A2.1: OUTDOOR AIR INTAKE AND DAMPERS IN AHU

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Pollution Sources: No exhaust outlet w/i 25 ft? Recorded distance _____				
No cooling tower w/i 25 ft? Recorded distance _____				
No trash container w/i 25 ft? Recorded distance _____				
No other source within 25 ft.? Other sources _____				
Operating hours: Open during all occupied hours ? Operating plan:_____				
Bird screen: Mesh < 0.5"? Specified mesh_____"				
Other:				
Walkthrough Checklist				
Odors: No noticeable odors from outdoors (e.g., roof tar, vehicle exhaust) ?				
Air intake: No obstruction , bird droppings, or nests?				
Pollutant sources: No sources w/I 25 ft. of intake (e.g., sanitary vents, solvents)?				
Bird screen: No obstruction, no nests, clean?				
Face and bypass dampers: Good condition, ease of movement?				
Control sequence: Matches design specs?				

A2.2: OUTDOOR AIR QUANTITY AT AHU

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

Note: *For VAV systems, measure outdoor air quantity in both heating and cooling modes and in transition seasons. Measure both morning and afternoon flows.*

Option A: Measure outdoor air flow

This is the preferred if using a flow hood to measure outdoor air flow is feasible.

Measured supply air from AHU **A**	**Measured outdoor air entering AHU** **B**	**C = B/A** **Percent outdoor air[(1)]** **C**	**Peak occupancy for space served by AHU[(2)]** **D**	**E = D/B** **Outdoor air per occupant [(3)]** **E**
cfm	cfm	%	occupants	cfm

Option B: Calculate outdoor air flow:

Outdoor air (in percent) = $\{(C_s - Cr)/ (Co - Cr)\} \times 100$

Cs = ppm of carbon dioxide in the supply air

Cr = ppm of carbon dioxide in return air

Co = ppm of carbon dioxide in outside air (at outdoor air intake)

% Outdoor Air (See Above) **A**	**Measured Supply Air Flow** **B**	**Number of Occupants (peak number[(2)]** **C**	**Supply Air Per Occupant** **D = B/C** **D**	**Outdoor air per occupant[(3)]** **E = D x (A/100)** **E**
%	*cfm*	*occupants*	*cfm*	*cfm*

(1) Percent outdoor air is a useful parameter to record. It is used when estimating the outdoor air per occupant in a given space served by the AHU: (See Form A1)
(2) For office space, a default value for peak occupancy may be estimated: = floor area (ft^2) divided by 150.
(3) Should be compared with ASHRAE Standard 62-1989 (minimum of 20 cfm/occupant for office space)

A2.3: MIXING PLENUM AND DAMPERS IN AHU

Building _____Equipment _____ Manufacturer _____File # _____
Address _____Prepared by _____ Date_____

	Condition		Priority	
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Mixed air temperature: Setting:_____. OK?				
Freeze stat: Setting ___ OK?				
Pressure (negative): Design pressure ____. OK?				
Walkthrough Checklist				
Mixing plenum: Clean, no obstructions?				
Floor drain: Trapped, charged with water?				
All Dampers Tight ?				
Motor connections secure?				
Motor functions OK?				

A2.4: FILTERS

Building _____Equipment _____ Manufacturer _____File # _____
Address _____Prepared by _____ Date_____

Parameter	Condition		Notes	Priority
	OK	Not OK		L M H
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Rated dustspot efficiency _____. OK?				
Walkthrough checklist				
Odor: No noticeable odor?				
Accessibility: Easily accessible for maintenance?				
Installation: Correct with no bypassing air?				
Pressure drop: Meets manufacturer's specs?				
Moisture/dampness: Not excessive?				
Filter loading: No excessive dirt/dust?				

A2.5 HEATING COIL IN AHU

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

Parameter	Condition		Notes	Priority
	OK	Not OK		L M H
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Supply water temperature setting _____. OK?				
Temp. setting of discharge thermostat_____. OK?				
Walkthrough checklist				
Accessibility: Easily accessible for inspection and maintenance?				
Coil condition: Clean, no obstruction or corrosion, no leaks visible?				
Face and bypass dampers: Good condition, ease of movement?				
Bypass damper motors: Smooth operation?				
Control sequence: Matches design specs?				
Reheat coils: Clean, no obstruction, no leaks, operational?				

A2.6 COOLING COILS AND CONDENSATE PANS IN AHU

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Supply water temperature setting: _____ Design setting below 45°F?				
Walkthrough checklist				
Cooling coils				
Easily accessible for inspection & maintenance ?				
Clean, no rust?				
No condensing water droplets in the air stream?				
No condensation drainage problems?				
Condensate drain pans				
No noticeable odor?				
Easily accessible for inspection and maintenance?				
Clean, no residue, clogs, or debris?				
No standing water, overflow, or leakage?				
No visible bacterial or fungal growth (slime)?				
Properly sloped and draining?				
Traps properly installed, filled with liquid?				

A2.7 MECHANICAL ROOM

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Priority	
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Mixed air: Mechanical room used as mixing chamber?	yes	no		
EMS / DDC:				
Operator on site / controlled off-site?	yes	no		
Walkthrough checklist				
Odors: No unusual odors?				
Cleanliness: No dirt/ dust , buildup on floors and equipment?				
Storage: No cleaning supplies, maintenance supplies, trash, etc.?				
Moisture: No water leaks, pooling of water, past water damage?				
Noise: No excess noise and vibration?				
Leakage: No penetrations to adjacent spaces?				
Controls : All controls operational?				

A2.8 STEAM HUMIDIFIER

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Priority	
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Steam or hot water : From a potable source?				
Minimum setpoint _____ Intended setting RH<45%?				
High limit setpoint _____ Intended setting: <70%?				
Walkthrough checklist				
Installation: Properly installation				
Drainage: Proper drainage, drain line trapped				
Clean: Pans clean, no standing water or overflow				
Deposits: No mineral deposits				
Microbial contamination:				
No visible biological growth				
If duct liner within 12 feet, no dirt or mold growth?				

A2.9 SPRAY HUMIDIFIER OR AIR WASHER

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Spill containment: System in place?				
Biocide treatment schedule: Last treatment date____. OK?				
Walkthrough checklist				
Coverage: Complete coil coverage?				
Nozzles: Working properly?				
Cleanliness :Pans clean, no standing water or overflow?				
Microbial contamination: No signs of mold or bacteria?				
Drains: Properly trapped?				

A2.10 CONTROLS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Profile items may be completed prior to walkthrough*	
Thermostat				
Setpoints: Summer: ____. Winter ___. Calibrated?				
Not in direct sun or near supply vent?				
Humidistat : Setpoint: _____ Calibrated?				
Dehumidistat: Setpoint: ____ Calibrated?				
Walkthrough checklist				
Time clocks				
Read correct time?				
Settings match schedule(set back/set up, night/weekend?				
Switches: Summer/winter in correct position?				
Pneumatic Controls				
Line pressure for occupied and unoccupied setting OK?				
Line pressure at thermostat and damper actuator OK?				
Control system changed per manufacturer's instruction?				
Line dryer preventing moisture buildup?				
Freeze-stat: Tripping mechanism operating at proper temperature?				

A2.11 AIR DUCTS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Walkthrough checklist				
Condition.				
No damage, dents, leaks?				
Mounting secure?				
Connections sealed.				
Access: Easy access for maintenance?				
Clean:.				
No excess dirt or erosion?				
No debris?				
No water condensation. No , dampness, mold, biological growth?				
Fire damper: Open and accessible for maintenance				
Access doors: Closed?				
Grilles: Clean and unobstructed.				
Return air path: Clean and unobstructed?				

A2.12 AIR PLENUMS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Profile items may be completed prior to walkthrough*	
Layout: Adequate for air distribution?				
Balance: Capable for balancing?				
Walkthrough checklist				
Accessibility: Easily accessible for maintenance				
Odors: No unusual odors in plenum or space?				
Clean: No debris, excess dirt, excess dampness, signs of biological growth?				
Leaks: No leaks from other systems (look for stained ceiling tiles?				
Fireproofing and insulation: Secure, clean, no erosion. Does not contaminate space?				
Fire dampers: Open?				
Ceiling tiles: All tiles in place. No stains?				
Openings: No unintentional openings?				

A2.13 DIFFUSERS, GRILLES, AND REGISTERS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Profile items may be completed prior to walkthrough*	
Allocation: Every room has supply air (or transfer path/grilles) plus return (or exhaust) air?				
Walkthrough checklist				
Supply diffusers:				
No excess dirt or dust?				
Open, noticeable flow of air?				
Return or exhaust.				
Not close to supply diffuser?				
No excess dirt on registers?				
Noise: Minimal diffuser and register noise?				

A2.14 FAN AND FAN CHAMBERS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Profile items may be completed prior to walkthrough*	
Fan Controls. Design sequence _____				
Walkthrough checklist				
Chamber:				
Clean, no trash or storage?				
Drain traps wet or sealed?				
No air leaks; door seals tight?				
No standing water?				
No corrosion?				
Fan:				
No excess vibration, no unusual noise?				
Fan blades clean, not damaged?				
Belts with proper tension, no excess wear, guards installed?				
Controls:				
Operational and calibrated?				
Sequence consistent with design ?				

A2.15 EXHAUST FANS IN SPECIAL USE AREAS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Exhaust is installed				
Meets code?				
Walkthrough checklist				
Fans: Working during occupied hours?				
Registers: Open, clear?				
Makeup air path: Adequate make-up air, clear path?				
Room Pressure: Negative relative to building?				
Noise: No excessive noise?				
Grilles: Clean, unobstructed?				
Controls: Operational?				
Doors: Closed?				

A2.16 TERMINAL BOXES (VAV / CAV)

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
VAV				
Min. stops_____. OK?				
Min. flow _____ OK?				
Min. outside air _____. OK?				
Supply set pt. summer ___ OK?				
Supply set pt. winter___ OK?				
Walkthrough checklist				
Exterior: Overall exterior condition OK?				
Ducts: Visible ductwork condition and insulation OK?				
Noise: No air or fan noise or vibration?				
Accessibility: All parts accessible for maintenance				
Filter: condition and installation OK?				
Dampers: Operational?				
Control setpoints: Match design setpoints?				
Reheat coils: Clean, operational, no obstruction?				

A2.17 FAN COIL UNIT / UNIT VENTILATOR/ INDUCTION UNITS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority		
Parameter	**OK**	**Not OK**	**Notes**	**L**	**M**	**H**
Walkthrough checklist						
Condition: No rust, no corrosion?						
Ducts: Visible ductwork condition and insulation OK?						
Noise: No unusual noise or vibration?						
Duct vibration isolation: Installed, good condition?						
Accessibility. All parts accessible for maintenance?						
Filter: Clean. Pressure drop within manufacturer's specs?						
Controls: Match design settings?						
Dampers : Operational, no obstructions.						
Pipes: No leaks?						
Wall/floor cavity sealed?						
Drain pan. Clean, no residue, no biol. growth (e.g. slime)?						
Sloped, no standing water, no leaks?						
No overflow, trapped drain?						

A2.18 HEAT PUMP

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

Parameter	Condition		Notes	Priority
	OK	Not OK		L M H
Walkthrough Checklist				
Exterior condition: No corrosion, air leakage?				
Ducts: Visible ductwork condition OK?				
Noise: No unusual noise or vibration?				
Duct vibration isolation: Installed and condition OK?				
Accessibility: All parts accessible for maintenance?				
Filter: Condition OK? Installed properly?				
Controls: Calibrated?				
Pipe insulation: Condition OK				
Coil and drain pan: Evaporator coil and drain pan clean. Pan drains OK.				
Refrigerant: No bubbling in refrigerant sight glass				
Refrigerant line: Proper outlet and inlet temperatures?				
Discharge air streams: No unusual odors				
Leakage: No uncontained leakage from system				

A2.19 BOILER

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Priority	
Parameter	**OK**	**Not OK**	**Notes**	**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Combustion air: Dedicated supply from outside available?				
Chemical treatment: Last treated _____. OK?				
Walkthrough checklist				
Boiler room:				
Clean, no combustibles?				
Odors: No unusual odors?				
Noise: No noise or vibration?				
Flue: No corrosion, leaks, breeching tight?				
Fuel system: Tight, no leaks?				
Purge cycle: Working?				
Door gaskets: Tight?				
Combustion air. At least 1 square inch free area per 2000 BTU input?				

A2.20 CHILLER

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority		
Parameter	**OK**	**Not OK**	**Notes**	**L**	**M**	**H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*			
Refrigerant temp: (<45°F for moisture removal ?)						
Chemical treatment: Last treated _____. OK?						
Walkthrough checklist						
Leaks: No refrigerant leaks?						
Condensation: No condensation problems?						
Purge cycle: Normal?						
Disposal: Proper disposal of waste oil and refrigerant.						
Storage: Proper storage of spare refrigerant?						

A2.21 CONDENSING EQUIPMENT (COOLING TOWER)

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Profile Checklist			*Some profile data may be entered prior to walkthrough*	
Chemical treatment: Last treatment date: _____. OK?				
Walkthrough checklist				
Sump: Clean, no slime or algae?				
Baffles: Clean, no slime or algae?				
Water: Condition normal. No signs of slime or algae?				
Mist eliminators: Clean, no carryover?				
Leakage: No water leakage or overflow?				
Nearby receptors: Mist not migrating to inappropriate receptors?				
Noise: No unusual noise or vibration?				
Dirt separator: Working?				
Biocide treatment: Working and effective?				

A2.22 EMERGENCY GENERATORS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition		Notes	Priority
Parameter	**OK**	**Not OK**		**L M H**
Walkthrough checklist				
Machine room: No odors?				
Room pressure: Negative?				
Exhaust: Exhaust stack in good condition?				

A2.23 ELEVATOR, STAIRWELLS

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority		
Parameter	**OK**	**Not OK**	**Notes**	**L**	**M**	**H**
Walkthrough checklist						
Elevator Systems						
Shaft is clean (floor, walls, and ceiling); adequately ventilated?						
Elevator is clean, ventilated?						
Stairwells						
No unusual odors?						
Doors close and latch properly?						
No openings allowing uncontrolled air flow?						
Clean, dry, no signs of smoking?						

A2.24 AIR COMPRESSOR AND PNEUMATIC SYSTEM

Building _____ Location_____ Prepared by_____ ____Date_____
Equipment _____ Manufacturer _____Other ID _____File # _____

	Condition			Priority		
Parameter	**OK**	**Not OK**	**Notes**	**L**	**M**	**H**
Profile Checklist			*Profile items may be completed prior to walkthrough*			
Pressure: Operating range _____. OK?			**Notes**			
Relief valve: Setting _____. OK?						
Cycling: For compressors with alternating cycles . Timing between cycles _____. OK?						
Walkthrough checklist						
Odor: No odor from compressed air?						
Contamination: No evidence of oil contaminating system ?						
System sizing: Appropriate?						
Pneumatic lines: Good condition?						
Leakage: No observable system air leakage?						
Dessicator and filters: Good condition?						
Function: Effective compression?						
Belt: Tight fit, no excess wear?						