



MECHANICAL SYSTEMS

CERTIFICATE OF COMPLIANCE

Project Name:	Enforcement Agency:
Dwelling Address:	Permit Number:
City and Zip Code:	Permit Application Date:

A. GENERAL INFORMATION

01	Project Location (city)		04	Total Conditioned Floor Area		
02	Climate Zone		05	Total Unconditioned Floor Area		
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)		
•	Office	• Retail	• Warehouse	• Hotel/Motel	• School	• Support Areas
•	High-Rise Residential	• Commercial	• Healthcare Facility	• Parking Garage	• Theater	• Sports Arena
•	Auditorium	• Library	• Relocatable School Building	• Medical Clinic	• Data Center	• Convention Center
•	Classroom	• Gymnasium	• Grocery Store	• Religious Facility	• Financial Institution	• All Others
•	Restaurant/Commercial Kitchen					



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B. PROJECT SCOPE

This table includes mechanical systems or components that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.4, 170.2(b) or §141.0(b)2 and 180.2(b)2 for alterations.

My project consists of (check all that apply)					
01		02		03	
Air System(s)		Wet System Components		Dry System Components	
☐	Heating Air System	☐	Water Economizer	☐	Air Economizer
☐	Cooling Air System	☐	Pumps	☐	Electric Resistance Heat
Mechanical Controls		☐	System Piping	☐	Fan Systems
		☐	Cooling Towers	☐	Ductwork (existing to remain, altered or new)
☐	Mechanical Controls (existing to remain, altered or new)	☐	Chillers	☐	Ventilation
☐		☐	Boilers	☐	Zonal Systems/ Terminal Boxes



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C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not editable by the user. If this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliance for guidance.

01		02		03		04		05		06		07		08	09
System Summary §110.1, §110.2, §140.4, §170.2(c)	AND	Pumps §140.4(k), §170.2(c)4I	AND	Fans/ Economizers §140.4(c), §140.4€, §170.2(c)	AND	System Controls §110.2, §120.2, §140.4(f), §170.2(c)	AND	Ventilation §120.1, §160.2	AND	Terminal Box Controls §140.4(d), §170.2(c)4B	AND	Distribution §120.3, §120.4, §160.2, §160.3	AND	Cooling Towers §110.2(e)2	Compliance Results
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	
Yes/No	AND	Yes/No	AND	Yes/No	AND	Yes/No	AND	Yes/No	AND	Yes/No	AND	Yes/No	AND	Yes/No	COMPLIES or "COMPLIES WITH EXCEPTIONAL CONDITIONS" or DOES NOT COMPLY
Mandatory Measures Compliance (See Table Q for Details)															COMPLIES or DOES NOT COMPLY

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

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**E. ADDITIONAL REMARKS**

This table includes remarks made by the installer to the Authority Having Jurisdiction.

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F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

This table is used to demonstrate compliance for mechanical equipment with mandatory requirements found in §110.1 and §110.2(a) and prescriptive requirements found in §140.4 (a), §140.4(b), §170.2(c)1, §170.2(c)3, §140.4(k) or §141.0(b)2 and §180.2(b)2 for alterations.

Space Conditioning System Information

01	02	03	04	05	06
Name or Item Tag	Quantity	System Serving	System Status	Space Type	Utilizing Recovered Heat
					☐

Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces, unit heaters and DOAS systems)

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Equipment Category per Tables 110.2, §140.4(a)2 and 170.2(c)3a ⁱⁱ	Equipment Type per Tables 110.2 & Title 20	Smallest Size Available ¹ §140.4(a) & 170.2(c)3a ⁱ	Equipment Sizing per Mechanical Schedule (kBtu/h) §140.4 (a&b), §170.2(c)1 & §170.2(c)2						
				Heating Output ^{2,3}		Cooling Output ^{2,3}		Load Calculations ^{3,4}		
				Per Design (kBtu/h)	Rated (kBtu/h)	Supp. Heating Output (kBtu/h)	Sensible Per Design (kBtu/h)	Rated (kBtu/h)	Total Heating Load (kBtu/h)	Total Sensible Cooling Load (kBtu/h)

¹ FOOTNOTES: Equipment shall be the smallest size, within the available options of the desired equipment line, necessary to meet the design heating and cooling loads of the building per §140.4(a) and §170.2(c)1. Healthcare facilities are excepted.

² It is common practice to show rated output capacity on the equipment schedule. Sensible cooling output comes from specification sheet tables.

³ If equipment is heating only, leave cooling output and load blank. If equipment is cooling only, leave heating output and load blank.

⁴ Authority Having Jurisdiction may ask for load calculations used for compliance per §140.4(b) and §170.2(c)2.



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Dry System Equipment Efficiency (other than Package Terminal Air Conditioners (PTAC), Package Terminal Heat Pumps (PTHP), DX-DOAS and Heat Pump)

01	02	03	04	05	06	07	08	09
Name or Item Tag	Size Category (Btu/h)	Heating Mode				Cooling Mode		
		Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2/ Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2/ Title 20	Design Efficiency

Dry System Equipment Efficiency (Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP) only)

01	02	03	04	05	06	07
Name or Item Tag	Heating Mode			Cooling Mode		
	Rated Output Capacity (kBtu/h)	Minimum COP Required per Table 110.2-E	Design COP	Rated Output Capacity (kBtu/h)	Minimum EER Required per Table 110.2-E	Design EER

**Boiler Efficiency and Controls**

Boiler System Serving:									
☐	25% of annual space heating is provided by on site renewable energy, site recovered energy, or heat recovery chillers								
☐	50% or more of the design heating load is served using perimeter convective heating, and/or radiant panels								
☐	Installed In Multifamily Building								
☐	Boiler system added to an existing building								
01	02	03	04	05	06	07	08	09	09
Boiler System Serving:	Equipment Type ¹	Qty	Rated Input Capacity (Btu/h) ^{2, 3}	Rated Efficiency	Minimum Efficiency Required per §110.2	Efficiency Unit	Boiler Controls per §140.4(k) & §170.2(c)liii		High Capacity Boiler Exceptions
							Isolation Valve	Temperature Reset	
System Efficiency			Minimum System Efficiency Required per Tables 110.2/ Title 20						

FOOTNOTES:¹ Use NRCC-PLB to document compliance with domestic hot water and service water heating systems.² Maximum capacity-maximum ratings per the certified unit capacity.³ Includes oil-fired (residual).**Chiller Efficiency and Controls**

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Equipment Type	Qty	Size Category ¹ (Tons)	Chiller Efficiency "Path B" Exception per §140.4(i) & §170.2(c)g	Rated Efficiencies	Efficiencies Required per §110.2 ²	Efficiency Unit	Controls per §140.4(k) & §170.2(c)l	
								Isolation Valve	Temperature Reset

FOOTNOTES:¹ Chilled water plants shall not have more than 300 tons provided by air-cooled chillers. Exceptions may apply per §140.4(j).² Efficiency required is a minimum when "EER" or "COP" is the Efficiency Unit in column 08. It is also a minimum when "IPLV" is the unit for air-cooled, absorption, and water cooled gas engine chillers. Efficiency required is a maximum when "kW/ton" is the Efficiency Unit and when "IPLV" is the unit for water cooled electrically operated chillers.



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DX-DOAS Efficiency

01	02	03	04	05	06	07	08
Name or Item Tag	Equipment Type	Qty	Energy Recovery	Rating Condition	Rated Efficiencies	Efficiency Unit	Minimum Efficiency

Dual Fuel Heat Pump

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	System Category	Size Category (Btu/h)	Heating Mode				Cooling Mode		
			Rating Condition (°F)	Efficiency Unit	Minimum Efficiency Required per Tables 110.2/ Title 20	Design Efficiency	Efficiency Unit	Minimum Efficiency Required per Tables 110.2/ Title 20	Design Efficiency

**Heat Rejection Equipment (Cooling Towers, Condensers, Waterside Economizers) Efficiency and Controls**

01	02	03	04	05	06	07	08	09	10	11	12
Name or Item Tag	Equipment Type ¹	Qty	Rating Condition (°F)	Rated Performance	Minimum Required Performance per Table 110.2-F, §140.4(h)5 & §170.2(c)fv	Performance Unit	Fan Speed Control §140.4(h)1	Tower Flow Turndown §140.4(h)2	Fan Control in Multiple Cell Equipment §140.4(h)4	Economizer Controls §140.4(e)	Condenser Water Temp Reset Controls

FOOTNOTES:

¹ Centrifugal fan open-circuit towers are not allowed for rated capacities ≥ 900 gpm at 95°F condenser water return, 85°F condenser water supply and 75°F outdoor wet-bulb temperature. Exceptions may apply per §140.4(h)4.

Electric Resistance Heating

01	02	03	04
Name or Item Tag	Equipment Description	Output Capacity (kW)	Applicable Exception to §140.4(g) Allowing Electric Resistance Heating

G. PUMPS

This table is used to demonstrate compliance with Prescriptive hydronic system requirements found in §140.4(k) & §170.2(c)4I applicable to pumps < 5hp.

01	02	03	04	05	06	07	08
Name or Item Tag	Equipment Type	Qty	HP	Controls per §140.4(k) & §170.2(c)4I			
				Variable Flow	Hydronic Heat Pump Isolation	VSD on Pumps > 5HP	Differential Pressure Sensor

**H. FAN SYSTEMS & AIR ECONOMIZERS**

This table is used to demonstrate compliance with prescriptive requirements found in §140.4(c), §140.4(e) §140.4(m), §170.2(c)3 & §170.2(c)4A for fan systems. Fan systems serving only process loads are exempt from these requirements and do not need to be included in Table H.

System Name:		Quantity		Fan System Status:		System Zoning		Serving Dwelling Units		Fan System Airflow (cfm)		Site Elevation		Economizer	
01	02	03	04					05	06	07	08	09	11	12	
Fan Name or Item Tag	Fan Type	Qty	Qty					Airflow Through Component (%)	Water Gauge	Allowance		Design			
										Component Allowance	Fan Allowance ³	Design Electrical Input Power Method	Motor Nameplate Horsepower	Design Electrical Input Power (kw)	
							Fan System Allowance ³			Fan System Electrical Input Power					

¹ Fans serving spaces with design background noise goals below NC35.

² Low-turndown single-zone VAV fan system must be capable of and configured to reduce airflow to 50 percent of design airflow and use no more than 30 percent of the design wattage at that airflow. No more than 10 percent of the design load served by the equipment shall have fixed loads.

³ Fan system allowance includes fan system base allowance.

⁴ Filter pressure loss can only be counted once per fan system.

⁵ Complex Fan System means a fan system that combines a single cabinet fan system with other supply fans, exhaust fans, or both.



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Dwelling Unit Fan Efficacy & Energy/Heat Recovery 170.2(C)3b

01	02	03	04	05	06	07	08	09	10	11	12
Fan System Name or Item Tag	System Zoning	System Type Serving	System Airflow (cfm)	Design Power (kW)	Design Watts/CFM §170.2(c)3biii	Maximum Watts/CFM §170.2(c)3biii	ERV/HRV Required? 170.2(c)3bi v	ERV/HRV	Design Sensible Recovery/Effectiveness	Required Sensible Recovery/Effectiveness §170.2(c)3biv	Recovery Bypass/Directly Economize Controls §170.2(c)3biv

Exhaust Air Heat Recovery 140.4(Q), 170.2(C)4o

01	02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Hours of Operation Per Year	Qty	Design Supply Airflow Rate	Outdoor Airflow	% Outdoor Air at Full Design Airflow	Exemptions to Exhaust Air Heat Recovery Requirement per §140.4(q) & §170.2(c)4o	Exhaust Air Heat Recovery §140.4(q) & §170.2(c)4o	Type Of Heat Recovery Rating	Required Recovery Ratio	Energy Recovery Bypass

**Dedicated Outdoor Air System (DOAS)**

01	02	03	04	05	06
Name or Item Tag	Quantity	Delivered Directly To The Space	DOAS Fan Control	Multi-Zone DOAS with Cooling §140.4(p)4 & §170.2(c)4N	Multifamily DOAS

Fan Energy Index (FEI)

01	2	3
Name or Item Tag	FEI Exception	FEI

I. SYSTEM CONTROLS

This table is used to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

01	02	03	04	05	06	07	08	09	10
System Name	System Zoning	Conditioned Floor Area Being Served (ft ²)	Thermostats §110.2(b), (c) ¹ , §120.2(a), §160.3(a)2a or §141.0(b)2E & §180.2(b)2	Shut-Off Controls §120.2€ & §160.3(a)2d	Isolation Zone Controls §120.2(g) & §160.3(a)2f	Demand Response §110.12, §120.2(b) & §160.3(a)2b	Supply Air Temp. Reset §140.4(f) & §170.2(c)4d	Window Interlocks per §140.4(n) & §170.2(c)4d	Direct Digital Control (DDC) per 110.12

¹ FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.

**J. VENTILATION AND INDOOR AIR QUALITY**

This table is used to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☐	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.		
02	☐	Check this box if the project includes Nonresidential, Hotel/Motel spaces or Multifamily Common Use Spaces	Check this box if the project includes new or altered -multifamily dwelling units	☐
03	☐	Check the box if the project is using natural ventilation in any nonresidential or hotel/motel spaces to meet required ventilation rates per §120.1(c)2.		

Nonresidential Hotel/ Motel and Multifamily Common Use Ventilation Systems

04		05			06			07
System Name:		System Design OA CFM Air Flow ¹			System Design Transfer Air CFM			Air Filtration per §120.1(c), §141.0(b)2, 160.2(c)1 and ²
08	09	10	11	12	13	14	15	16
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)3 ³ & §160.2(c)3					Exh. Vent. per §120.1(c)4 & §160.2(c)4		DCV or Occupant Sensor Controls per §120.1(d)3, §120.1(d)5 & §120.2(e)3 ⁶ , §160.2(c)5d, §160.2(c)5e & §160.2(c)diii
	Occupancy Type ⁴	Conditioned Floor Area (ft ²)	# of showerheads/toilets	# of people ⁵	Required Min OA CFM	Required Minimum CFM	Provided per Design CFM	
								DCV
								Occ Sensor
17	Total System Required Min OA CFM					18	Ventilation for this System Complies?	

FOOTNOTES:

¹ System CFM should include both mechanical and natural ventilation for the zone/system.

² Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

³ Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

⁴ See Standards Tables 120.1-A and 120.1-B.

⁵ For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.



⁶ §120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

Multifamily Dwelling Unit Ventilation Systems

☐	Check the box if the system is using continuous ventilation to meet the ventilation requirements per §120.1(c)2 & §160.2(b)2Aivb2									
19	20	21	22	23	24	25	26		27	28
Space Name or Item Tag	Mechanical Ventilation Required per §120.1(c)2 & §160.2(b)2				Ventilation per Design		Local Exhaust		Air Filtration per 120.1(c) & §160.2(b)1	Compartmentalization test ⁵
	Conditioned Floor Area (ft ²)	# bedrooms	# dwelling units	Required Min OA CFM ¹	Supply Air CFM	Exhaust CFM				
							☐	Bathroom/Kitchen IAQ		
							☐	Bathroom/Kitchen IAQ & Vent.		
							☐	Kitchen Range Hood ²		
29	Is this a balanced system? ⁴					30	Meeting Outside Air Requirements?			

FOOTNOTES:

¹ Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

² Kitchen range hood will be verified per NA7.18.1 to confirm model is rated by HVI or AHAM.

³ Air filtration requirements apply to the following three system types per §120.1(b)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

⁴ A balanced ventilation system provides ventilation airflow to each dwelling-unit at a rate equal to or greater than the required minimum rate, but not more than twenty percent greater.

⁵ Compartmentalization testing per §160.2(b)2Aivb2 is required for all new multifamily attached dwelling units; leakage shall not exceed 0.3 CFM50/ft² of envelope surface area, verified per RA3.8 or NA2.3.

**K. TERMINAL BOX CONTROLS**

This table is used to demonstrate compliance with prescriptive zone control requirements in §140.4(d) & §170.2(c)4B.

01	02	03	04	05	06	07	08	09	10	11	12
Zone/System/ VAV Box Name or Item Tag	Zonal Control Strategy per §140.4(d)	Design			Deadband Compliance				Reheated, Recooled, Mixed Air Compliance		Complies
		Peak Primary Airflow CFM	Primary Air in Deadband CFM	Reheated Recooled Mixed Airflow CFM	Outside Air CFM	30% of Peak Primary Airflow CFM	Max Deadb and Airflow CFM	50% of Peak Primar y Airflow	1 st Stage Modulates ≤95°F and Maintains DB Rate?	2 nd Stage Modulates from DB Flow to Heating Max Flow?	

L. DISTRIBUTION (DUCTWORK and PIPING)

This table is used to demonstrate compliance with mandatory pipe insulation requirements found in §120.3 and mandatory requirements found in §120.4(g) for duct sealing.

Mandatory Pipe Insulation

01	☐	Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints of which shall be sealed.							
02	03	04	05	06	07	08	09	10	11
System Type	Nominal Pipe Diameter (in)	Fluid Temperature Range (°F)	Conductivity Range (Btu-in per hr per ft² per °F)	Insulation Mean Rating Temp. (°F)	Min. Insulation Thickness Required per Table 120.3-A (in)	Min. Insulation Thickness Required per §120.3(c)2 & §160.3(c)1dii (in)	Insulation Thickness per Design (in)	Exception to §120.3 & §160.3(c) (if applicable)	Serving Res or NR Space?



Duct Leakage Testing

The answers to the questions below apply to the following duct system(s):		NR/Common Use: Duct leakage testing shall not exceed X% per NA7.5.3 required for these systems?	
		Dwelling Units: Total duct leakage of duct system shall not exceed 12% or duct leakage system to outside shall not exceed 6% per RA3.1.4 required for these systems?	
		Duct leakage testing per CMC Section 603.10.1 required for these systems?	
11		The scope of the project includes only duct systems serving healthcare facilities.	
12		Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.	
13		The space conditioning system serves less than 5,000 ft ² of conditioned floor area.	
14		The combined surface area of ducts located outdoors or in unconditioned spaces is more than 25% of the total surface area of the entire duct system:	
15		The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.	
16		The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.	
17		All Ductwork and plenums with pressure class ratings shall be constructed to Seal Class A	
18		All ductwork is an extension of an existing duct system	
19		Ductwork serving individual dwelling unit	
20		< 25 ft of new or replacement space conditioning ducts installed	

**M. COOLING TOWERS**

This table is used to demonstrate compliance with mandatory requirements in §110.2(e)2 for cooling towers with a rated capacity > 150 tons. This Table calculates the Maximum Cycles of Concentration using the Langelier Saturation Index (LSI) calculations per §110.2(e)2.

01	☐	Check the box if the project is showing calculations on the plans, or attaching the calculations instead of completing this Table.							
02	03	04	05	06	07	08	09	10	11
Name or Item Tag	Design Conditions		Rated Conditions	Maximum Skin Temp (°F)	Conductivity	M-Alkalinity	Calcium Hardness	Magnesium Hardness	Target Tower Cycles
	Design GPM	Min Flow GPM	GPM/HP						
						12	13	14	15
						Calculated pH @ Target Cycles	pH Saturation @ Target Cycles	Tower LSI Based on Calculated pH	Complies

¹ Open-circuit cooling tower is defined as an open, or direct contact, cooling tower which exposes water directly to the cooling atmosphere, thereby transferring the source heat load from the water directly to the air by a combination of heat and mass transfer.

² Closed-circuit cooling tower is defined as a cooling tower that utilizes indirect contact between a heated fluid, typically water or glycol, and the cooling atmosphere to transfer the source heat load through sensible heat, latent heat, and mass transfer indirectly to the air, essentially combining a heat exchanger and cooling tower into an integrated and relatively compact device.

**N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4>.

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
☒	☐	NRCI-MCH-01-E - Must be submitted for all buildings.	☐	☐
☒	☐	NRCI-MCH-20-F Duct Leakage Diagnostic Test	☐	☐
☒	☐	NRCI-MCH-22-F Fan Efficacy	☐	☐
☒	☐	NRCI-MCH-23-F Airflow Rate	☐	☐
☒	☐	NRCI-MCH-25-F Refrigerant Charge Verification	☐	☐

**O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:

<http://www.energy.ca.gov/title24/attcp/providers.html> and the drafts can be found online at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4>.

YES	NO	Form/Title	Systems To Be Field Verified	Field Inspector	
				Pass	Fail
☒	☐	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. <i>Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.</i>		☐	☐
☒	☐	NRCA-MCH-03-A Constant Volume Single Zone HVAC NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".		☐	☐
☒	☐	NRCA-MCH-04-A Air Distribution Duct Leakage		☐	☐
☒	☐	NRCA-MCH-05-A Air Economizer Controls		☐	☐
☒	☐	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO ₂) concentration setpoints.		☐	☐
☒	☐	NRCA-MCH-07-A Supply Fan Variable Flow Controls		☐	☐
☒	☐	NRCA-MCH-08-A Valve Leakage Test		☐	☐
☒	☐	NRCA-MCH-09-A Supply Water Temperature Reset Controls		☐	☐
☒	☐	NRCA-MCH-10-A Hydronic System Variable Flow Controls		☐	☐
☒	☐	NRCA-MCH-11-A Automatic Demand Shed Controls		☐	☐
☒	☐	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units		☐	☐
☒	☐	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance		☐	☐



MECHANICAL SYSTEMS

YES	NO	Form/Title	Systems To Be Field Verified	Field Inspector	
				Pass	Fail
☒	☐	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance <i>NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage DX AC Systems are included in the scope, permit applicant should move this form to "Yes".</i>		☐	☐
☒	☐	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance <i>NOTE: This form does not automatically move to "Yes". If Chilled Water Storage, Ice-on-Coil Internal Melt, Ice-on-Coil External Melt, Ice Harvester, Brine, Ice-Slurry, Eutectic Salt, Clathrate Hydrate Slurry (CHS), Cryogenic or Encapsulated (Ice Ball) Systems are included in the scope, permit applicant should move this form to "Yes".</i>		☐	☐
☒	☐	NRCA-MCH-16-A Supply Air Temperature Reset Controls		☐	☐
☒	☐	NRCA-MCH-17-A Condenser Water Temperature Reset Controls		☐	☐
☒	☐	NRCA-MCH-18 Energy Management Control Systems		☐	☐
☒	☐	NRCA-MCH-19 Occupancy Sensor Controls		☐	☐
☒	☐	NRCA-MCH-20 Multi-Family Ventilation		☐	☐
☒	☐	NRCA-MCH-21 Multi-Family Envelope Leakage		☐	☐
☒	☐	NRCA-MCH-22-A MF Duct Leakage		☐	☐
☒	☐	NRCA-MCH-23-A MF HRV/ERV Verification		☐	☐

**P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION**

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-4>.

YES	NO	Form/Title	Systems To Be Field Verified	Field Inspector	
				Pass	Fail
☒	☐	NRCV-MCH-04-H Duct Leakage Test <i>NOTE: Must be completed by a HERS Rater</i>		☐	☐
☒	☐	NRCV-MCH-24 Enclosure Air Leakage Worksheet <i>NOTE: Must be completed by a HERS Rater</i>		☐	☐
☒	☐	NRCV-MCH-27 High-rise Residential <i>NOTE: Must be completed by a HERS Rater</i>		☐	☐
☒	☐	NRCV-MCH-32 Local Mechanical Exhaust <i>NOTE: Must be completed by a HERS Rater</i>		☐	☐

**Q. MANDATORY MEASURES DOCUMENTATION LOCATION**

This table is used to indicate where mandatory measures are documented in the plan set or construction documentation.

01		02
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:		Plan sheet or construction document location
03		04
Mandatory Measure		Plan sheet or construction document location
Heating Equipment Efficiency per §110.1		
Cooling Equipment Efficiency per §110.1		
Furnace Standby Loss Control per §110.2(d)		
Duct Insulation per §120.4		
Heating Hot Water Equipment Efficiency per §110.1		
Cooling Chilled and Condenser Water Equipment Efficiency per §110.1		
Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1		
Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3		
Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4		
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5		
Pipe Insulation per §120.3(b)		
Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9		
Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b)		
The air duct and plenum system is designed per §120.4(a)-(f)		
Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2		

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

2. I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
 5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
 6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

Responsible Designer Name:	Responsible Designer Signature:
Company :	Date Signed:
Address:	License:
City/State/Zip:	Phone:

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS	NRCC-MCH-01-E
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A. General Information

1. Enter the City the project is located in.
2. Climate Zone: Select from dropdown.
3. Select the applicable Occupancy Types within the project.
4. Enter the total conditioned floor area of the project.
5. Enter the total unconditioned floor area of the project.
6. Enter the total number of habitable above grade stories of the project.

B. Project Scope

1. Select whether the project includes heating and/or cooling air systems and/or mechanical controls.
2. Select the wet system components included in your project.
3. Select the dry system components included in your project.

C. Compliance Results

1. Results in this table are automatically calculated from data input and calculations in Tables F through H.

D. Exceptional Conditions

1. This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. Additional Remarks

1. Enter any notes or comments for the AHJ.

F. HVAC System Summary (Dry and Wet Systems)

Space Conditioning System Information

1. Enter the Name or Item Tag.
2. Enter the quantity of the system.
3. Select the zoning of the system.
4. Select the status of the system.
5. Select the space type that the system is serving.
6. Is the system utilizing recovered heat?

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Dry System Equipment Sizing (includes air conditioners, condensers, heat pumps, VRF, furnaces, unit heaters and DOAS systems)

1. This field is filled out automatically.
2. Select the equipment category of the system.
3. Select the equipment type of the system.
4. Is the equipment the smallest size available?
5. Enter the heating output per design of the system.
6. Enter the heating output rated capacity of the system.
7. Enter the supplemental heating output of the system
8. Enter the cooling sensible output per design of the system.
9. Enter the cooling output rated capacity of the system.
10. Enter the total heating load.
11. Enter the total sensible cooling load.

Dry System Equipment Efficiency (other than package terminal air conditioners (PTAC) and package terminal heat pumps (PTHP), DX-DOAS and Heat Pump)

1. This field is field out automatically.
2. Select the size category of the system.
3. Select the rating condition of the system.
4. Select the heating efficiency unit of the system.
5. This field is filled out automatically.
6. Enter the cooling design efficiency of the system.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Enter the cooling design efficiency of the system.

Dry System Equipment Efficiency (Package Terminal Air Conditioners (PTAC) and Package Terminal Heat Pumps (PTHP) only)

1. This field is field out automatically.
2. This field is filled out automatically.
3. This field is filled out automatically.
4. Enter the heating mode design COP of the system.
5. This field is filled out automatically.

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6. This field is filled out automatically.
7. Enter the cooling mode design EER.

Boiler Efficiency and Controls

- Enter the systems/spaces the boiler system is serving.
 - Is 25% of the annual space heating provided by on site renewable energy, site recovered energy or heat recovery chillers?
 - Is 50% or more fo the design heating load served using permitter convective heating and/or radiant panels?
 - Is the system installed in a multifamily building?
 - Is the boiler system added to an existing building?
1. What systems/spaces is the boiler system serving?
 2. Select the equipment type.
 3. Enter the quantity of identical boilers.
 4. Select the rated input capacity.
 5. Enter the rated efficiency.
 6. This field is filled out automatically.
 7. This field is filled out automatically.
 8. Select the isolation valve control exception or indicate that it has been included in the design.
 9. Select the temperature reset control exception or indicate that is has been included in the design.

Chiller Efficiency and Controls

1. Enter the name or item tag of the chiller.
2. Select the equipment type.
3. Enter the quantity of identical chillers.
4. Select the size category in tons.
5. Select the chiller efficiency Path B exception.
6. Enter the rated efficiencies.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Select the isolation valve control exception or indicate that it has been included in the design.
10. Select the temperature reset control exception or indicate that is has been included in the design.

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DX-DOAS Efficiency

1. This field is filled out automatically.
2. Select the equipment type.
3. Enter the quantity of identical DX-DOAS systems.
4. Does the system have energy recovery?
5. Select the rating condition of the system.
6. Enter the rated efficiencies.
7. This field is filled out automatically.
8. This field is filled out automatically.

Dual Fuel Heat Pump

1. This field is filled out automatically.
2. Select the system category.
3. Select the size category.
4. Select the rating condition.
5. This field is filled out automatically.
6. This field is filled out automatically.
7. Enter the design heating efficiency.
8. This field is filled out automatically.
9. This field is filled out automatically.
10. Enter the design cooling efficiency.

Heat Rejection Equipment (cooling towers, condensers, waterside economizers) Efficiency and Controls.

1. Enter the name or item tag of the equipment.
2. Enter the equipment type.
3. Enter the quantity of identical boilers.
4. Select the rated input capacity.
5. Enter the rated efficiency.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Select the isolation valve control exception or indicate that it has been included in the design.

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9. Select the temperature reset control exception or indicate that it has been included in the design.
10. Select the high-capacity boiler exceptions.

Electric Resistance Heating

1. Enter the name or item tag of the electric resistance heating system.
2. Select the equipment description.
3. Enter the output capacity.
4. Select the equipment exception.

G. Pumps

1. Enter the name or item tag of the pump.
2. Select the equipment type.
3. Enter the quantity of identical pumps.
4. Enter the horsepower.
5. Select the exception of the variable flow control or indicate it has been included in the design.
6. Select the exception of the heat pump isolation controls or indicate it has been included in the design.
7. Select the exception for variable speed drive or indicate it has been included in the design.
8. This field is filled out automatically.

H. Fan Systems & Air Economizers

- Enter the system name.
- Enter the quantity of identical systems.
- Select the fan system status.
- Select the system zoning.
- Select what types of spaces the system is serving.
- Enter the fan system airflow.
- Enter the site elevation.
- Select the type of economizer or applicable exception.
 1. Enter the fan name or item tag.
 2. Select the fan type dropdown.

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3. Enter the quantity of identical systems.
4. Select the components included in the system.
5. Enter the airflow through the selected component.
6. Enter the inches of water gauge in w.g.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Select the design electrical input power method.
10. Select the motor nameplate horsepower.
11. This field is filled out automatically.

Dwelling Unit Fan Efficacy & Energy/Heat Recovery

1. This field is filled out automatically.
2. This field is filled out automatically.
3. This field is filled out automatically.
4. Select the system type.
5. Enter the system airflow in CFM.
6. Enter the design power in kW.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. Select the ERV/HRV exception or indicate it has been included in the design.
10. Enter the design sensible recovery/effectiveness.
11. This field is filled out automatically.
12. This field is filled out automatically.

Exhaust Air Heat Recovery

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Select the hours of operation.
4. Enter the design supply airflow rate in CFM.
5. Enter the outdoor airflow in CFM.

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6. This field is filled out automatically.
7. Select the exemption to exhaust air heat recovery requirements or indicate it has been included in the design.
8. This field is filled out automatically.
9. Select the type of heat recovery rating.
10. This field is filled out automatically.
11. Select the type of energy recovery bypass control.

Dedicated Outdoor Air System (DOAS)

1. Enter the name or item tag of the DOAS system.
2. Enter the quantity of identical DOAS systems.
3. Is the outdoor air delivered directly to the space?
4. Select the DOAS fan control.
5. Select the multizone DOAS cooling heat recovery controls.
6. Is the DOAS serving multifamily common use space?

Fan Energy Index

1. This field is filled out automatically.
2. Select the FEI exception that applies.
3. Enter the Fan Energy Index.

I. System Controls

1. Enter the system name.
2. Select the system zoning.
3. Select the conditioned floor area being served.
4. Select the type of thermostats.
5. Select the type of shut-off controls.
6. Select the type of isolation zone controls.
7. Select the type of demand response controls.
8. Select the type of supply air temperature reset controls.
9. Select the window interlock exceptions or indicate they have been included in the design.
10. Select the direct digital control exceptions or indicate they have been included in the design.

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J. Ventilation And Indoor Air Quality

1. Are the ventilation calculations included in the plans as part of a separate document?
2. Does the project include NR, Hotel/Motel or multifamily common use space? Does the project include new or altered multifamily dwelling units?
3. Is the project using natural ventilation to meet required ventilation rates?
4. Enter the system name.
5. Enter the system design outside airflow in CFM.
6. Enter the system design transfer air in CFM.
7. Select the air filtration device.
8. Enter the space name or item tag.
9. Select the occupancy type.
10. Enter the conditioned floor area in square feet.
11. Enter the number of showerheads or toilets.
12. Enter the number of designed occupants for the space.
13. This field is filled out automatically.
14. This field is filled out automatically.
15. Enter the provided exhaust ventilation airflow in CFM.
16. Select the demand control ventilation and occupant sensor controls.
17. This field is filled out automatically.
18. This field is filled out automatically.

Multifamily Dwelling Unit Ventilation Systems

- Is the system using continuous ventilation to meet the ventilation requirements?
19. Enter the space name or item tag.
 20. Enter the conditioned floor area in square feet.
 21. Enter the number of bedrooms.
 22. This field is filled out automatically.
 23. This field is filled out automatically.
 24. Enter the supply airflow in CFM.
 25. Enter the exhaust airflow in CFM.

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26. Select the types of local exhaust.
27. Has air filtration been included?
28. Has Compartmentalization test?

K. Terminal Box Controls

1. Enter the zone/system/VAV box name or item tag.
2. Select the zonal control strategy.
3. Enter the peak primary airflow in CFM.
4. Enter the primary airflow in the deadband in CFM.
5. Enter the reheated, recooled, or mixed airflow in CFM.
6. Enter the outside airflow in CFM.
7. This field is filled out automatically.
8. This field is filled out automatically.
9. This field is filled out automatically.
10. Does the 1st stage modules and maintain the DB rate?
11. Does the second stage modulate from DV flow to heating max airflow?

L. Distribution (Ductwork and Piping)

1. Is the insulation protected from damage including damage due to sunlight, moisture, equipment maintenance and wind?
2. Select the system type.
3. Select the nominal pipe diameter in inches.
4. Select the fluid temperate range in Fahrenheit.
5. Select the conductivity rage in BTU-inch per hour per square foot per degree Fahrenheit.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Enter the min insulation thickness required.
9. Enter the insulation thickness per design.
10. Select the exception for pipe insulation requirements or indicate the requirements apply.
11. Is the distribution system serving residential or nonresidential space?

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Duct Leakage Testing

12. Does the duct system serve a licensed healthcare facility?
13. Does the duct system provided conditioned air to an occupiable space for a constant volume single zone space conditioning system?
14. Does the space conditioned system serve less than 5,000 square feet of conditioned floor area?
15. Is 25% or more of the total surface area of the combined duct system located outdoors or unconditioned spaces?
16. Does the scope of the project include extending and existing duct system which is constructed, insulated or sealed with asbestos?
17. Does the scope of the project include an existing duct system that is documented to have been previously sealed as confirm through field verification and diagnostic testing in accordance with Reference Appendix NA2?
18. Are all ductwork and plenums with pressure class ratings sealed to Seal Class A?
19. Is all the ductwork an extension of an existing duct system?
20. Is the ductwork serving and individual dwelling unit?
21. Is less than 25 feet of new or replacement ducting installed?

M. Cooling Towers

1. Is the project showing cooling tower calculations on the plans or attaching calculations instead of completing the NRCC cooling tower table?
2. Enter the name or item tag of the cooling tower.
3. Enter the design gallons per minute.
4. Enter the min flow in gallons per minute.
5. Enter the rated condition gallons per minute per horsepower.
6. Enter the maximum skin temperature in Fahrenheit.
7. Enter the conductivity.
8. Enter the M-alkalinity.
9. Enter the calcium hardness.
10. Enter the magnesium hardness.
11. Enter the target tower cycles.
12. This field is filled out automatically.
13. This field is filled out automatically.
14. This field is filled out automatically.
15. This field is filled out automatically.

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N. Declaration of Required Certificates of Installation

1. Selections have been automatically made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

O. Declaration of Required Certificates of Acceptance

1. Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

P. Declaration of Required Certificates of Verification

1. Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks.

Q. Mandatory Measures

1. Are mandatory measures documented through the mandatory measures note block?
2. Enter the plan set or construction document location of the mandatory measure documentation.
3. List of mandatory measures.
4. Enter the plan sheet or construction document location of the heating equipment efficiency per §110.1.
5. Enter the plan sheet or construction document location of the cooling equipment efficiency per §110.1.
6. Enter the plan sheet or construction document location of the furnace standby loss per §110.2(d).
7. Enter the plan sheet or construction document location of the duct insulation per §120.4.
8. Enter the plan sheet or construction document location of the heating equipment efficiency per §110.1.
9. Enter the plan sheet or construction document location of the heating hot water equipment efficiency per §110.1.
10. Enter the plan sheet or construction document location of the cooling chilled and condenser water equipment efficiency per §110.1.
11. Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers conductivity of flow-based controls per §110.2(e)1.
12. Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Flow Meter with analog output per §110.2(e)3.
13. Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Overflow Alarm per §110.2(e)4.
14. Enter the plan sheet or construction document location of the Open and Closed Circuit Cooling Towers Efficient Drift Eliminators per §110.2(e)5.

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15. Enter the plan sheet or construction document location of the Pipe Insulation per §120.3(b).
16. Enter the plan sheet or construction document location of the Combustion air shutoff, combustion air fan controls and stack design and controls for boilers per §120.9.
17. Enter the plan sheet or construction document location of the Heat Pump with Supplementary Electric Resistance Heater Controls per §110.2(b).
18. Enter the plan sheet or construction document location of the he air duct and plenum system is designed per §120.4(a)-(f).
19. Enter the plan sheet or construction document location of the Kitchen range hoods shall be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.

Documentation Declaration Statements

1. The person who prepared the NRCC will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature.
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields for their name, company (if applicable), address, phone number, license number (if applicable), date and signature.