



California Schools Healthy Air, Plumbing, and Efficiency Ventilation Program

Limited or No Mechanical Ventilation Pathway

HVAC Assessment Report Worksheets

October 2021

1. CO2 Monitoring
2. Limited or No Mechanical Ventilation

These worksheets are made available to help Program participants gather information for an HVAC Assessment Report as part of the California Schools Healthy Air, Plumbing, and Efficiency (CalSHAPE) Ventilation Program Assessment and Maintenance Grant. These worksheets are intended to be used for optional information gathering purposes only since completion of these worksheets does not constitute an HVAC Assessment Report. To comply with grant requirements and be eligible for funding, participants must submit an HVAC Assessment Report electronically by entering the required information through the CalSHAPE Online System as set forth in the most recent CalSHAPE Ventilation Program Guidelines.

These worksheets were designed and offered with a technician in mind that may not always have an electronic device to use when recording data. These worksheets can be printed out and then written on in the field. The information can later be typed into the required HVAC Assessment Report submitted electronically to the CalSHAPE Online System.

The CalSHAPE Ventilation Program Guidelines, these worksheets, and other program requirements such as a data reporting and processes are subject to change by the California Energy Commission, including but not limited to any changes to data reporting requirements from the California Public Utilities Commission. It is the participant's responsibility to use the most recent version of these worksheets and otherwise comply with the current requirements of the CalSHAPE Ventilation Program.



HVAC ASSESSMENT REPORT WORKSHEET 1

CO₂ MONITORING

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CALIFORNIA ENERGY COMMISSION

<input type="checkbox"/>	Verify installation or install a CO₂ monitor. <ul style="list-style-type: none"> All classrooms shall be equipped with a CO₂ monitor. CO₂ monitors shall:
<input type="checkbox"/>	Be hard-wired or plugged-in and mounted to the wall between 3 – 6 feet above the floor and at least 5 feet away from the door and operable windows.
<input type="checkbox"/>	Display the CO ₂ readings to the occupants through a display on the device or other means such as a web-based application or cell-phone application.
<input type="checkbox"/>	Notify the building operator through visual indicator on the monitor (e.g. indicator light) or other alert such as e-mail, text, or cell phone application, when the CO ₂ levels have exceeded 1,100 ppm.
<input type="checkbox"/>	Maintain a record of previous data which includes at least the maximum CO ₂ concentration measured.
<input type="checkbox"/>	Have a range of 400 ppm to 2000 ppm or greater.
<input type="checkbox"/>	Be certified by the manufacturer to be accurate within 75 ppm at 1,000 ppm CO ₂ concentration and is certified by the manufacturer to require calibration no more frequently than once every five years.
	Is a CO₂ monitor installed that meets the required features listed above? (Yes or No)
<input type="checkbox"/>	If installed but lacking required features, what features are missing?
<input type="checkbox"/>	If installed, document CO ₂ monitor nameplate data.
Manufacturer: _____ Model: _____ Serial: _____	
<input type="checkbox"/>	Include relevant photographic documentation
Fan Output Verification:	
Pre-Modification Fan Power:	Post-Modification Fan Power:

HVAC ASSESSMENT REPORT WORKSHEET 2

LIMITED OR NO EXISTING MECHANICAL VENTILATION

October 2021



Ventilation Verification and Energy Optimization Assessment

Collect and document existing HVAC infrastructure to assist the Design Professional in determining ventilation options.

<input type="checkbox"/>	Existing HVAC Infrastructure – Verify the functionality and document nameplate data on any existing HVAC equipment (i.e., heating only units, exhaust fans, etc.)
<input type="checkbox"/>	Verify and document the location of windows and doors that can be opened. <ul style="list-style-type: none"> Verify if windows have any switches or controls that initiate exhaust fans, motorized dampers or other devices that operate to provide free cooling.
<input type="checkbox"/>	Verification or installation of the CO ₂ sensor as detailed in Worksheet 9.
<input type="checkbox"/>	Collection the following information, in addition to any information requested by a design professional to evaluate options for adding mechanical ventilation. <ul style="list-style-type: none"> <input type="checkbox"/> Verify existing mechanical, architectural, structural drawings match current conditions. <input type="checkbox"/> Provide a sketch of actual roof penetrations, penetration type (i.e., vent pipe) and approximate locations if different from drawings. <input type="checkbox"/> Document locations of any vents could contaminate Outside Air (OSA) intake locations. <input type="checkbox"/> Photograph existing building, existing mechanical equipment (if applicable) and potential locations for mechanical ventilation equipment. <input type="checkbox"/> Document roof and wall type/material to the best of the technician’s ability. <input type="checkbox"/> Document if existing mechanical equipment can be altered to provide outside air (OSA) or if a Dedicated Outside Air System (DOAS) is required. <input type="checkbox"/> Obtain information on central plant capacity (if applicable) <input type="checkbox"/> Document whether outside air conditions may make reliance on windows or other sources of non-filtered outside air potentially hazardous to occupants. <input type="checkbox"/> Document recommendations for adding mechanical ventilation and filtration where none currently exists or for replacing a mechanical ventilation system where the current system is non-operational or is unable to provide recommended levels of ventilation and filtration.
<input type="checkbox"/>	Include relevant screenshots and photographic documentation. <ul style="list-style-type: none"> Include existing building and potential locations for mechanical ventilation equipment.