

Health and Safety Guide for K-12 Schools in Washington State – 2024 Update of the 2003 Edition

References:

[WAC 246-366-080](#): Ventilation

[WAC 246-366-090](#): Heating

[WAC 246-366-100](#): Temperature Control

[Chapter 51-52 WAC](#): STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2021 EDITION OF THE INTERNATIONAL MECHANICAL CODE

[2021 WSEC C 2ndEd 012824.pdf \(wa.gov\)](#)

[WAC 51-54A-0915](#): Carbon monoxide detection.

[School Indoor Air Quality Best Management Practices Manual \(wa.gov\)](#) (IAQBMP)

8. Operating and Maintaining HVAC Systems

[Indoor Air Quality Tools for Schools: Preventive Maintenance Guidance Documents | US EPA](#)

[Reference Guide for Indoor Air Quality in Schools | US EPA](#)

[Washington Sustainable Schools Protocol \(2018\) OSPI](#)

Washington Department of Commerce Clean Buildings Performance Standard [Operations and Maintenance Reporting Tool](#)

G. HVAC – Preventative Maintenance		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
G 001	All occupied areas of the facility shall be heated to maintain a minimum temperature of 65 degrees F except for gymnasiums which shall be a minimum of 60 degrees F. <u>Note: The code does not address maximum temperature in schools. Based on ASHRAE 55 80 degrees F is the maximum recommended temperature for occupied instructional areas.</u> <u>Recommended winter temperatures of 68-72 deg F @ RH 40-60%</u> <u>Recommended summer temperatures of 75-78 deg F @ RH 40-60%</u>	246-366-090 2021 WSEC C302.1	ASHRAE 55 WSSP IEQ 5.0	x	
G 002	Heating, ventilating, and/or air conditioning systems shall be equipped with automatic room temperature controls. Computerized systems that control each room from a remote location are acceptable.	246-366-100		x	
G 003	Change all return air and outside air intake filters on a regular basis <u>and as needed during a wildfire smoke event.</u> -Ensure tight fit around filters-- no air by-passes. Date and initial the filters when changed.		OSPI and DOH IAQBMP EPA		
G 004	Pressure wash <u>Clean</u> all heating and cooling coils using the an approved coil cleaner method allowed by the equipment manufacturer. Make sure not to exceed deviate the coil manufactures' pressure recommendations for cleaning coils.		OSPI and DOH IAQBMP EPA		
G 005	Clean and sanitize all condensate drain fans pans in all fan coils and large air handling units. Ensure pans are sloped to drain - avoid standing or stagnant pool of moisture.		OSPI and DOH IAQBMP EPA		
G 006	Clean and sanitize all "squirrel" cage assemblies fan blades and fan housing . Check bearings. Check any excess vibration.		OSPI and DOH IAQBMP EPA		

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G 007	Inspect the damper linkage on all return and outside damper assemblies. Ensure that linkage and damper blades move freely, i.e., without restriction.		OSPI and DOH IAQBMP EPA		
G 008	Clean and sanitize all intake grilles, screens, and connecting ducts <u>as needed</u> . Be sure to wash these thoroughly. Ensure intake ducts are clean and do not allow water intrusion.		OSPI and DOH IAQBMP EPA		
G 009	Adjust damper controls so that they always maintain minimum outside quantities--adjust as necessary. This is generally recommended in the original equipment mechanical operations and maintenance booklets.		OSPI and DOH IAQBMP EPA		
G 010	Calibrate carbon dioxide sensors used for demand controlled ventilation systems. Ensure these sensors are located correctly and controllers are functioning properly.		OSPI and DOH IAQBMP EPA		
G 011	Ensure damper controls provide for proper building operating pressures (positive building pressure relative to outside is typical).		OSPI and DOH IAQBMP EPA	x	
G 012	Ensure those rooms and/or zones containing indoor air contaminants are maintained at lower pressure than surrounding room or zones <u>and air exhausts to the outside to remove for</u> contaminants containment e.g. from restrooms, kitchens, science labs, <u>art rooms, and</u> storerooms, custodial storerooms, etc. Ensure that exhaust fans are working effectively and are controlled for proper run times.	51-52/IMC 501, 502, 510	OSPI and DOH	x	
G 013	Ensure that HVAC exhaust is not re-entrained into building or incoming air handling systems.	51-52/IMC 501, 502	OSPI and DOH	x	
G 014	Check all flue vents for leakage. Ensure no re-entrainment of flue gases back into building or air handlers.	51-52/IMC	OSPI and DOH	x	
G 015	Ensure all outside air intakes are free of contaminates from sources such as garbage dumpsters, vehicle exhaust, shop and laboratory emissions, boiler, and generator exhaust, etc.	51-52/IMC	OSPI and DOH	x	
G 016	Gas fired roof top units—RTU's <u>Air Handling Equipment</u> a. Clean and sanitize <u>heating and cooling</u> coils b. Clean and sanitize <u>condensate and emergency</u> drain pans c. Test <u>gas fired</u> heat exchangers for any cracks. Use a smoke test or use an instrument that measures carbon monoxide.	51-52/IMC	OSPI and DOH	x	
G 017	Check combustion air and pressures in zones with atmospheric vented combustion equipment to ensure no spillage or back drafting. Clean combustion air intake screens.	51-52/IMC	OSPI and DOH	x	

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G 018	Adjust economizer controls for proper operation. Make sure all dry bulb <u>dry bulb or</u> enthalpy (thermodynamic) controls are operational. Check dampers and linkage for proper operation.		OSPI and DOH IAQBMP EPA	x	
G 019	Check boiler/furnace efficiency by measuring the carbon monoxide (CO) level in the exhaust stack emissions.		IAQBMP EPA		
G 020	Install and check carbon monoxide detectors/alarms in mechanical rooms, <u>attics, closets,</u> and occupied zones <u>with combustion appliances</u> for leakage/re-entrainment of carbon monoxide (CO) from operating equipment, e.g., boiler, furnace, water heater, generator, etc.	51-54A-0915	OSPI and DOH	x	
G 021	HVAC system maintenance and operation should be managed using a checklist. A good example is the "long checklist" in the EPA "Building Air Quality" guide or the "ventilation" checklist in the EPA "Tools for Schools" kit. See the Washington Department of Commerce Clean Buildings Performance Standard Operations and Maintenance Reporting Tool and EPA IAQ TFS's Preventative Maintenance Guidance Documents and		OSPI and DOH WSD of Com IAQBMP EPA	x	