

(Effective July 1, 2023)

WAC 51-11C-403323 Table C403.3.2(3)—Water chilling packages—Minimum efficiency requirements.

**Table C403.3.2(3)
Water Chilling Packages—Minimum Efficiency Requirements^{a,b,e,f}**

Equipment Type	Size Category	Units	Path A		Path B		Test Procedure ^c	
			FL	IPLV,IP	FL	IPLV,IP		
Air-cooled chillers	< 150 tons	EER(Btu/Wh)	≥ 10.100	≥ 13.700	≥ 9.700	≥ 15.800	AHRI 550/590	
	≥ 150 tons	EER(Btu/Wh)	≥ 10.100	≥ 14.000	≥ 9.700	≥ 16.100		
Air cooled without condenser, electrically operated	All capacities	EER(Btu/Wh)	Air-cooled chillers without condensers shall be rated with matching condensers and comply with the air-cooled chiller efficiency requirements					
Water cooled, electrically operated, positive displacement	< 75 tons	kW/ton	≤ 0.750	≤ 0.600	≤ 0.780	≤ 0.500		
	≥ 75 tons and < 150 tons	kW/ton	≤ 0.720	≤ 0.560	≤ 0.750	≤ 0.490		
	≥ 150 tons and < 300 tons	kW/ton	≤ 0.660	≤ 0.540	≤ 0.680	≤ 0.440		
	≥ 300 tons and < 600 tons	kW/ton	≤ 0.610	≤ 0.520	≤ 0.625	≤ 0.410		
	≥ 600 tons	kW/ton	≤ 0.560	≤ 0.500	≤ 0.585	≤ 0.380		
Water cooled, electrically operated, centrifugal	< 150 tons	kW/ton	≤ 0.610	≤ 0.550	≤ 0.695	≤ 0.440		
	≥ 150 tons and < 300 tons	kW/ton	≤ 0.610	≤ 0.550	≤ 0.695	≤ 0.400		
	≥ 300 tons and < 400 tons	kW/ton	≤ 0.560	≤ 0.520	≤ 0.595	≤ 0.390		
	≥ 400 tons and < 600 tons	kW/ton	≤ 0.560	≤ 0.500	≤ 0.585	≤ 0.380		
	≥ 600 tons	kW/ton	≤ 0.560	≤ 0.500	≤ 0.585	≤ 0.380		
Air cooled absorption, single effect	All capacities	COP(W/W)	≥ 0.600	NR	NA ^d	NA ^d		AHRI 560
Water cooled absorption, single effect	All capacities	COP(W/W)	≥ 0.700	NR	NA ^d	NA ^d		
Absorption double effect, indirect fired	All capacities	COP(W/W)	≥ 1.000	≥ 1.050	NA ^d	NA ^d		
Absorption double effect, direct fired	All capacities	COP(W/W)	≥ 1.000	≥ 1.000	NA ^d	NA ^d		

For SI: 1 ton = 3517 W, 1 British thermal unit per hour = 0.2931 W, °C = [(°F) - 32]/1.8.

NR = No requirement.

- ^a Chapter 6 contains a complete specification of the referenced standards, which includes test procedures, including the referenced year version of the test procedure.
- ^b The requirements for centrifugal chiller shall be adjusted for nonstandard rating conditions per Section C403.3.2.4 and are applicable only for the range of conditions listed there. The requirements for air-cooled, water-cooled positive displacement and absorption chillers are at standard rating conditions defined in the referenced test procedure.
- ^c Both the full load and IPLV,IP requirements must be met or exceeded to comply with this standard. When there is a Path B, compliance can be with either Path A or Path B for any application.
- ^d NA means the requirements are not applicable for Path B and only Path A can be used for compliance.
- ^e FL is the full-load performance requirements, and IPLV,IP is for the part-load performance requirements.
- ^f This table is a replica of ASHRAE 90.1 Table 6.8.1-3 Water-Chilling Packages—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-403323, filed 7/1/22, effective 7/1/23.]