

**2018 Washington State Energy Code
SECTION C403 RELOCATION CROSSWALK**

Mechanical Systems – General (2018 IECC Change). **Section C403** of the 2018 International Energy Conservation Code was extensive reorganized to be easier to use, reduce redundancies and be more specific to equipment type. Most of this language is marked as a change, but the language itself has not changed in most cases—just the location. These changes are reflected in the 2018 Washington State Energy Code.

Those sections marked with an asterisk had no significant change in the language.

2015 Section	2018 Section	Section Title
C403.1	C403.1	General.
NEW	C403.1.1	HVAC total system performance ratio (HVAC TSPR)
C403.2.1	C403.1.2*	Calculation of heating and cooling loads.
NEW	C403.1.3	Data centers.
C403.2	C403.2	System design.
C403.2.4.4	C403.2.1*	Zone isolation required.
	C403.2.2	Ventilation and exhaust
C403.2.6	C403.2.2.1*	Ventilation.
NEW	C403.2.2.2	Exhaust.
C403.2.13	C403.2.3	Variable flow capacity.
NEW (ICC)	C403.3	Equipment Selection.
C403.2.2	C403.3.1*	Equipment and system sizing.
C403.2.3	C403.3.2	HVAC equipment performance requirements.
	C403.3.2.1	Chillers.
C403.2.3.1	C403.3.2.2*	Water-cooled centrifugal chilling package.
C403.2.3.2	C403.3.2.3*	Positive displacement (air- and water-cooled) chilling package.
C403.2.3.3	C403.3.2.4*	Packaged electric heating and cooling equipment.
C403.2.3.4	C403.3.2.5*	Humidification.
C403.4.6	C403.3.3*	Hot gas bypass limitation.
C403.4.2.5	C403.3.4*	Boiler turndown.
C403.6	C403.3.5	Dedicated outdoor air systems (DOAS).
C403.6.1	C403.3.5.1	Energy recovery ventilation with DOAS.
C403.6.2	C403.3.5.2	Heating/cooling system fan controls.
NEW	C403.3.5.3	Decoupled DOAS supply air.
C403.6.3	C403.3.5.4	Impracticality.
NEW	C403.3.6	Ventilation for Group R-2 occupancy
C403.2.4	C403.4*	HVAC system controls
C403.2.4.1	C403.4.1	Thermostatic controls.
C403.2.4.1.1	C403.4.1.*	Heat pump supplementary heat.
C403.2.4.1.2	C403.4.1.2*	Deadband.
C403.2.4.1.3	C403.4.1.3*	Setpoint overlap restriction.
NEW (ICC)	C403.4.1.4	Heated or cooled vestibules.
C403.2.5	C403.4.1.5*	Hot water boiler outdoor temperature setback control.
NEW	C403.4.1.6	Door switches for HVAC system thermostatic controls.
C403.2.4.2	C403.4.2*	Off-hour controls.
C403.2.4.2.1	C403.4.2.1*	Thermostatic setback.
C403.2.4.2.2	C403.4.2.2*	Automatic setback and shutdown.
C403.2.4.2.3	C403.4.2.3	Automatic start and stop.

NEW	C403.4.2.4	Exhaust system off-hour controls.
NEW	C403.4.2.5	Transfer and destratification fan system off-hour controls.
C403.4.2	C403.4.3*	Hydronic systems controls.
C403.4.2.1	C403.4.3.1*	Three-pipe system.
C403.4.2.2	C403.4.3.2*	Two-pipe changeover system.
C403.4.2.3	C403.4.3.3*	Hydronic (water loop) heat pump systems.
C403.4.2.3.1	C403.4.3.3.1*	Temperature dead band.
C403.4.2.3.2	C403.4.3.3.2	Heat rejection.
C403.4.2.3.3	C403.4.3.3.3*	Isolation valve.
C403.4.2.4	C403.4.4	Part load controls.
C403.4.2.6	C403.4.5*	Pump isolation.
C403.4.2.7	C403.4.6	Variable flow controls
C403.2.4.8	C403.4.7*	Combustion heating equipment controls.
NEW	C403.4.7.1	Combustion decorative vented appliance, combustion fireplace and fire pit controls.
C403.2.4.9	C403.7.4	Group R-1 hotel/motel guestrooms.
C403.2.4.10	C403.4.9*	Group R-2 and R-3 dwelling units.
C403.2.4.11	C403.4.10*	Group R-2 sleeping units.
C403.2.4.12	C403.4.11*	Direct digital control systems.
C403.2.4.12.1	C403.4.11.1*	DDC applications.
C403.2.4.12.2	C403.4.11.2*	DDC controls.
C403.2.4.12.3	C403.4.11.3*	DDC display.
C403.3	C403.5	Economizers.
C403.3.1	C403.5.1*	Integrated economizer control.
C403.3.2	C403.5.2*	Economizer heating system impact.
C403.3.3	C403.5.3*	Air economizers.
C403.3.3.1	C403.5.3.1*	Design capacity.
C403.3.3.2	C403.5.3.2*	Control signal.
C403.3.3.3	C403.5.3.3*	High-limit shutoff.
C403.3.3.4	C403.5.3.4*	Relief of excess outdoor air.
C403.3.3.5	C403.5.3.5*	Economizer dampers.
C403.3.4	C403.5.4*	Water-side economizers.
C403.3.4.1	C403.5.4.1*	Design capacity.
C403.3.4.2	C403.5.4.2*	Maximum pressure drop.
C403.2.4.7	C403.5.5*	Economizer fault detection and diagnostics (FDD).
C403.4.4	C403.6	Requirements for mechanical systems serving multiple zones.
NEW (ICC)	C403.6.1	Variable air volume (VAV) and multiple zone systems.
C403.4.4.1	C403.6.2*	Single duct variable air volume (VAV) systems, terminal devices.
C403.4.4.2	C403.6.3*	Dual duct and mixing VAV systems, terminal devices.
C403.4.4.4	C403.6.4*	Supply-air temperature reset controls.
C403.4.4.3	C403.6.5	Multiple-zone VAV system ventilation optimization controls.
NEW (ICC)	C403.6.6	Parallel-flow fan-powered VAV air terminal control.
C403.4	C403.6.7*	Hydronic and multiple-zone HVAC system controls and equipment.
C403.4.1.2	C403.6.8*	Set points for direct digital control.
C403.4.1.1	C403.6.9*	Static pressure sensor location.
C403.7	C403.6.10	High efficiency variable air volume (VAV) systems.
NEW (ICC)	C403.7	Ventilation and exhaust systems.

C403.2.6.2	C403.7.1	Demand controlled ventilation.
C403.2.6.3	C403.7.2	Occupancy sensors.
NEW (ICC)	C403.7.3	Ventilation air heating control.
C403.2.4.9	C403.7.4	Automatic control of HVAC systems serving guestrooms.
C403.2.4.9	C403.7.4.1	Temperature setpoint controls.
NEW	C403.7.4.2	Ventilation controls.
C403.2.6.4	C403.7.5*	Enclosed loading dock and parking garage exhaust ventilation system controls
C403.6.4.1	C403.7.5.1*	System activation devices for enclosed loading docks.
C403.6.4.2	C403.7.5.2*	System activation devices for enclosed parking garages.
C403.5.1	C403.7.6*	Energy recovery ventilation systems.
C403.2.7	C403.7.7	Exhaust systems.
	C403.7.7.1	Kitchen exhaust systems.
C403.2.7.1	C403.7.7.1.1	Replacement air.
C403.2.7.1	C403.7.7.1.2	Kitchen exhaust hood certification and maximum airflow.
C403.2.7.1	C403.7.7.1.3	Kitchen exhaust hood system.
C403.2.7.2	C403.7.7.2*	Laboratory exhaust systems.
NEW	C403.7.7.3	Transfer air.
C403.2.7.3	C403.7.8	Shutoff dampers.
C403.2.7.3	C403.7.8.1	Shutoff dampers for building isolation.
C403.2.7.3	C403.7.8.2	Shutoff dampers for return air.
C403.2.7.3	C403.7.8.3	Damper leakage rating.
C403.2.7.3	C403.7.8.4	Damper actuation.
C403.2.11	C403.8	Fan and fan controls.
C403.2.11.1	C403.8.1	Allowable fan motor horsepower.
C403.2.11.2	C403.8.2	Motor nameplate horsepower.
C403.2.11.3	C403.8.3*	Fan efficiency.
C403.2.11.4	C403.8.4*	Group R occupancy exhaust fan efficacy.
NEW (ICC)	C403.8.5	Fan controls.
C403.2.11.5	C403.8.5.1*	Fan airflow control.
C403.4.3	C403.9*	Heat rejection and heat recovery equipment.
C403.4.3.1 / C403.4.3.1.1	C403.9.1	Fan speed control.
C403.2.13.1.1	C403.9.1.1	Variable flow controls.
C403.2.13.1.2	C403.9.1.2	Limitation on centrifugal fan cooling towers.
C403.4.3.1.2	C403.9.2*	Multiple-cell heat rejection equipment.
C403.4.3.2	C403.9.3*	Limitation on centrifugal fan open-circuit cooling towers.
C403.4.3.3	C403.9.4*	Tower flow turndown.
C403.5.4	C403.9.5*	Heat recovery for service water heating.
C403.5.2	C403.9.6	Steam Condensate systems.
C403.5.3	C403.9.7	Refrigeration condenser heat recovery.
NEW	C403.9.8	Heat recovery for space heating.
	C403.9.8.1	Water to water heat recovery.
	C403.9.8.2	Exhaust heat recovery.
	C403.9.8.3	Process heat recovery.
	C403.9.8.4	Water to water heat recovery sizing.
NEW (ICC)	C403.10	Construction of HVAC system elements.
C403.2.8	C403.10.1	Duct and plenum insulation and sealing.
C403.2.8.1	C403.10.1.1	Ducts conveying outside air.

C403.2.8.2	C403.10.1.2	Other supply and return ducts
C403.2.8.3	C403.10.2*	Duct construction.
C403.2.8.3.1	C403.10.2.1*	Low-pressure duct systems.
C403.2.8.3.2	C403.10.2.2*	Medium-pressure duct systems.
C403.2.8.3.3	C403.10.2.3*	High-pressure duct systems.
C403.2.9	C403.10.3*	Piping insulation.
C403.2.9.1	C403.10.3.1*	Protection of piping insulation.
NEW (ICC)	C403.11	Mechanical systems located outside of the building thermal envelope.
C403.2.12	C403.11.1*	Heating outside a building.
C403.2.4.5	C403.11.2*	Snow- and ice-melt system controls.
C403.2.4.6	C403.11.3*	Freeze protection system controls.
NEW	C403.12	High efficiency single-zone variable air volume (VAV) systems.
C403.2.10	C403.13*	Commissioning