Btu/h
	≤24 Amps and ≤250 Volts	Heat Pump	0.97-0.00132V EF
Gas Storage Water Heaters	≤75,000 Btu/h	≥20 gal	0.67-0.0019V EF
	>75,000 Btu/h	<4,000(Btu/h)/gal	80% E _t (Q/800+110 √V) SL, Btu/h
Gas Instantaneous Water Heaters	>50,000 Btu/h and <200,000 Btu/h	≥4,000(Btu/h)/gal and <2 gal	0.67-0.0019V EF
	≥200,000 Btu/h ^c	≥4,000(Btu/h)/gal and <10 gal	80% E _t
	≥200,000 Btu/h	≥4,000(Btu/h)/gal and ≥10 gal	80% E _t (Q/800+110 √V) SL, Btu/h
Oil Storage Water Heaters	≤105,000 Btu/h	≥20 gal	0.59-0.0019V EF
	>105,000 Btu/h	<4,000(Btu/h)/gal	78% E _t (Q/800+110 √V) SL, Btu/h
Oil Instantaneous Water Heaters	≤210,000 Btu/h	≥4,000(Btu/h)/gal and <2 gal	0.59-0.0019V EF
	>210,000 Btu/h	≥4,000(Btu/h)/gal and <10 gal	80% E _t
	>210,000 Btu/h	≥4,000(Btu/h)/gal and ≥10 gal	78% E _t (Q/800+110 √V) SL, Btu/h
Hot Water Supply Boilers, Gas and Oil	≥300,000 Btu/h and <12,500,000 Btu/h	≥4,000(Btu/h)/gal and <10 gal	80% E _t

Hot Water Supply Boilers, Gas		$\geq 4,000(\text{Btu/h})/\text{gal}$ and ≥ 10 gal	$80\% E_t (Q/800+110/\sqrt{V})$ SL, Btu/h
Hot Water Supply Boilers, Oil		$\geq 4,000(\text{Btu/h})/\text{gal}$ and ≥ 10 gal	$78\% E_t (Q/800+110/\sqrt{V})$ SL, Btu/h
Pool Heaters Oil and Gas	All		$78\% E_t$
Heat Pump Pool Heaters	All		4.0 COP
Unfired Storage Tanks	All		R-12.5

^aEnergy factor (EF) and thermal efficiency (E_t) are minimum requirements, while standby loss (SL) is maximum Btu/h based on a 70° F temperature difference between stored water and ambient requirements. In the EF equation, V is the rated volume in gallons. In the SL equation, V is the rated volume in gallons and Q is the nameplate input rate in Btu/h.

^bInstantaneous water heaters with input rates below 200,000 Btu/h must comply with these requirements if the water heater is designed to heat water to temperatures 180° F or higher.

Statutory Authority: *MS s 326B.02; 326B.101; 326B.106; 326B.13*

History: *33 SR 1473*

Published Electronically: *June 17, 2009*