

**WAC 51-11C-403234 Table C403.2.3(4)—Minimum efficiency requirements—Warm air furnaces and unit heaters.**

**Table 403.2.3(4)**

**Warm Air Furnaces and Combination Warm Air Furnaces/Air-Conditioning Units, Warm Air Duct Furnaces and Unit Heaters, Minimum Efficiency Requirements**

Equipment Type	Size Category (Input)	Subcategory or Rating Condition	Minimum Efficiency <sup>d, e</sup>	Test Procedure <sup>a</sup>
Warm air furnaces, gas fired	< 225,000 Btu/h	—	78% AFUE or 80% $E_t^c$	DOE 10 C.F.R. Part 430 or ANSI Z21.47
	≥ 225,000 Btu/h	Maximum capacity <sup>c</sup>	80% $E_t^f$	ANSI Z21.47
Warm air furnaces, oil fired	< 225,000 Btu/h	—	78% AFUE or 80% $E_t^c$	DOE 10 C.F.R. Part 430 or UL 727
	≥ 225,000 Btu/h	Maximum capacity <sup>b</sup>	81% $E_t^g$	UL 727
Warm air duct furnaces, gas fired	All capacities	Maximum capacity <sup>b</sup>	80% $E_c$	ANSI Z83.8
Warm air unit heaters, gas fired	All capacities	Maximum capacity <sup>b</sup>	80% $E_c$	ANSI Z83.8
Warm air unit heaters, oil fired	All capacities	Maximum capacity <sup>b</sup>	80% $E_c$	UL 731

- For SI: 1 British thermal unit per hour = 0.2931 W.
- a Chapter 6 of the referenced standard contains a complete specification of the referenced test procedure, including the referenced year version of the test procedure.
  - b Minimum and maximum ratings as provided for and allowed by the unit's controls.
  - c Combination units not covered by the National Appliance Energy Conservation Act of 1987 (NAECA) (3-phase power or cooling capacity greater than or equal to 65,000 Btu/h [19 kW]) shall comply with either rating.
  - <sup>d</sup>  $E_t$  = Thermal efficiency. See test procedure for detailed discussion.
  - <sup>e</sup>  $E_c$  = Combustion efficiency (100% less flue losses). See test procedure for detailed discussion.
  - <sup>f</sup>  $E_c$  = Combustion efficiency. Units must also include an IID, have jackets not exceeding 0.75 percent of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.
  - <sup>g</sup>  $E_t$  = Thermal efficiency. Units must also include an IID, have jacket losses not exceeding 0.75 percent of the input rating, and have either power venting or a flue damper. A vent damper is an acceptable alternative to a flue damper for those furnaces where combustion air is drawn from the conditioned space.

[Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-403234, filed 2/1/13, effective 7/1/13.]

**Reviser's note:** The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.