

(Effective July 1, 2023)

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

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

- ^a Chapter 6 contains a complete specification of the referenced standards, which include test procedures, including the reference year version of the test procedure.
- ^b 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.
- ^c E_c = Combustion efficiency (100 percent less flue losses).
- ^d E_t = Thermal efficiency.
- ^e Maximum capacity – Minimum and maximum ratings as provided for and allowed by the unit's controls.
- ^f Includes oil-fired (residual).
- ^g Boilers shall not be equipped with a constant burning pilot light.
- ^h 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.
- ⁱ 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, § 51-11C-403326, filed 7/1/22, effective 7/1/23.]