OUTDOOR AIR ACCEPTANCE

CERTIFICATE OF ACCEPTANCE		NRCA-MCH-02-A
Outdoor Air Acceptance		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:
System Name or Identification/Tag:	System Location or Area Served:	

Note: Submit one Certificate of Acceptance for each system that must demonstrate compliance.	Enforcement Agency Use: Checked by/Date

Intent:	*Verify measured outside airflow reading is within 10% of the total required outside airflow. Required for all newly installed HVAC units. Reference MECH-3C (Column H or Column I) or Mechanical Equipment Schedules.*

A. Construction Inspection

Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.

1. Supporting documentation needed to perform test includes:
   a. As-built and/or design documents (for example, Mechanical Equipment Schedules, Equipment Start-Up Sheets or Balancing Reports).
   b. 2013 Building Energy Efficiency Standards Nonresidential Compliance Manual *(NA7.5.1.1 Ventilation Systems: Variable Air Systems At-A-Glance and NA7.5.1.2 Constant Volume Systems Outdoor Air Acceptance At-A-Glance).*
   c. 2013 Building Energy Efficiency Standards.
2. Instrumentation needed to perform test includes:
   a. Watch
   b. Calibrated means to measure airflow (i.e. hot-wire anemometer, velocity pressure probe, etc.).
      i. Method and equipment used:_____
      ii. Equipment calibration date (must be within one year):_____
3. System type (check either VAV or CAV): ☐ VAV ☐ CAV
   a. Check if Variable Air Volume (VAV) and complete the following:
      i. Outside airflow is either factory calibrated or field calibrated.
         ☐ Check if factory calibrated and attach calibration certification.
         ☐ Check if field calibrated and attach calibration results.
      ii. Damper Control (must be checked):
         ☐ Dynamic damper control is being used to control outside air. (This is NOT a fixed minimum position).
      iii. One of the following dynamic controls is being utilized to control outside air (check method used)
         ☐ Outdoor Air CFM Compensation
         ☐ Energy Balance Method
         ☐ Demand Control Ventilation
         ☐ Return Fan Tracking
         ☐ Injection Fan Method
         ☐ Dedicated Minimum Ventilation Damper with Pressure Control
         ☐ Other Active Control, Describe: _____
   b. Check if Constant Air Volume (CAV) and verify the following:
      ☐ System is designed to provide a fixed minimum OSA when the unit is on.
4. Method of delivering outside air to the unit (check one of the following):
   ☐ Outside air is ducted to the return air plenum. Confirm that outside air is ducted to either (check one of the following):
      ☐ Within five ft. of the unit.
      ☐ Within 15 ft. of the unit, with the air directed substantially toward the unit.
   ☐ Return air plenum is NOT used to distribute outside air to the unit. I.e. outside air is ducted directly to the unit or outside air is provided independent of the unit.
5. Pre-occupancy purge has been programmed for the 1-hour period immediately before the building is normally occupied to provide (one of the following methods must be verified and checked):
   a. The conditioned floor area times the ventilation rate from the 2013 Building Energy Efficiency Standards TABLE 120.1-A, or 15 cfm per person times the expected number of occupants, whichever is less.
   b. 3 complete air changes to the zone served by the air handler.

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B. NA7.5.1.1 Outdoor Air Acceptance Functional Testing		☐ CAV	☐ VAV
Step 1: Disable demand control ventilation (if applicable)			
Step 2: Verify unit is not in economizer mode during test (economizer disabled).		☐	☐
Note: Shaded boxes do not apply for CAV systems			
Step 3: CAV and VAV testing at full supply airflow			
a.	Adjust supply air to achieve design airflow or maximum airflow at full cooling. Record VFD speed (Hz).		Hz
b.	Measured outdoor airflow reading (cfm)	cfm	cfm
c.	Required outdoor airflow (cfm) *(from MECH-3C, Column I, or Mechanical Equipment Schedules).*	cfm	cfm
d.	Time for outside air damper to stabilize after full supply airflow is achieved (minutes):		min
Step 4: VAV testing at reduced supply airflow		**CAV**	**VAV**
a.	Adjust supply airflow to either the sum of the minimum zone airflows, full heating, or 30% of the total design airflow. Record VFD speed (Hz).		Hz
b.	Measured outdoor airflow reading (cfm)		cfm
c.	Required outdoor airflow (cfm) *(from MECH-3C, Column I, or mechanical equipment schedules).*		cfm
d.	Time for outside air damper to stabilize after reduced supply airflow is achieved (minutes):		min
Step 5: Return to initial conditions (check)		☐	☐

C. Testing Calculations & Results			
Determine Percent Outside Air at full supply airflow ($\%OA_{FA}$) for Step 3			
a.	$\%OA_{FA}$ = Measured outdoor airflow reading /Required outdoor airflow (Step3b/Step3c)	%	%
b.	$\%OA_{FA}$ is within 10% of design Outside Air. ($\%OA_{FA} \leq 110\%$)	Y / N	Y / N
c.	Outside air damper position stabilizes within 5 minutes (Step 3d < 5 minutes)		Y / N
Determine Percent Outside Air at reduced supply airflow ($\%OA_{RA}$) for Step 4 (VAV only)			
a.	$\%OA_{RA}$ = Measured outdoor airflow reading /Required outdoor airflow reading (Step4b/Step4c)		%
b.	$\%OA_{RA}$ is within 10% of design Outside Air. ($OA_{RA} \leq 110\%$)		Y / N
c.	Outside air damper position stabilizes within 5 minutes (Step 4d < 5 minutes)		Y / N
Note: The intent of this test is to ensure that 1) all air handlers provide the minimum amount of OSA and 2) VAV air handlers use dynamic controls to avoid over ventilation.			

D. Evaluation	
☐	PASS: All Construction Inspection responses are complete and Testing Calculations & Results responses are positive (Y - yes)

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Acceptance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	ATT Certification Identification (If applicable):
City/State/Zip:	Phone:

FIELD TECHNICIAN'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Acceptance is true and correct.
2. I am the person who performed the acceptance verification reported on this Certificate of Acceptance (Field Technician).
3. The construction or installation identified on this Certificate of Acceptance complies with the applicable acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and signed by the responsible builder/installer and has been posted or made available with the building permit(s) issued for the building.

Field Technician Name:	Field Technician Signature:	
Field Technician Company Name:	Position with Company (Title):	
Address:	ATT Certification Identification (if applicable):	
City/State/Zip:	Phone:	Date Signed:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this Certificate of Acceptance.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Acceptance and attest to the declarations in this statement (responsible acceptance person).
3. The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and is posted or made available with the building permit(s) issued for the building.
5. I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Acceptance Person Name:	Responsible Acceptance Person Signature:	
Responsible Acceptance Person Company Name:	Position with Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed: