

Instructions

- Read the IAQ
 Backgrounder and
 the Background
 Information for
 this checklist.
- 2. Keep the
 Background
 Information and
 make a copy of
 this checklist for
 each ventilation
 unit in your school,
 as well as a
 copy for future
 reference.
- Complete the Checklist.
 - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
 - Make comments in the "Notes" section as necessary.
- Return the checklist portion of this document to the IAQ Coordinator.

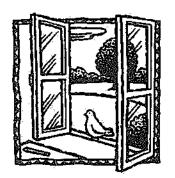
Ventilation Checklist

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Na	ame: Eric Proia		
Sc	hool: Middlefield Memorial School		
Ur	nit Ventilator/AHU No: # /		
	pom or Area: AHV - ROOF Date Completed: 01-04-20	1	
Ro	oom or Area: Date Completed:	*	
Sig	gnature:		
1.	OUTDOOR AIR INTAKES		
1a.	Marked locations of all outdoor air intakes on a small floor plan (for example, a fire escape floor plan) Floor Plan on Bos	No □	N/A
1b.	Ensured that the ventilation system was on and operating in "occupied" mode		
	TO THE PARTY OF TH		
	TIVITY 1: OBSTRUCTIONS Ensured that outdoor air intakes are clear of obstructions, debris, clogs,		
10.	or covers		
1d.	Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)		
AC	TIVITY 2: POLLUTANT SOURCES		
	Checked ground-level intakes for pollutant sources (dumpsters, loading		
	docks, and bus-idling areas)		
1f.	Checked rooftop intakes for pollutant sources (plumbing vents; kitchen, toilet, or laboratory exhaust fans; puddles; and mist from air-conditioning cooling towers)		
1g.	Resolved any problems with pollutant sources located near outdoor air	- Const	_
- 6.	intakes (e.g., relocated dumpster or extended exhaust pipe)		
	TIVITY 3: AIRFLOW		
	Obtained chemical smoke (or a small piece of tissue paper or light plastic).		
1i.	Confirmed that outdoor air is entering the intake appropriately		
2.	SYSTEM CLEANLINESS		
AC	TIVITY 4: AIR FILTERS		
2a.	Replaced filters per maintenance schedule + wice Annually		
	Shut off ventilation system fans while replacing filters (prevents dirt from blowing downstream)		
	Vacuumed filter areas before installing new filters		
2d.	Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter		

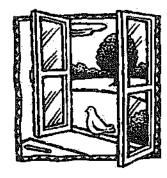
2e. Confirmed proper installation of filters (correct direction for airflow).......

2. SYSTEM CLEANLINESS (continued)

ACTIVITY 5: DRAIN PANS 2f. Ensured that drain pans slant toward the drain (to prevent water from Yes No N/A 2g. Cleaned drain pans ACTIVITY 6: COILS **ACTIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS** 2i. Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean 2k. Ensured that ducts are clean **ACTIVITY 8: MECHANICAL ROOMS** 2m. Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies 3. CONTROLS FOR OUTDOOR AIR SUPPLY 3a. Ensured that air dampers are at least partially open (minimum position) 3b. Ensured that minimum position provides adequate outdoor air **ACTIVITY 9: CONTROLS INFORMATION** 3c. Obtained and reviewed all design inside/outside temperature and humidity requirements, controls specifications, as-built mechanical drawings, **ACTIVITY 10: CLOCKS, TIMERS, SWITCHES** 3d. Turned summer-winter switches to the correct position 3e. Set time clocks appropriately 3f. Ensured that settings fit the actual schedule of building use (including ACTIVITY 11: CONTROL COMPONENTS- No Powmakes 3g. Ensured appropriate system pressure by testing line pressure at both the ð 3i. Replaced control system filters at the compressor inlet based on the compressor manufacturer's recommendation (for example, when you 関 3i. Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions) X ACTIVITY 12: OUTDOOR AIR DAMPERS 31. Ensured that the recirculating relief and/or exhaust dampers are visible for inspection 3m. Ensured that air temperature in the indoor area(s) served by each

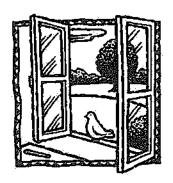


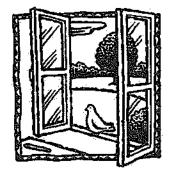
NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3.	CONTROLS FOR OUTDOOR AIR SUPPLY (continued)			
3n.	Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	. '	No □	N/A
30.	Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	j		
	If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F		۵	
3q,	If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F			. 🗆
3r.	If the outdoor air damper does not move, confirmed the following items: The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	. 2ai	۵	
	 Moving parts are free of impediments (e.g., rust, corrosion) Electrical wire or pneumatic tubing connects to the damper actuator 	. 🗟		
	The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	.W	۵	'n
Pro	ceed to Activities 13–16 if the damper seems to be operating properly.			
	TIVITY 13: FREEZE STATS			
3s. OR	Disconnected power to controls (for automatic reset only) to test continuity across terminals			2
3t.	Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	. E XT	ם	<u> </u>
3u.	Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats			
clos	TE: HVAC systems with water coils need protection from the cold. The freeze to the outdoor air damper and disconnect the supply air when tripped. The tyge is 35°F to 42°F.			
AC	TIVITY 14: MIXED AIR THERMOSTATS			
	Ensured that the mixed air stat for heating mode is set no higher than 65°F	. E		٥
3w.	Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	, 12		اِت
AC	TIVITY 15: ECONOMIZERS			
	Confirmed proper economizer settings based on design specifications or local practices	. T	a	ם
NO:	TE: The dry-bulb is typically set at 65°F or lower.			
	Checked that sensor on the economizer is shielded from direct sunlight Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications			٥
load Dry and	TE: Economizers use varying amounts of cool outdoor air to assist with the or of the room or rooms. There are two types of economizers, dry-bulb and enti-bulb economizers vary the amount of outdoor air based on outdoor temperor enthalpy economizers vary the amount of outdoor air based on outdoor temperor humidity level.	coolii thalp iture,	<i>y</i> .	-

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued) **ACTIVITY 16: FANS** 3aa. Ensured that all fans (supply fans and associated return or relief fans) Yes No N/A that move outside air indoors continuously operate during occupied NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply. 4. AIR DISTRIBUTION **ACTIVITY 17: AIR DISTRIBUTION** 4a. Ensured that supply and return air pathways in the existing ventilation system 4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies. 4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows) 4d. Ensured that supply and return vents are open and unblocked NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents. 4e. Modified the HVAC system to supply outside air to areas without an outdoor 4f. Modified existing HVAC systems to incorporate any room or zone layout and population changes 4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of 4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities 4i. Ensured that classrooms are free of uncomfortable drafts produced by air from supply terminals **ACTIVITY 18: PRESSURIZATION IN BUILDINGS** NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity, 4j. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, 5. EXHAUST SYSTEMS **ACTIVITY 19: EXHAUST FAN OPERATION** 5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s) \Box If fans are running but air is not flowing toward the exhaust intake, check for the following: · Inoperable dampers · Obstructed, leaky, or disconnected ductwork. · Undersized or improperly installed fan · Broken fan belt





5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kit and labs by keeping them under negative pressure (as compared to surrounding space		\$,
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces.	No M	N/A
Stand outside the room with the door slightly open while checking airflow high and the door opening (see "How to Measure Airflow").	low ti	n
5c. Ensured that air is flowing toward the exhaust intake		۵
ACTIVITY 21: EXHAUST DUCTWORK 5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition	٥	a
6. QUANTITY OF OUTDOOR AIR		
ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS		
NOTE: Refer to "How to Measure Airflow" for techniques.		
6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit		0
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	۵	۵
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	0	
ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTIFIES		
6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1.	۵	۵
6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet	_	_
the recommended levels in Table 1	<u> </u>	i.i

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