

**WAC 51-11C-403326 Table C403.3.2(6)—Minimum efficiency requirements—Gas-fired and oil-fired boilers.**

**Table C403.3.2(6)  
Gas- and Oil-Fired Boilers—Minimum Efficiency Requirements**

Equipment Type <sup>a</sup>	Subcategory or Rating Condition	Size Category (Input)	Minimum Efficiency	Test Procedure <sup>a</sup>
Boilers, hot water	Gas-fired	< 300,000 Btu/h <sup>g,h</sup> for applications outside the U.S.	82% AFUE	DOE 10 C.F.R. 430 Appendix N
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>e</sup>	84% $E_t^d$	DOE 10 C.F.R. 431.86
		> 2,500,000 Btu/h and ≤ 10,000,000 Btu/h <sup>b</sup>	85% $E_t^d$	
		> 10,000,000 Btu/h <sup>b</sup>	82% $E_c^c$	
	Oil-fired <sup>f</sup>	< 300,000 Btu/h <sup>g,h</sup>	84% AFUE	DOE 10 C.F.R. 430 Appendix N
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>e</sup>	87% $E_t^d$	DOE 10 C.F.R. 431.86
		> 2,500,000 Btu/h <sup>b</sup>	88% $E_c^c$	
		> 10,000,000 Btu/h <sup>b</sup>	84% $E_c^d$	
Boilers, steam	Gas-fired	< 300,000 Btu/h <sup>g</sup>	81% AFUE	DOE 10 C.F.R. 430 Appendix N
	Gas-fired - all, except natural draft	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>b</sup>	82% $E_t^d$	DOE 10 C.F.R. 431.86
		> 2,500,000 Btu/h <sup>a</sup>	79% $E_t^d$	
		> 10,000,000 Btu/h <sup>b</sup>	79% $E_t^d$	
	Gas-fired - natural draft	≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>b</sup>	81% $E_t^d$	
		> 2,500,000 Btu/h <sup>b</sup>	82% $E_t^d$	
		> 10,000,000 Btu/h <sup>b</sup>	79% $E_t^d$	
	Oil-fired <sup>f</sup>	< 300,000 Btu/h	82% AFUE	DOE 10 C.F.R. 430 Appendix N
		≥ 300,000 Btu/h and ≤ 2,500,000 Btu/h <sup>b</sup>	84% $E_t^d$	DOE 10 C.F.R. 431.86
		> 2,500,000 Btu/h <sup>b</sup>	85% $E_t^d$	
> 10,000,000 Btu/h <sup>b</sup>		81% $E_t^d$		

For SI: 1 British thermal unit per hour = 0.2931 W.

- <sup>a</sup> Chapter 6 contains a complete specification of the referenced standards, which include test procedures, including the reference year version of the test procedure.
- <sup>b</sup> These requirements apply to boilers with rated input of 8,000,000 Btu/h or less that are not packaged boilers and to all packaged boilers. Minimum efficiency requirements for boilers cover all capacities of packaged boilers.
- <sup>c</sup>  $E_c$  = Combustion efficiency (100 percent less flue losses).
- <sup>d</sup>  $E_t$  = Thermal efficiency.
- <sup>e</sup> Maximum capacity – Minimum and maximum ratings as provided for and allowed by the unit's controls.
- <sup>f</sup> Includes oil-fired (residual).
- <sup>g</sup> Boilers shall not be equipped with a constant burning pilot light.
- <sup>h</sup> A boiler not equipped with a tankless domestic water heating coil shall be equipped with an automatic means for adjusting the temperature of the water such that an incremental change in inferred heat load produces a corresponding incremental change in the temperature of the water supplied.
- <sup>i</sup> This table is a replica of ASHRAE 90.1 Table 6.8.1-6 Gas- and Oil-Fired Boilers—Minimum Efficiency Requirements.

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapters 19.27A and 19.27 RCW. WSR 22-14-091, 23-12-101, and 23-20-021, § 51-11C-403326, filed 7/1/22, 6/7/23, and 9/25/23, effective 3/15/24.]