

High-Performance Measure Details

Measure Name DOAS with Ventilation Airflow & Occupancy Controls	Use Category HVAC – HP DOAS Ventilation Controls
Effective Date June 08, 2026	Version 1.2
Measure Code LM447	Measure Stage Early Adoption

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Technology Summary

Dedicated outdoor air systems (DOAS) with ventilation airflow and occupancy controls use occupancy-responsive control strategies to reduce unnecessary outdoor-air ventilation during periods of low or intermittent occupancy while maintaining required indoor air quality. Unlike conventional HVAC systems, where ventilation and space conditioning are often coupled, DOAS equipment is designed to provide and condition outdoor ventilation air separately from zone heating and cooling systems. Typical applications include offices, educational facilities, assembly spaces, hospitality buildings, high-rise multifamily common areas, tenant spaces, and other commercial buildings with variable occupancy patterns and significant ventilation requirements.

This measure focuses on DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation systems where outdoor-air delivery can be actively reduced in eligible spaces through demand control ventilation (DCV), occupancy-based ventilation controls (OBC), or a combination of both approaches. Current Title 24 requirements already establish baseline DCV and occupancy-responsive ventilation control requirements for certain space types and applications. However, code-minimum implementation does not always maximize the portion of building ventilation airflow that can be controlled, verified, and coordinated with DOAS fan turndown. This HPM is intended to encourage broader application of ventilation zoning, occupancy-responsive airflow reduction, and coordinated fan control so systems can reduce outdoor-air delivery when full design ventilation is not needed.

This measure matters for California electrification, decarbonization, and operational performance because ventilation air can represent a significant portion of HVAC energy use in commercial buildings. Reducing outdoor-air volumes during periods of reduced occupancy can lower DOAS fan energy and reduce the heating and cooling energy required to condition outdoor air, while still maintaining required ventilation performance. This opportunity is especially relevant as many commercial buildings experience more variable occupancy patterns due to hybrid work schedules, intermittent space use, and shifting operating hours. For all-electric and decarbonization-focused buildings, improved ventilation airflow control can help reduce unnecessary HVAC loads and support more stable part-load system operation.

Common performance gaps this HPM is designed to address include: (1) DOAS systems operating at constant outdoor-airflow regardless of actual occupancy; (2) ventilation zones that are not configured to take advantage of DCV or occupancy-responsive airflow reduction; (3) limited application of DCV or OBC beyond minimum code-required spaces; (4) DOAS fans that are not effectively controlled to reduce airflow and fan energy during lower ventilation demand; (5) control sequences that do not coordinate eligible ventilation zones, airflow control devices, sensors, and fan operation; and (6) lack of documentation demonstrating the portion of controllable peak outdoor airflow served by qualifying ventilation controls.

Relevant standards and references include 2025 California Title 24, Part 6 ventilation and control requirements; ANSI/ASHRAE Standard 62.1; ASHRAE Guideline 36; and applicable demand control ventilation, occupancy-based ventilation control, ventilation zoning, and BAS/EMS integration guidance.

Alignment with CEDA Program Goals

The CEDA program supports the implementation of energy efficiency measures that support Code Readiness's Long Term Tactical Plan (LTTP) to drive the goals of electrification, decarbonization, and load reduction.

Projects must meet the CEDA Inducement Requirements identified in the next section to receive an inducement and will be evaluated for level of interest in metering to support Code Readiness Objectives. This measure meets the CEDA program goals as follows:

- **Building partnerships with market stakeholders** by consulting on innovative technologies and best practices in energy efficiency, which can lead to the development of more effective solutions and accelerate the adoption of new technologies. As teams adopt the measure, this increases the volume of engineers able to design the equipment, contractors capable of installing the equipment, and owners able to operate the equipment.
- **Increasing the supply of high-performance measures and all-electric buildings** by combining electrification with energy efficiency, which can result in projects implementing measures to achieve greater energy savings, reduced emissions, and overall improved building performance. As more buildings specify and install DOAS with ventilation airflow controls in nonresidential buildings, this helps to increase the adoption of these measures in the market for others to use, including beyond new construction.
- **Increasing the demand for high-performance measures and all-electric buildings** by pushing for electrification that drives the need for technological advancements, supporting economic growth opportunities through innovation, and raising awareness of the benefits of electrification to increase consumer adoption. As demand in the market increases for newer technologies, the long-term benefit is increased demand for manufacturers and suppliers to provide additional options available in the market.
- **Advancing new high-performance measure technology** by raising public awareness about new technologies and their benefits, helping build acceptance and demand through market support advocacy efforts that can influence stakeholder decisions that enable technological innovation.
- **Providing Codes & Standards with projects of interest** to collect metered data that will inform future California energy codes.

CEDA Inducement Requirements

This measure is intended to address a market and implementation gap associated with enhanced ventilation airflow controls in DOAS and similar dedicated ventilation systems. Current Title 24 requirements establish baseline demand control ventilation (DCV) and occupancy-based ventilation control (OBC) requirements for certain space types and applications. However, code-minimum implementation does not always maximize the portion of building ventilation airflow that can be reduced during periods of low, intermittent, or variable occupancy.

This measure supports broader application of occupancy-responsive ventilation airflow reduction by encouraging ventilation zoning, qualifying control devices, and coordinated fan control for qualifying dedicated ventilation systems for systems with a design outdoor airflow rate greater than 3,000 CFM. Qualifying systems must be capable of reducing outdoor-air delivery in eligible spaces through DCV, OBC, or a combination of both approaches, while maintaining required ventilation rates, indoor air quality, safety requirements, and applicable code compliance.

Inducement eligibility is determined based on compliance with the System Design Requirements and Supporting Documentation Requirements identified below. The project must document the controllable peak outdoor airflow rate, demonstrate that qualifying ventilation airflow controls serve at least 60 percent of that calculated airflow, and show that the qualifying dedicated ventilation system fan controls are configured to reduce fan energy consumption during periods of reduced outdoor-airflow demand.

System Design Requirements

The DOAS ventilation control system shall comply with the following requirements:

1. Dedicated Ventilation System Requirement

- a. The project shall include at least one DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation system with an individual design outdoor airflow rate greater than 3,000 CFM.
- b. Multiple dedicated ventilation systems may be included in the HPM-claimed scope; however, each qualifying system must individually exceed 3,000 CFM design outdoor airflow.
- c. HRV, ERV, or similar systems may qualify only where the system functions as the dedicated outdoor-air ventilation system serving the applicable conditioned spaces.

2. Controllable Peak Outdoor Airflow Determination

- a. The project shall calculate the controllable peak outdoor airflow rate by summing the design outdoor airflow associated with spaces that meet either of the following conditions under applicable Title 24 ventilation requirements:
 - i. Spaces where ventilation airflow is permitted to be reduced through DCV; or
 - ii. Spaces where ventilation airflow is permitted to be reduced to zero during unoccupied periods through occupancy-based ventilation controls.
- b. The controllable peak outdoor airflow calculation shall be documented and provided as part of the inducement submittal.
- c. For this measure, controllable peak outdoor airflow is not necessarily equal to total DOAS design outdoor airflow. Only design outdoor airflow associated with spaces where ventilation airflow is permitted to be reduced through DCV, occupancy-based ventilation controls, or both may be counted toward the controllable peak outdoor airflow rate.

3. Ventilation Airflow Controls

- a. The dedicated ventilation system shall be equipped with ventilation airflow control devices and associated control sequences capable of actively monitoring and adjusting outdoor airflow in response to occupancy conditions.
- b. Ventilation airflow reduction may be accomplished through:

- i. DCV carbon dioxide sensors;
 - ii. Occupancy-based ventilation controls utilizing occupancy sensors; or
 - iii. A combination of both control strategies.
 - c. Qualifying ventilation airflow controls shall serve spaces representing at least 60 percent of the controllable peak outdoor airflow rate determined in Section 2.
 - d. Ventilation airflow controls shall be configured to maintain required ventilation rates and applicable indoor air quality requirements during occupied operation.
- 4. Variable-Speed Fan Control**
 - a. The dedicated ventilation system shall utilize a variable-speed supply fan capable of modulating airflow in response to ventilation demand.
 - b. Fan controls shall be configured to reduce fan energy consumption during periods of reduced outdoor-airflow requirements.
 - c. Fan modulation shall be coordinated with the ventilation airflow control sequence so that reduced zone or system ventilation demand results in reduced fan airflow, fan speed, or fan pressure setpoint, as applicable.

Supporting Documentation Requirements

For all qualifying projects, provide documentation demonstrating compliance with the applicable system design requirements, including the following:

1. Construction drawings identifying each qualifying DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation system included in the HPM-claimed scope, including the individual design outdoor airflow rate for each qualifying system.
2. Construction drawings or ventilation plans identifying the ventilation airflow zones, eligible spaces, ventilation control devices, and associated control components serving the spaces included in the inducement scope.
3. A sequence of operations describing the ventilation control strategy, including how outdoor airflow is reduced through DCV, occupancy-based ventilation controls, or a combination of both approaches.
4. Equipment submittals and manufacturer specifications for the qualifying dedicated ventilation system, variable-speed fan controls, occupancy sensors, carbon dioxide sensors where applicable, airflow control devices, and associated control system components.
5. Documentation identifying the controllable peak outdoor airflow calculation and demonstrating that qualifying ventilation controls serve at least 60 percent of the controllable peak outdoor airflow rate.
6. Controls documentation, control drawings, point lists, functional test documentation, or programming screenshots demonstrating that the required ventilation control sequences have been configured and enabled.
7. Documentation demonstrating that variable-speed fan control is coordinated with the ventilation airflow control sequence to reduce fan airflow, fan speed, or fan pressure setpoint during periods of reduced outdoor-airflow demand, as applicable.

Incremental Measure Cost

The Incremental Measure Cost (IMC) represents the estimated additional construction cost associated with implementing enhanced ventilation airflow controls for a qualifying dedicated ventilation system compared to a similar system designed to meet minimum code-required ventilation control provisions. The IMC is intended to support CEDA inducement calibration, market transformation planning, and Code Readiness evaluation activities. It is not intended to represent contractor bid pricing, project-specific estimating, project reimbursement, or full life-cycle financial analysis.

Because ventilation airflow control strategies are highly dependent on building layout, occupancy characteristics, ventilation zoning, sensor deployment, and controls integration, the IMC is presented as a normalized cost per square foot of conditioned floor area (CFA). This approach aligns with the system-level nature of the measure and provides a practical method for estimating representative incremental cost impacts across eligible commercial and high-rise multifamily common-area applications served by qualifying dedicated ventilation systems.

Base Case

The base case represents a qualifying dedicated ventilation system designed to comply with applicable 2025 Title 24 ventilation control requirements. The base case assumes standard ventilation zoning practices, code-minimum implementation of DCV, OBC, and associated controls where required by code, variable-speed fan operation where required by code, typical BAS integration, and standard testing and balancing. The base case does not include enhanced ventilation zoning or broader deployment of occupancy-responsive ventilation control strategies beyond typical code-minimum implementation.

Measure Case

The measure case represents a qualifying dedicated ventilation system incorporating enhanced ventilation airflow controls designed to reduce outdoor-air delivery during periods of reduced occupancy beyond typical code-minimum implementation practices. Incremental costs may include additional occupancy sensors, carbon dioxide sensors, airflow control devices, actuators, ventilation zoning coordination, controls programming, variable-speed fan integration, system commissioning, and engineering effort associated with documenting controllable peak outdoor airflow. The measure case does not assume a larger dedicated ventilation unit or additional primary HVAC equipment.

IMC Values and Normalization

For eligible DOAS ventilation control systems, the selected normalization metric for incremental cost is:

$\$/\text{ft}^2$ of conditioned floor area (CFA)

This measure is normalized using conditioned floor area because the incremental cost is driven by ventilation zoning, controls integration, sensor deployment, airflow control devices, programming, and commissioning for conditioned spaces served by the qualifying dedicated ventilation system. CFA provides a clearer basis for applying the IMC than total gross building area because the measure applies to outdoor-air ventilation controls serving conditioned and occupied building areas.

Representative incremental costs for enhanced ventilation airflow control systems can vary depending on building occupancy type, ventilation zoning density, controls complexity, existing BAS capabilities, and project-specific integration requirements. The selected IMC value is based on the representative incremental cost basis developed for this measure and adjusted to a CFA normalization basis for clearer application across eligible projects.

Proposed IMC Value

\$0.85/ft² CFA

Sources

IMC values are informed by a combination of publicly available industry references, code guidance, cost references, and commissioning resources. These sources are intended to support cost reasonableness for program calibration and should not be interpreted as project-specific pricing.

- [2025 Building Energy Efficiency Standards – California Energy Commission](#)
- [2025 Building Energy Efficiency Standards PDF – CEC-400-2025-010-F](#)
- [2025 Nonresidential Compliance Manual – California Energy Commission](#)
- [2025 Nonresidential Compliance Manual PDF – CEC-400-2025-008](#)
- [2025 Reference Appendices PDF – CEC-400-2025-010-AP](#)
- [Energy Code Ace – 2025 Nonresidential Compliance Documents](#)
- [ANSI/ASHRAE Standards 62.1 and 62.2 – Ventilation and Indoor Air Quality](#)
- [ASHRAE Guideline 36 – Best-in-Class HVAC Control Sequences](#)
- [ASHRAE Handbook – Official ASHRAE Handbook Page](#)
- [RSMeans Data from Gordian – Construction Cost Data](#)
- [RSMeans Online](#)
- [PNNL – A Guide to Building Commissioning](#)
- [U.S. DOE – Building Controls](#)
- [2025 CASE Report – Nonresidential HVAC Controls](#)

Code Readiness Objectives

This measure supports CEDA's Code Readiness efforts by collecting implementation, operational, and market data for dedicated ventilation systems with occupancy-responsive ventilation airflow controls. The primary objective is to improve understanding of how DOAS, DX-DOAS, HRV, ERV, and similar dedicated ventilation systems can reduce unnecessary outdoor-air delivery during periods of low, intermittent, or variable occupancy while maintaining required indoor air quality and ventilation performance.

Current Title 24 requirements establish baseline demand control ventilation and occupancy-based ventilation control requirements for certain space types and applications. However, real-world implementation does not always maximize the portion of outdoor airflow that can be controlled, verified, and coordinated with fan turndown. This measure is intended to help evaluate whether broader application of ventilation zoning, DCV, OBC, controllable peak outdoor-airflow calculations, and coordinated fan control can provide a practical pathway for future code improvements.

Data collected through participating projects may help inform future California energy code pathways related to ventilation zoning, occupancy-responsive ventilation controls, controllable outdoor-airflow reduction, dedicated ventilation system fan optimization, and advanced control sequence requirements. The measure may also help identify where future code language, compliance documentation, acceptance testing, or guidance could better support reliable implementation of high-performance ventilation controls.

The Code Readiness Program is particularly interested in improving industry understanding of the following:

- Real-world fan energy impacts from occupancy-responsive ventilation airflow control strategies.
- Outdoor-air heating and cooling load reductions associated with ventilation airflow turndown.
- Practical approaches for defining, calculating, and documenting controllable peak outdoor airflow.
- Typical percentages of controllable peak outdoor airflow achievable across eligible building types and space-use patterns.
- Performance differences between DCV, OBC, and hybrid DCV/OBC control strategies.
- Coordination between ventilation airflow reduction, variable-speed fan control, and fan pressure or airflow setpoint reset.
- Indoor air quality and ventilation effectiveness during reduced outdoor-airflow operation.
- Controls integration, programming, commissioning, and functional verification challenges.
- Operator interaction with BAS/EMS ventilation control settings, overrides, schedules, and alarms.
- Market readiness, including design familiarity, controls contractor capability, cost, and implementation barriers.

Code Readiness Site Monitoring

If selected for Code Readiness monitoring, equipment energy consumption and mechanical system performance may be monitored on-site for a period of up to 24 months. To support performance evaluation and data collection, projects shall provide reasonable access for the installation and operation of metering, sensors, and communication equipment.

Projects equipped with a Building Automation System (BAS), Energy Management System (EMS), or equivalent platform should enable integration of advanced metering devices through the existing system to facilitate data collection and remote access. For projects without a BAS or EMS, the Code Readiness team may install temporary stand-alone data loggers, sensors, and communication equipment as needed to monitor system performance for the duration of the monitoring period.

Instrumentation may be installed or supplemented, where necessary, to measure key system and equipment parameters sufficient to evaluate system performance and operational characteristics. All monitoring equipment will be temporary and installed in a manner that minimizes disruption to normal building operations.

Data Benefits:

- Controllable outdoor-airflow percentages and ventilation zoning strategies.
- System costs for controls, sensors, airflow control devices, programming, commissioning, and installation.
- Fan energy and ventilation-conditioning energy impacts associated with reduced outdoor-airflow operation.
- Control sequences, BAS/EMS capabilities, and system platform approaches used for ventilation control.
- Occupancy-responsive ventilation performance across varying building types, schedules, and space-use patterns.
- Coordination between ventilation airflow reduction, variable-speed fan operation, and fan pressure or airflow setpoint reset.
- Operational performance, indoor air quality, and ventilation effectiveness during reduced outdoor-airflow operation.
- Implementation barriers, commissioning needs, and operator interaction with ventilation control settings, schedules, and overrides.

Sample Data Points

A sample set of data points that would ideally be collected is provided below for reference. The final monitoring scope will be developed for each project based on the installed system configuration, available metering infrastructure, BAS/EMS capabilities, and the needs of the monitoring effort.

Data Points to Meter	Unit	Additional Specifications
Outdoor Airflow Rate	CFM	Measured outdoor airflow delivered by the qualifying dedicated ventilation system
Outdoor Airflow Setpoint	CFM	Active system or zone ventilation airflow target
Supply Fan Power	kW	Fan power serving the qualifying dedicated ventilation system
Supply Fan Speed or VFD Command	%	Fan speed, VFD output, or fan command used to evaluate airflow turndown
Fan Static Pressure or Pressure Setpoint	in. w.c.	Static pressure value or reset setpoint, where applicable
Supply Air Temperature	°F	Average supply air temperature delivered by the qualifying system
Outdoor Air Temperature	°F	Ambient outdoor-air temperature
Carbon Dioxide Concentration	ppm	Zone or return-air CO ₂ concentration, where applicable
Occupancy Sensor Status	-	Occupied/unoccupied status by zone, where applicable
Ventilation Control Mode or Override Status	-	Active control mode, schedule status, manual override, or BAS/EMS override status

Code Reference

The following codes, standards, and technical references establish the regulatory and technical framework for this HPM. Current California Title 24 requirements define minimum ventilation rates, ventilation control requirements, demand control ventilation provisions, occupancy-responsive ventilation control requirements, fan control requirements, and indoor air quality requirements that qualifying dedicated ventilation systems must meet.

This HPM builds on those baseline requirements by encouraging broader implementation of occupancy-responsive ventilation control strategies in eligible spaces. The measure is intended to increase the portion of outdoor airflow that can be actively reduced through DCV, occupancy-based ventilation controls, or a combination of both approaches, while maintaining required ventilation rates, indoor air quality, safety requirements, and equipment protection functions.

Relevant references include Title 24, Part 6 ventilation and control requirements, applicable ventilation-rate and occupancy-control provisions, and supporting industry guidance related to DOAS and dedicated ventilation system design, ventilation zoning, demand control ventilation, occupancy-based ventilation controls, BAS/EMS integration, fan control, and occupancy-responsive ventilation system operation.

Applicable Codes and Standards

CODE	APPLICABLE CODE REFERENCE	EFFECTIVE DATE	CODE REVIEW DATE
CA Building Energy Efficiency Standards - Title 24, Part 6	§120.1; §120.1(d)3; §120.1(d)5; Table 120.1-A; §120.2; §130.1(c)5; §130.1(c)6; §130.1(c)7; §140.4(p); §120.5	January 1, 2026	June 2026
ANSI/ASHRAE Standards and Guidelines	ANSI/ASHRAE Standard 62.1; ASHRAE Guideline 36	Current Edition	June 2026

Eligible Climate Zones, Building Types, and Project Scopes

Eligible Climate Zones

This high-performance measure applies statewide in **California Climate Zones 1–16**, as defined by Title 24. Applicants must identify the project climate zone in the project submittal.

Eligible Building Types

This high-performance measure applies to **public, nonresidential, and high-rise multifamily common-area** applications served by a qualifying dedicated ventilation system with occupancy-responsive ventilation airflow controls. Eligible systems may include DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation systems that meet the System Design Requirements of this measure, including the individual design outdoor airflow threshold greater than 3,000 CFM.

Eligible applications are those where ventilation zoning, DCV, OBC, or a combination of both approaches can reduce unnecessary outdoor-air ventilation, fan energy, and ventilation conditioning loads while maintaining required indoor air quality and ventilation performance.

Eligible applications may include, but are not limited to:

- Office buildings and tenant office spaces
- Educational facilities and classrooms
- Conference rooms, meeting spaces, and training rooms
- High-rise multifamily common areas and amenity spaces
- Hotel and hospitality common areas
- Retail tenant spaces and larger commercial tenant spaces
- Administrative buildings and municipal facilities
- Public assembly, community, or institutional spaces with variable occupancy patterns
- Other commercial or high-rise multifamily common-area spaces with intermittently occupied zones or variable occupancy schedules

Eligible Project Scopes

This high-performance measure applies to **new construction, additions, and major alterations** or retrofit projects that install qualifying ventilation airflow controls for a dedicated ventilation system serving eligible ventilation zones.

Eligible project scopes may include, but are not limited to:

- **New construction projects** incorporating occupancy-responsive ventilation airflow controls for qualifying dedicated ventilation systems
- **Additions or major alteration projects** involving substantial ventilation zoning, controls, or dedicated ventilation system modifications
- **Tenant improvement projects** involving substantial ventilation zoning, controls, or dedicated ventilation system modifications
- **HVAC modernization projects** incorporating enhanced ventilation control strategies for DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation systems
- **High-rise multifamily common-area HVAC upgrades** involving qualifying dedicated ventilation system control strategies
- **Commercial HVAC projects** integrating occupancy-responsive ventilation controls into qualifying dedicated ventilation systems

- **Projects** implementing ventilation zoning strategies designed to increase the portion of controllable peak outdoor airflow served by qualifying ventilation controls

Minor controls-only modifications, routine maintenance activities, sensor replacement without associated ventilation control functionality, and projects that do not materially affect ventilation airflow control, ventilation zoning, or occupancy-responsive ventilation operation are not eligible project scopes under this measure.

Measure Exclusions

The following applications are not eligible under this measure:

- Dedicated ventilation systems with an individual design outdoor airflow rate less than or equal to 3,000 CFM. Multiple smaller systems may not be aggregated to meet the 3,000 CFM threshold.
- Projects where qualifying ventilation airflow controls serve less than 60 percent of the controllable peak outdoor airflow rate included in the CEDA inducement scope.
- Spaces where ventilation airflow reduction is prohibited by applicable codes, standards, licensing requirements, health requirements, process requirements, or authority having jurisdiction (AHJ) requirements.
- Constant-volume ventilation systems that are not capable of reducing outdoor airflow in response to DCV, occupancy-based ventilation controls, or a combination of both approaches.
- Projects where ventilation controls are installed but are not configured to reduce outdoor airflow or coordinate with variable-speed fan operation.
- Minor controls-only modifications, routine maintenance activities, sensor replacement, or like-for-like controls replacement that do not materially modify ventilation airflow control, ventilation zoning, or occupancy-responsive ventilation operation.
- Projects that do not provide the required controllable peak outdoor airflow calculation or supporting documentation demonstrating compliance with the system design requirements.

Reviewer Checklist

HPM Review Checklist: LM447 – DOAS with Ventilation Airflow & Occupancy Controls – V1.2

Checklist Description: This checklist captures the elements that must be present in the project design to be eligible for the high-performance measure inducement or consideration for additional site metering.

Project Name: _____ **Review Date:** _____

Assessment: _____ **Notes:** _____

- Approved
- Not approved

Reviewer: _____ **Signature:** _____

High-Performance Measure Requirements	Comments
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- Does the project include at least one qualifying DOAS, DX-DOAS, HRV, ERV, or similar dedicated ventilation system with an individual design outdoor airflow rate greater than 3,000 CFM?
- Was the controllable peak outdoor airflow rate calculated based only on spaces where ventilation airflow is permitted to be reduced through DCV, occupancy-based ventilation controls, or both?
- Do qualifying ventilation airflow controls serve at least 60 percent of the calculated controllable peak outdoor airflow rate?
- Are qualifying ventilation airflow controls configured to reduce outdoor airflow through DCV, occupancy-based ventilation controls, or a combination of both approaches?
- Is the qualifying dedicated ventilation system capable of actively monitoring and adjusting outdoor airflow in response to occupancy conditions?
- Does the qualifying dedicated ventilation system utilize a variable-speed supply fan capable of modulating airflow in response to ventilation demand?
- Are fan controls configured to reduce fan energy consumption during periods of reduced outdoor-airflow demand?
- Is fan modulation coordinated with the ventilation airflow control sequence to reduce fan airflow, fan speed, or fan pressure setpoint, as applicable?

Supporting Documentation Requirements	Comments
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- Were construction drawings provided identifying each qualifying dedicated ventilation system and its individual design outdoor airflow rate?
- Were construction drawings or ventilation plans provided identifying ventilation airflow zones, eligible spaces, ventilation control devices, and associated control components?
- Was a sequence of operations provided describing how outdoor airflow is reduced through DCV, occupancy-based ventilation controls, or a combination of both approaches?
- Were equipment submittals and manufacturer specifications provided for the qualifying dedicated ventilation system, variable-speed fan controls, sensors, airflow control devices, and associated control system components?

- Was documentation provided showing the controllable peak outdoor airflow calculation and demonstrating compliance with the minimum 60 percent controllable-airflow requirement?
- Was controls documentation provided demonstrating that the required ventilation control sequences have been configured and enabled?
- Was documentation provided demonstrating that variable-speed fan control is coordinated with the ventilation airflow control sequence?

Code Readiness Site Metering Access	Comments
<input type="checkbox"/> Did the project identify available BAS, EMS, or equivalent monitoring access, or allow for temporary stand-alone metering if selected for Code Readiness monitoring?	

Version History Log

Version	Effective Date	End Date	Change Description
1	December 04, 2023	June 07, 2026	N/A
1.2	June 08, 2026	Active	Updated measure to current CEDA HPM format; clarified qualifying dedicated ventilation system scope, controllable peak outdoor airflow calculation, 60% control coverage requirement, fan turndown coordination, IMC normalization, Code Readiness objectives, exclusions, and reviewer checklist.

The version identified as 'Active' is the current published version and remains in effect until superseded by a subsequent published version. CEDA may update, replace, or retire High-Performance Measures without prior notice. End dates are assigned to prior versions once superseded.