

PERFORMANCE METHOD – 2022 CALGREEN & ENERGY CODE COMPLIANCE CHECKLIST FOR PRE-CHECKED (PC) BUILDING DESIGNS

Division of the State Architect (DSA) documents referenced within this publication are available on the [DSA Forms](#) or [DSA Publications](#) webpage.

The form DSA 403-PC checklist is provided as a guide for submitting complete documents for plan review. Complete submittals must include all applicable items listed in the *Procedure (PR) 18-02: Pre-Check (PC) Building Designs CALGreen/Energy Code Compliance Review*. All projects submitted for review must be submitted electronically. This form must be signed by *architect/engineer in general responsible charge* and submitted to the DSA with the plan review documents. Non-conformance with these submittal requirements will result in a failed submittal and rejection of the plan review application.

See PR 18-02 for a full explanation of how to fill out this form and the PC application requirements.

PROJECT INFORMATION	DSA Application #:
Submittal contains: ☐ Unconditioned Modular Building and/or ☐ Conditioned Modular Building	
For submittals of <u>conditioned buildings</u>, provide the following: The size of each different modular building in the application. Each size building will have the same square footage, and energy features including HVAC sizing. Modular building sizes: _____	
Are these modular building designed for all climate zones in California? ☐ Yes ☐ No If "No," for which climate zone(s) is(are) the modular building(s) designed? _____	

As applicable, a PDF of each of the following shall be uploaded to the project folder.	
☐	Product manufacturer specifications (cut sheets) for mechanical, electrical, and lighting equipment and controls.
☐	Applicable Certificates of Compliance (See PART 1, SECTION A and B).
☐	Completed form DSA 403-PC Performance Checklist.
☐	All building Energy Analysis Reports. Twenty-four reports for each size modular building.
☐	Heating and cooling load calculations using ASHRAE Handbook, Fundamentals or ASHRAE based (ACCA, SMACNA etc.). Provide worst case heating and cooling calculations for each size modular building per climate zone. Confirm that the Total Adjusted System Output is the same or larger than the Total System Load.

The plans shall include the following:	Sheet # in Plans:
☐ All the required Energy Code and CALGreen requirements are incorporated into the plans.	NA

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☐	Cover Page shall specify the allowed Climate Zones.	
☐	The manufacturer shall place two (2) metal identification labels on relocatable buildings. 1. The plans shall identify the location of the 2 labels and specify how they are fastened. 2. The language for each label shall be shown on the plans for each Climate Zone.	
☐	Orientation Tables - provide Orientation Tables on the plans. (Conditioned buildings only)	
☐	Optional window and doors indicated in the plans including in structural have been included in the compliance report. Architectural plans specify all optional windows and doors in the schedule.	NA
☐	Acceptance Testing note from the 18-02 is included in the mechanical plans.	

PART 1: CALIFORNIA ENERGY CODE CERTIFICATES OF COMPLIANCE CHECKLIST

For **conditioned** modular buildings, provide compliance documentation indicated in Sections A and B.
For **unconditioned** modular buildings, provide compliance documentation indicated in Section B.

SECTION A (Conditioned Modular Buildings Only)

All forms in Section A are required for each size conditioned modular buildings.

Certificate of Compliance	Certificate Name	Sheet # in Plans:
NRCC-PRF-E	Performance	
NRCC-CXR-E	Building Commissioning	
NRCC-ELC-E	Electrical Power Distribution	

SECTION B (Conditioned and Unconditioned Modular Bldgs.) Provide the applicable Cert. of Compliance. When compliance documents are not required mark as Not Applicable (N/A).

Certificate of Compliance	Certificate Name	Sheet # in Plans:
☐ NRCC-LTI-E	Indoor Lighting (Required for unconditioned space and conditioned space if indoor lighting was not included in the PRF-E)	
☐ NRCC-LTO-E	Outdoor Lighting (Required if outdoor lighting installed)	
☐ NRCC-PLB-E	Water Heating Systems (Required for unconditioned space and conditioned space if the water heater was not included in the PRF-E)	
☐ NRCC-SAB-E	Solar and Battery (Required for each sized conditioned building if not included in the PRF-E)	
☐ NRCC-PRC-E	Process Systems Elevator Lighting & Ventilation Controls	
☐ NRCC-PRC-E	Process Systems Computer Rooms	
☐ NRCC-PRC-E	Process Systems Commercial Kitchen Ventilation/Exhaust	

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☐	NRCC-PRC-E	Process Systems Laboratory Exhaust/Factory Exhaust & Fume Hood	
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PART 2: CALIFORNIA ENERGY CODE MANDATORY MEASURES CHECKLIST

All sections must be addressed for a complete submittal.

For information on the Mandatory Measures, refer to the 2022 Energy Efficiency Standards.

The following requirements apply only to conditioned buildings.

ENVELOPE - INSULATION

Provide architectural details indicating the R-values for the raised floor, walls, and ceiling/roof. Include irregularities (e.g., openings, bump-outs, change in slope, headers, seismic joints, mod-line, etc.) in the details.

All architectural details to include insulation and indicate location, thickness, and type. If using continuous insulation, the insulation must not be interrupted by framing and provides a continuous insulating layer.

Insulation levels specified in the compliance report must be used throughout the envelope. If there are areas where the required insulation cannot be installed, then those areas must be modeled in the compliance software.

NA

Provide longitudinal and transverse sections illustrating how thermal envelope is continuous from foundation to wall to roof. Unconditioned spaces on the exterior of the thermal envelope shall be included in the illustration.

The following requirements apply only to conditioned buildings.

ENVELOPE - AIR SEALING

Demonstrate how the relocatable PC's complies with 110.7. Specifying potential sources of air leakage and the type of air sealing products that will be used.

Demonstrate how the non-relocatable PCs comply with 140.3(a)9.

HVAC REQUIREMENTS FOR VENTILATION & INDOOR AIR QUALITY

Modular buildings must meet all applicable Mandatory Measures of Energy Code 120.1

Provide the following in the mechanical plans.

Outdoor Air

For each HVAC system specify the Total Outdoor Air in CFM.

For spaces with an economizer also specify the outdoor air in CFM for spaces with Demand Control Ventilation (DCV) or Occupant Sensing Control Devices (OSVC).

For each size modular buildings an air-distribution system design shall be shown on the plans in accordance with 120.1(a)2. Design to include optional rooms.

For each type of HVAC system provide a fully dimensioned supply and return detail to match manufacturer dimensions of the equipment.

Indicate on the mechanical plans the allowed tonnage specified in the compliance documents for each size Modular Building.

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Installed filter shall have designated efficiency equal or greater than MERV 13 and shall be 2-inch minimum depth 120.1(c)1.	
Provide a note that the thermostat will be programed when the modular buildings is placed on a site to ensure the minimum air rate will be supplied to the space at all usually occupied times and programmed to provide a pre-occupancy purge one hour prior to the modular building being normally occupied 120.1(d)1.	
HVAC CONTROLS	
Specify the HVAC sequence of operation indicating compliance with 120.1(d). Include Pre-occupancy purge, and economizer mode in the sequence. For spaces with DCV or OSVC include the control strategy that resets temperature setpoints and/or ventilation air with 120.1(d).	
When an economizer is installed DCV is required in the following locations: Daycare, classrooms, lecture halls, and gymnasiums per 120.1(d)3 and 4. Exception is for spaces with an area of less than 150 square feet, or a design occupancy of less than 10 people. Mechanical plans to include: • Location of Co2 sensor in each space, • Make and model number of the Co2 sensor • Co2 sensors shall display the ppm.	
When an economizer is installed OSVC is required in the following locations: Offices, multipurpose rooms of less than 1,000 sf, music/theater/dance, break rooms, and conference rooms per 120.1(d)5 and 120.2(e)3. Mechanical plans to include: • Location of OSVC in each space, • Make and model number of the control device.	
Fault Detection and Diagnostics (FDD) – must be installed for cooling systems that are greater than 33,000 Btu/hour (2.75 Tons) and have installed an air economizer. • Plans to specify make and model number of the FDD device.	

The following requirements apply to both conditioned and unconditioned modular buildings.

LIGHTING CONTROLS

Include luminaire schedule, lighting control diagram, and sequence of operations that demonstrate compliance with the requirements for 130.1.

SOLAR AND BATTERY ENERGY CODE 110.10 & 140.10

Solar and battery requirements included on plans

EQUIPMENT MANUALS

Provide note on plans that upon site placement or site construction, the operation and maintenance documentation for all mechanical and lighting systems and controls shall be provided by the modular building manufacturer, or the general contractor for the permanent modular relocatable building and delivered to the owner.

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For information on the CALGreen Mandatory Measures refer to DSA Guideline (GL)-4: CALGreen Code.

WATER EFFICIENCY CALGREEN 5.3**Water Conserving Plumbing Fixtures and Fittings.** Check one:

5.303.3	☐	There are no plumbing fixtures provided in the project.
	☐	Plumbing fixture flow and flush rates meet the requirements of 5.5403.3 and are shown on plumbing fixture schedule.
		Sheet # in Plans:

MATERIAL CONSERVATION & RESOURCE EFFICIENCY CALGREEN 5.4**Water Resistance and Moisture Management.** For all modular buildings, provide:

Plans and finish schedule show the location of the minimum required interior door protection and indicate the non-absorbent floor and wall finishes to be installed 2 feet around and perpendicular to the primary entrances.	
Plans and sections indicate the minimum exterior door protection with the location and details for a 4 feet deep awning, roof overhang, recessed area, or other appropriate method at the primary entrances.	
Details indicate flashings integrated with a drainage plane.	

Construction Waste Management. (Both boxes apply)

5.408.1	☐	For all factory/plant construction or assembly work provide in the drawings a Construction Waste Management Plan for the factory in accordance with the requirements of CALGreen. (See 5.408.1 for Sample CWM Plan). Sheet # in Plans:
	☐	For all site-specific work, I have provided a Construction Waste Management Plan in the specifications or plans to be filled out by the General Contractor for the project in accordance with the requirements of CALGreen. (See 5.408.1 for Sample CWM Plan). Sheet # in Plans:

ENVIRONMENTAL QUALITY CALGREEN 5.5**Covering of Mechanical Equipment.** Provide for conditioned modular buildings.

5.504.3	☐	At the time of rough installation, during storage in the factory or on the construction site, during shipment (if applicable) and until final startup of the heating cooling and ventilating equipment, all duct and other related distribution component openings shall be protected to reduce the amount of dust, water and debris which may enter the system. Specification Section or Sheet # in Plan:
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Pollutant Control. Identify that finish materials meet the following, if not provided in the project, mark with "N/A."		
5.504.4.1	☐	Adhesive, sealants, and caulks comply with VOC limits in Tables 5.504.4.1 and 5.504.4.2. Sheet # in Plans:
5.504.4.3	☐	Paints and coatings comply with VOC limits in Table 5.504.4.3 and requirements of 5.504.4.3. Sheet # in Plans:
5.504.4.4	☐	Carpet systems meet testing and product requirements of Table 5.504.4.4. Carpet cushion meets Carpet and Rug Institute's Green Label Program. Carpet adhesive complies with VOC limits in Table 5.504.4.1. Sheet # in Plans:
5.504.4.5	☐	Hardwood plywood, particleboard, and medium density fiberboard composite wood products meet formaldehyde requirements and limits. Sheet # in Plans:
5.504.4.6	☐	Resilient flooring systems meet testing and product requirements. Sheet # in Plans:

Indoor Moisture Control. Provide for all modular buildings.		
5.505.1	Vented or unvented attics moisture control. Check one:	
	☐	The attic is unvented and meets the requirements of CBC 1202.3 for unvented attics. Sheet # in Plans:
	☐	The attic is vented and meets the requirements of CBC 1202.3 for vented attics. Sheet # in Plans:
	Moisture control at raised floor foundation. Check if applicable.	
	☐	Module has raised floor foundation and requires underfloor ventilation (if applicable). Meet requirements of CBC 1202.4. Sheet # in Plans:

CO2 Monitor: Required in all classrooms		
5.506.3	☐	All classrooms to have a Co2 monitor that meets CalGreen requirements of 5.506.3 Sheet # in Plans:

Exterior Noise Transmission. Check one.		
5.507.4.1	☐	Exterior wall and roof ceiling assemblies meet minimum 50 STC and windows meet minimum 40 STC. Wall Tested Detail/Sheet # _____ Roof Tested Detail/Sheet #: _____

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☐	A note on the coversheet that states: "This PC will not be placed on any campus in any of the following locations: 1. Within the 65 CNEL noise contour of an airport; 2. Within the 65 CNEL or Ldn noise contour of a freeway, expressway, railroad, or industrial source guideway; 3. Where exposed to noise level of 65dB Leq-1-hour during any hour of operation."	
Interior Sound Transmission. Provide if applicable.		
5.507.4.3	☐	Interior walls separating classrooms, and interior walls separating classrooms from bathrooms shall meet minimum 40 STC. Wall Tested Detail/Sheet #:

COMPLIANCE STATEMENT BY ARCHTTECT/ENGINEER IN GENERAL RESPONSIBLE CHARGE***SIGNATURE REQUIRED BELOW***

As the architect/engineer in general responsible charge, I affirm that I have coordinated the construction documents with the energy compliance documentation and the mechanical and lighting systems design, and that the applicable mandatory measures for nonresidential buildings of the current CALGreen Code (Title 24, Part 11) and Energy Code (Title 24, Part 6) are incorporated in the design of the building and documented in the construction documents and specifications for the project.

Print Name: _____ Signature: _____ Date: _____
 Work Phone #: _____ License #: _____