DOCKETED	
Docket Number:	24-BSTD-03
Project Title:	2025 Energy Code Compliance Software, Manuals and Forms
TN #:	264130
Document Title:	2025 Nonresidential Certificates of Installation (NRCI)
Description:	** This document supersedes document TN #263789. ** This draft Nonresidential Certificates of Installation (NRCI) will be subject for vote during an Energy Commission Business Meeting. 2025 Energy Code compliance documents to record compliance with the 2025 Energy Code.
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	6/9/2025 4:20:19 PM
Docketed Date:	6/9/2025

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of electrical power distribution system features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01			
☐	Electric Service Meter(s)	☐	Voltage Drop to feeders
☐	Separation of load downstream of meter(s)	☐	Voltage Drop to branch circuits
☐	120V Receptacle (Outlet) Control(s)		

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact requirements documented on the Certificate of Compliance.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

E. INSTALLER NOTES

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

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Service Electrical Metering

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Rating (kVA)	Required Metering Capabilities				Metering Compliance
		Instantaneous Demand (kW)	Historical Peak Demand (kW)	Tracking kWh for user-defined period	kWh per rate period	
Per C of C						
As-built Conditions						

[1] FOOTNOTES: Service is defined as "the conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premise served" in §100.1 of the Energy Standards. 'Electrical Services' applies to the building service-entrance rating or to the submetering service. For a building with submetering, this applies to the submetering service size to the common use areas.

[2] Feeder is defined as "all circuit conductors between the service equipment, the source of a separately derived system, or other power supply source and the final branch-circuit overcurrent device," in Article 100 of the California Electrical Code.

Separation of Electrical Circuits for Energy Monitoring

Submetered electrical power distribution systems that provide power to dwelling units/common living areas only in multifamily occupancies do not need to be included.

Electrical Service Designation/ Description:

01	02	03	04
Load Type[1]	Minimum Required Separation of Load	Separation Method [2]	Compliance
Per C of C			
As-built Conditions			

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Feeder and Branch Circuit Conductor Voltage Drop

01	02	03	04	05	06	07
Electrical Service Designation/ Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method	Voltage Drop Calculations	Voltage Drop to the Feeder(s) (%)	Voltage Drop After the Feeder(s) (%)	Total Voltage Drop (%)	Voltage Drop Compliance
Per C of C						
As-built Conditions						

Circuit Controls and Controlled Receptacles

01	02	03	04	05	06
Room Name or Description	Location/ Type of Controlled Receptacles [1, 2]	Shut-Off Controls	Demand Response Controls	Permanent Marking is Used	Compliance
Per C of C					
As-built Conditions					

[1] *FOOTNOTES: Office areas, lobbies, conference rooms, kitchen areas in office spaces, and copy rooms must meet controlled receptacle requirements*

[2] *Plug-in strips and other plug-in devices shall not be used to comply with the requirements of section 130.5(d)*

Electric Ready for Multifamily Occupancies

Gas/ Propane Furnaces Serving Individual Dwelling Units (Heat Pump Space Heater Ready)

Requirement
A dedicated 240 volt branch circuit shall be installed within 3 feet from the furnace and accessible to the furnace with no obstructions. The branch circuit shall be rated at 30 amps minimum. The blank cover shall be identified as “240V ready”. All electrical components shall be installed in accordance with the California Electrical Code.
The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future heat pump space heater installation. The reserved space shall be permanently marked as “For Future 240V use”.

Gas/ Propane Cooktops Serving Individual Dwelling Units

Requirement
A dedicated 240 volt branch circuit shall be installed within 3 feet from the cooktop and accessible to the cooktop with no obstructions. The branch circuit shall be rated at 50 amps minimum. The blank cover shall be identified as “240V ready”. All electrical components shall be installed in accordance with the California Electrical Code.
The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future electric cooktop installation. The reserved space shall be permanently marked as “For Future 240V use”.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Gas/ Propane Clothes Dryers Serving Individual Dwelling Units

Requirement
A dedicated 240 volt branch circuit shall be installed within 3 feet from the clothes dryer and accessible to the clothes dryer with no obstructions. The branch circuit shall be rated at 30 amps minimum. The blank cover shall be identified as "240V ready". All electrical components shall be installed in accordance with the California Electrical Code.
The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future electric clothes dryer installation. The reserved space shall be permanently marked as "For Future 240V use".

Gas/ Propane Clothes Dryers In Common Areas

Requirement
Conductors or raceway shall be installed with termination points at the main electrical panel, via subpanels panels if applicable, to a location no more than 3 feet from each gas outlet or a designated location of future electric replacement equipment. Both ends of the conductors or raceway shall be labelled "Future 240V Use." Gas flow rates shall be determined in accordance with the California Plumbing Code. Capacity shall be one of the following: - 24 amps at 208/240 volts per clothes dryer; - 2.6 kVA for each 10,000 Btu per hour of rated gas input or gas pipe capacity; or - The electrical power required to provide equivalent functionality of the gas-powered equipment as calculated by the responsible person.

Gas/Propane Water Heaters Serving Individual Dwelling Units

Requirement
A dedicated 125 volt, 20 amp electrical receptacle that is connected to the electric panel with a 120/240 volt 3 conductor branch circuit rated to 30 amps minimum, within 3 feet from the water heater and accessible to the water heater with no obstructions. In addition, all the following: - Both ends of the unused conductor shall be labeled with the word "spare" and be electrically isolated; and - A reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit in A above and labeled with the words "Future 240V Use"
The construction drawings shall designate a space at least 39 inches by 39 inches and 96 inches tall for the future location of heat pump water heater

Gas/Propane Water Heaters Serving Multiple Dwelling Units

Requirement
Physical space shall be reserved on the bus system of the main switchboard or on the bus system of a distribution board to serve the future heat pump water heater system including the heat pump and temperature maintenance tanks. In addition, the physical space reserved shall be capable of providing adequate power to the future heat pump water heater in accordance with the following: - Heat Pump. Meet one of the following: - The electrical power required to power a heat pump water heater system heat pump that meets the total building hot water demand as calculated and documented by the responsible person associated with the project. - The electrical power required that meets the requirements specified for the heat pump in Joint Appendix JA15.2.5. - Temperature Maintenance Tank. Meet one of the following: - The electrical power required to power a heat pump water heater system temperature maintenance tank that meets the total building hot water demand as calculated and documented by the responsible person associated with the project. - The electrical power required that meets the requirements specified for the temperature maintenance tank in Joint Appendix JA15.2.5.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

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

A. General Information

1. Enter the City the project is located in.
2. Enter the zip code.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable construction systems and materials documented.

C. Compliance Results

1. This table is automatically filled with uneditable comments based on data entered in Section F.

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. Installation Details

Service Electrical Metering

1. This field is filled out automatically.
2. Enter the Rating (kVA).
3. Instantaneous Demand (kW): Select from dropdown.
4. Historical Peak Demand (kW): Select from dropdown.
5. Tracking kWh for user-defined period: Select from dropdown.
6. kWh per rate period: Select from dropdown.
7. This field is filled out automatically.

Separation of Electrical Circuits for Energy Monitoring

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Separation Method: Select from Dropdown.
4. This field is filled out automatically.

Feeder and Branch Circuit Conductor Voltage Drop

1. This field is filled out automatically.
2. Combined Voltage Drop. Conductors Compliance Method: Select from Dropdown.
3. Voltage Drop Calculations: Select from Dropdown.
4. Voltage Drop to the Feeder(s) %: Select from Dropdown.
5. Voltage Drop After the Feeder(s) %: Select from Dropdown.
6. This field is filled out automatically.

7. This field is filled out automatically.

Circuit Controls and Controlled Receptacles

1. This field is filled out automatically.
2. Location/type of controlled receptacles: Select from Dropdown.
3. Shut-off Controls: Select from Dropdown.
4. Demand Response Controls: Select from Dropdown.
5. Permanent Durable Marking is Used: Select from Dropdown.
6. This field is filled out automatically.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of envelope features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01		02		03		04		05	
Roofs		Walls		Fenestration		Doors		Floors	
□	Above Deck Insulation	□	Assembly type	□	Vertical/ Glazed Doors	□	New solid doors	□	Assembly type
□	Below Deck Insulation	□	Insulation	□	Skylights	□	Vestibules	□	Insulation
□	Surface Material								

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact requirements documented on the Certificate of Compliance.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

E. INSTALLER NOTES

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

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Roof Insulation

01	02	03	04	05
Tag/Plan Detail ID	Assembly/ Framing Type	Cavity Insulation R-Value	Continuous Insulation R-Value	Assembly Compliance
Per C of C				
As-built Conditions				

Roof Surface Material

01	02	03	04		05	06
Tag/Plan Detail ID	Roof Material	Roof Slope	Material Performance Specifications		Cool Roof Rating Council Certification #	Assembly Compliance
Per C of C			Reflectance[1]			
			Emittance			
			SRI			
As-built Conditions			Reflectance			
			Emittance			
			SRI			

Walls

01	02	03	04	05	06	07
Tag/Plan Detail ID	Wall Type	Wall Material	Wall Thickness (in)	Core/Cavity Insulation R-value	Continuous Insulation R-value	Assembly Compliance
Per C of C						
As-built Conditions						

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Floors

01	02	03	04	04	05	06	07
Tag/Plan Detail ID	Floor Type	Floor/ Spline Material	Insulation Location	Insulation Orientation	Core/Cavity Insulation R-value	Continuous Insulation R-value	Assembly Compliance
Per C of C							
As-built Conditions							

Exterior Doors

01	02	03	04	05
Tag/Plan Detail ID	Door Type	Door Insulation	U-factor	Compliance
Per C of C				
As-built Conditions				

Vestibules

01	02	03	04	05	06
Tag/Plan Detail ID	Exception to §120.7(e)	Shut Off Controls	Thermostat	Self-Closing Device	Vestibule Compliance
Per C of C					
As-built Conditions					

Vertical Fenestration, Skylights, and Glazed Doors

01	02	03	04	05	06		07	08
Tag/Plan Detail ID	Fenestration Type	Calculation Method	Area (ft^2)	Frame Type	Product Performance per Design		National Fenestration Rating Council (NFRC) Certification ID #[1]	Assembly Compliance
Per C of C					U-factor			
					(R)SHGC			
					VT			
As-built Conditions					U-factor			
					SHGC			
					VT			

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

G. ACCEPTANCE TESTS & FIELD VERIFICATION

The following Acceptance Tests related to the systems or materials documented on this LMCI have been indicated on the permitted Certificate of Compliance as being required to comply with Title 24, Part 6. Envelope Acceptance Tests are not required to be completed by a certified Acceptance Test Technician and may be completed by a field technician (which may be the installer). The Certificate of Acceptance (NRCA) forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCA-ENV-02-F - Must be submitted for all new, added or altered fenestration.	
NRCA-ENV-03-F - Must be submitted for Daylighting Power Adjustment Factor (PAF) for indoor lighting.	
There are no Acceptance Tests indicated on the permitted NRCC related to the systems or materials documented on this NRCI.	

A copy of this Certificate of Installation should be distributed to the Field Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

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

A. General Information

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable Roof systems and materials documented.
2. Select all applicable Wall systems and materials documented.
3. Select all applicable Fenestration systems and materials documented.
4. Select if New Solid Door materials documented.
5. Select all applicable Floor systems and materials documented.

C. Compliance Results

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

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. Installer Notes

1. Enter any notes or comments for the AHJ.

F. Installation Details

Roof Insulation

1. This field is filled out automatically.
2. Select: True or False.
3. Enter Cavity Insulation R-Value.
4. Enter Continuous Insulation R-Value.
5. This field is calculated automatically.

Roof Surface Material

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Select: True or False.
4. Enter Reflectance, Emittance, SRI.
5. Enter Cool Roof Rating Council Certification #.
6. This field is calculated automatically.

Walls

1. This field is filled out automatically.
2. Select: True or False.
3. Select: True or False.
4. Enter Wall Thickness.
5. Enter Core/Cavity Insulation R-Value.
6. Enter Continuous Insulation R-Value.
7. This field is calculated automatically.

Floors

1. This field is filled out automatically.
2. Select: True or False.
3. Select: True or False.
4. Select: True or False.
5. Enter Core/Cavity Insulation R-Value.
6. Enter Continuous Insulation R-Value.
7. This field is calculated automatically.

Exterior Doors

1. This field is filled out automatically.
2. Door Type: Select from Dropdown.
3. Door Insulation: Select from Dropdown.
4. Enter U-factor.
5. This field is calculated automatically.

Vertical Fenestration, Skylights, and Glazed Doors

1. This field is filled out automatically.
2. Fenestration Type: Select from Dropdown.
3. Calculation Method: Select from Dropdown.
4. Enter Area.
5. Enter Frame Type.
6. Enter U-factor, SHGC, and VT.
7. Enter National Fenestration Rating Council (NFRC) Certification ID #.
8. This field is calculated automatically.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of indoor lighting features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01 Luminaires		02 Space Types		03 Controls[1]							
☐	General Lighting	☐	Conditioned	☐	Time-switch	☐	Occupancy Sensors	☐	Dimmers		
				☐	Daylighting	☐	Interlocked Systems	☐	Shut-off		
☐	Decorative/ Accent	☐	Unconditioned	☐	Area Controls	☐	Demand Response	☐	Videoconferencing Studio Controls		
				☐	Multi-level	☐	Institutional Tuning				

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Indoor Lighting Fixture Schedule for Spaces Other Than Dwelling Units/ Hotel Rooms/ Motel Rooms.

01	02	03	04	05	06	07	08	09	10	11	12	13
Name or Item Tag	Fixture Within Scope?	Luminaire Description	Used in Conditioned or Unconditioned Space?	Fixture Type	Linear FT2 of Track	VA of Current Limiter	Voltage of Branch Circuit	Sum of Ampere Rating [1]	Maximum Rated Input Wattage	Rated Wattage per Luminaire	Total Number of Luminaires	Fixture Compliance
Per C of C												
As-built Conditions												

[1] Sum of the ampere rating of all the current protection devices on the panel

[2] Maximum rated input wattage of the driver, power supply or transformer published in the manufacturers catalogs.

[3] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

Residential Dwelling Unit or Hotel/ Motel Room Luminaire Efficacy Requirements

Residential dwelling unit and hotel/motel room lighting fixtures must be installed according the following requirements.

The following light sources are not required to comply with Title 24, Part 6 Joint Appendix 8 requirements:

A.	Pulse-start metal halide light sources.
B.	High pressure sodium light sources.
C.	Luminaires with hardwired high frequency generator and induction lamp.
D.	LED light sources installed outdoors.
E.	Inseparable solid state LED (SSL) luminaires containing colored light sources that are installed to provide decorative lighting.
F.	Lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers, and ceiling fan kits that are subject to DOE's Appliance and Equipment Standards Program
G.	Navigation lighting rated less than five watts, such as night lights, step lights, and path lights
H.	Lighting with an efficacy of 45 lumens per watt or greater and located internal to drawers, cabinetry, and or linen closets with an efficacy of 45 lumens per watt or greater

All other light sources shall be marked with "JA8-2025" or "JA8-2025-E" to meet the requirements of JA8. Light sources not marked with "JA8-2025" or "JA8-2025-E" do not meet the efficacy requirements.

Indoor Lighting Controls

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

01	02	03	04	05	06	07	08	09	10
Area Description	Primary Function Area	Demand Response	Manual Controls	Multi-Level Controls	Shut-Off Controls	Primary/Skylit Daylighting	Secondary Daylighting	Interlocked Systems	Controls Compliance
Per C of C									
As-built Conditions									

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

Controls for Additional Wattage Credit (Power Adjustment Factor)

Controls in spaces listed in this table were designed to allow additional wattage as part of the strategy to comply with the Energy Code.

01	02		03	04	05	06	07
Area Description	Control(s) for Wattage Credit		Luminaires Controlled				Controls for Credit Compliance
			Luminaire Name or Item Tag	Watts per Luminaire	Number of Luminaires	Lighting Controlled (Watts)	
Per C of C							
As-built Conditions							

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

G. ACCEPTANCE TESTS & FIELD VERIFICATION

The following Acceptance Tests related to the systems or materials documented on this NRCI have been indicated on the permitted Certificate of Compliance (LMCC) as being required to comply with Title 24, Part 6.

Lighting Acceptance Tests must be completed by a certified Acceptance Testing Technician and NRCA forms completed through an approved Acceptance Test Technician Certification Provider database. The Certificate of Acceptance (NRCA) forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCA-LTI-02-A - Must be submitted for all new, added or altered shut-off lighting controls	
NRCA-LTI-03-A - Must be submitted for all new, added or altered automatic daylighting controls	
NRCA-LTI-04-A - Must be submitted for all new, added or altered demand responsive lighting controls	
NRCA-LTI-05-A - Must be submitted for Institutional Tuning Power Adjustment Factor (PAF)	
There are no Acceptance Tests indicated on the permitted NRCC related to the systems or materials documented on this NRCI.	

A copy of this Certificate of Installation should be distributed to the Field Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building. shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. Enter the City the project is located in.
2. Enter the zip code.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select applicable luminaires.
2. Select applicable space type.
3. Select applicable controls.

C. Compliance Results

1. This table is automatically filled with uneditable comments based on data entered in Section F.

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. Installer Notes

1. This table is automatically filled with uneditable comments by the installer.

F. INSTALLATION DETAILS

Indoor Lighting Fixture Schedule

1. This field is filled out automatically.
2. Fixture Within Scope: Select from dropdown.
3. Enter luminaire description.
4. This field is filled out automatically.
5. Fixture type: Select from dropdown.
6. Enter linear FT2 of track.

7. Enter VA of current limiter.
8. Enter voltage of branch circuit.
9. Enter sum of Ampere rating.
10. Enter maximum rated input.
11. Enter rated wattage per luminaire.
12. Enter total number of luminaires.
13. This field is filled out automatically.

Residential Dwelling Unit or Hotel/Motel Room Luminaire Efficacy Requirements

1. This table covers the dwelling unit efficacy requirements for multifamily & hotel/motel projects.

Indoor Lighting Controls

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Demand Response: Select from Dropdown.
4. Manual Controls: Select from Dropdown.
5. Multi Area Controls: Select from Dropdown.
6. Shut off Controls: Select from Dropdown.
7. Primary/skylit Daylighting: Select from Dropdown.
8. Secondary daylighting: Select from Dropdown.
9. Interlocked systems: Select from Dropdown.
10. This field is filled out automatically.

Controls for Additional Wattage Credit

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Luminaire Item or Item Tag: Select from Dropdown.
4. This field is filled out automatically.
5. Enter number of luminaires.
6. This field is filled out automatically.
7. This field is filled out automatically.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of outdoor lighting features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01		02	
□	Luminaires	□	Controls

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Outdoor Lighting Fixture Schedule for Nonresidential Buildings, Parking Garages and Common Service Areas in Multifamily Buildings

01	02	03	04	05	06	07	08	09
Name or Item Tag	Fixture Within Scope?	Luminaire Description	Fixture Type	Rated Wattage per Luminaire[1]	Total Number of Luminaires	Total Watts	Outdoor Luminaire ≥ 6,200 Lumens	Fixture Compliance
Per C of C								
As-built Conditions								

[1] For linear luminaires, wattage is in W/lf instead of Watts/luminaire. Total linear feet for the luminaire is indicated in column 06 instead of number of luminaires.

[2] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

OUTDOOR LIGHTING

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Shielding Requirements (BUG)

			Backlight		Uplight	Glare		
01		02	03	04	05	06	07	08
Name or Item Tag		Luminaire Description	Mounting Height from Property Line	Backlight Rating	Uplight Rating	Mounting Height from Property Line	Glare Rating	Fixture Compliance
Per C of C								
As-built Conditions								

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

Outdoor Lighting Controls for Nonresidential Buildings, Parking Garages and Common Service Areas in Multifamily Buildings

01	02	03	04	05
Area Description	Shut-Off	Auto-Schedule	Motion Sensor	Controls Compliance
Per C of C				
As-built Conditions				

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Outdoor Lighting Controlled from Inside Multifamily Dwelling Units

01	02	03	04
Space Name	Compliant Light Sources[1,2] §160.5(a)1	Mandatory Controls §160.5(a) Shut-Off	Recessed Downlights[3] §160.5(a)1C
C of C			*i. Shall not contain screw base lamp sockets; and ii. Have a label that certifies the luminaire is airtight with air leakage less than 2.0 cfm at 75 Pascals when tested in accordance with ASTM E283. An exhaust fan housing with integral light shall not be required to be certified airtight; and iii. Be sealed with a gasket or caulk between the luminaire housing and ceiling, and have all air leak paths between conditioned and unconditioned spaces sealed with a gasket or caulk, or be installed per manufacturer's instructions to maintain airtightness between the luminaire housing and ceiling; and iv. Meet the clearance and installation requirements of California Electrical Code Article 410.116 for recessed luminaires; and v. Lamps and other separable light sources in enclosed or recessed luminaires shall be in compliance with the JA8 elevated temperature requirements, including marking requirements.*
As-built Conditions			
C of C			
As-built Conditions			
C of C			
As-built Conditions			

[1] FOOTNOTE: Text has been abbreviated, please refer to Section 160.5(a)1A to confirm compliance with the specific light source technologies listed.

[2] Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.

[3] Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

G. ACCEPTANCE TESTS & FIELD VERIFICATION

The following Acceptance Tests related to the systems or materials documented on this NRCI have been indicated on the permitted Certificate of Compliance (NRCC) as being required to comply with Title 24, Part 6.

Lighting Acceptance Tests must be completed by a certified Acceptance Testing Technician and NRCA forms completed through an approved Acceptance Test Technician Certification Provider database. The Certificate of Acceptance (NRCA) forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCA-LTO-02-A: Outdoor Lighting Control- Must be submitted for all new, added or altered shut-off lighting controls	
There are no Acceptance Tests indicated on the permitted NRCC related to the systems or materials documented on this NRCI.	

A copy of this Certificate of Installation should be distributed to the Field Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building. shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. This field is filled out automatically with data from the NRCC.
2. This field is filled out automatically with data from the NRCC.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable construction systems and materials documented for luminaires.
2. Select all applicable construction systems and materials documented for controls.

C. Compliance Results

This table is automatically filled with uneditable comments based on data entered in Section F.

D. Exceptional Conditions

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

E. Additional Remarks

Enter any notes or comments for the AHJ.

F. Installation Details

Fixtures

1. This field is filled out automatically.
2. Fixture Within Scope: Select from dropdown.
3. Enter the Luminaire Description.
4. Fixture Type: Select from dropdown.
5. Enter the Rated Wattage per Luminaire.
6. Enter the Total Number of Luminaires.
7. This field is filled out automatically.
8. Outdoor Luminaire ≥ 6,200 Lumens: Select from the dropdown.

9. This field is filled out automatically.

Shielding Requirements (BUG)

1. This field is filled out automatically.
2. Shut-Off: Select from dropdown.
3. Auto-Schedule: Select from dropdown.
4. Motion Sensor: Select from dropdown.
5. This field is filled out automatically.

Outdoor Lighting Controls for Nonresidential Buildings, Parking Garages and Common Service Areas in Multifamily Buildings

1. This field is filled out automatically.
2. Shut-Off: Select from dropdown.
3. Auto-Schedule: Select from dropdown.
4. Motion Sensor: Select from dropdown.
5. This field is filled out automatically.

Outdoor Lighting Controlled from Inside Multifamily Dwelling Units

1. This field is filled out automatically.
2. Compliant Light Sources: Select from dropdown.
3. Mandatory Controls Shut-Off: Select from dropdown.
4. This field covers additional requirements for recessed downlights.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of sign lighting features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01		02					
Luminaires		Controls					
□	Sign Lighting Luminaires	□	Shut-Off	□	Dimming	□	Demand Response

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Sign Lighting Compliance.

01	02	03	04	05	06		07
Name or Sign Tag	Sign Description	Watts Per Luminaire	Total Number of Luminaires	Total Watts	Compliant Light Sources		Sign Compliance
Per C of C							
As-built Conditions							

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

Sign Lighting Controls

01	02	03	04	05	06
Name or Sign Tag	Sign Description	Mandatory Controls			
		Shut-Off	Dimming	Demand Response	Controls Compliance
Per C of C					
As-built Conditions					

[1] The compliance tool used to document the Certificate of Compliance does not provide data to the Certificate of Installation. In these scenarios, certificate of installation compliance status will need to be determined manually by the AHJ.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. This field is filled out automatically with data from the NRCC.
2. This field is filled out automatically with data from the NRCC.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable construction systems and materials documented for luminaires.
2. Select all applicable construction systems and materials documented for controls.

C. Compliance Results

1. This table is automatically filled with uneditable comments based on data entered in Section F.

D. Exceptional Conditions

1. This table is automatically 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. Installation Details

Sign Lighting Compliance

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Enter the Watts Per Luminaire.
4. Enter the Total Number of Luminaires.
5. This field is filled out automatically.
6. Compliant Light Sources: Select from dropdown.
7. This field is filled out automatically.

Sign Lighting Controls

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Mandatory Controls Shut-Off: Select from dropdown.
4. Mandatory Controls Dimming: Select from dropdown.
5. Mandatory Controls Demand Response: Select from dropdown.
6. This field is filled out automatically.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

DUCT LEAKAGE DIAGNOSTIC TEST

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-20-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

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

A. System Information

01	Space Conditioning System Identification or Name	
02	Space Conditioning System Location or Area Served	
03	Indoor Unit Name or Description of Area Served	
04	Building Type from CF1R	
05	Verified Low Leakage Ducts in Conditioned Space (VLLDCS) Credit from CF1R?	
06	Verified Low Leakage Air-Handling Unit Credit from CF1R?	
07	Duct System Compliance Category	
08	Any portions of Duct Located in Garage?	
09	Is the system type Small Duct High Velocity (SDHV)?	

B1. Duct Leakage Diagnostic Test for Completely New Duct System

01	Air-Handling Unit Airflow (AHU Airflow) Determination Method	
02	Condenser Nominal Cooling Capacity (ton)	
03	Indoor Unit Nominal Cooling Capacity	
04	Heating Capacity (kBtu/h)	
05	Conditioned Floor Area Served by this HVAC System (ft^2)	
06	Measured AHU Airflow (cfm)	
07	Duct Leakage Test Conditions	
08	Duct Leakage Test Method	
09	Leakage Factor	
10	Calculated Target Allowable Duct Leakage Rate (cfm)	
11	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
12	Compliance Statement:	

B2. Duct Leakage Diagnostic Test for Low Leakage Ducts in Conditioned Space

01	System compliance with visual inspection per RA3.1.4.1.3?	
02	Duct Leakage Test Conditions	
03	Duct Leakage Test Method	
04	Target Allowable Duct Leakage Rate (cfm)	
05	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
06	Compliance Statement:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

B3. Duct Leakage Diagnostic Test for Low Leakage Air-Handling Unit (LLAHU)

01	Air-Handling Unit Airflow (AHU Airflow) Determination Method	
02	Condenser Nominal Cooling Capacity (ton)	
03	Indoor Unit Nominal Cooling Capacity	
04	Heating Capacity (kBtu/h)	
05	Conditioned Floor Area Served by this HVAC System (ft^2)	
06	Measured AHU Airflow (cfm)	
07	Duct Leakage Test Conditions	
08	Duct Leakage Test Method	
09	Leakage Factor	
10	Calculated Target Allowable Duct Leakage Rate (cfm)	
11	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
12	Air-Handling Unit Manufacturer Name	
13	Air-Handling Unit Model Number	
14	Compliance Statement:	

B4. Duct Leakage Diagnostic Test for Complete Replacement or Altered Duct System

01	Air-Handling Unit Airflow (AHU Airflow) Determination Method	
02	Condenser Nominal Cooling Capacity (ton)	
03	Indoor Unit Nominal Cooling Capacity	
04	Heating Capacity (kBtu/h)	
05	Conditioned Floor Area Served by this HVAC System (ft^2)	
06	Measured AHU Airflow (cfm)	
07	Duct Leakage Test Conditions	
08	Duct Leakage Test Method	
09	Leakage Factor	
10	Calculated Target Allowable Duct Leakage Rate (cfm)	
11	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
12	Compliance Statement:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

B5. Duct Leakage Diagnostic Test for Replacement or Alteration Using Smoke Test

01	Air-Handling Unit Airflow (AHU Airflow) Determination Method	
02	Condenser Nominal Cooling Capacity (ton)	
03	Indoor Unit Nominal Cooling Capacity	
04	Heating Capacity (kBtu/h)	
05	Conditioned Floor Area Served by this HVAC System (ft^2)	
06	Measured AHU Airflow (cfm)	
07	Duct Leakage Test Conditions	
08	Duct Leakage Test Method	
09	Leakage Factor	
10	Calculated Target Allowable Duct Leakage Rate (cfm)	
11	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
12	Compliance Statement:	

C. Ducts Located in Garage Spaces

01	Duct Leakage Test Method	
02	Leakage Factor	
03	Air-Handling Unit Airflow (AHU Airflow) Determination Method	
04	Measured AHU Airflow (cfm)	
05	Calculated Target Allowable Duct Leakage Rate (cfm)	
06	Actual Duct Leakage Rate from Leakage Test Measurement (cfm)	
07	Compliance Statement:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

D. Additional Requirements for Compliance

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

01	System was tested in its normal operation condition. No temporary taping allowed.
02	Outside air (OA) duct connections to the central forced air duct system shall not be sealed/taped off during duct leakage testing. OA ducts used for Central Fan Integrated (CFI) Indoor Air Quality ventilation systems, or Central Fan Ventilation Cooling Systems, that utilize dampers that open only when OA is required and automatically close when OA is not required, may configure the OA damper to the closed position during duct leakage testing.
03	All supply and return register boots were sealed to the drywall.
04	Building cavities were not used as plenums, or platform returns, in lieu of ducts.
05	If cloth backed tape was used it was covered with Mastic and draw bands.
06	All connection points between the air handler and the supply and return plenums are completely sealed.
07	For completely new systems visual inspection at final construction stage: For all supply and return registers, verify that the spaces between the register boot and the interior finishing wall are properly sealed.
08	For completely new systems visual inspection at final construction stage: If the house rough-in duct leakage test was conducted without an air handler installed, inspect the connection points between the air handler and the supply and return plenums to verify that the connection points are properly sealed.
09	For completely new systems visual inspection at final construction stage: Inspect all joints to ensure that no cloth backed rubber adhesive duct tape is used.
10	For Duct Systems with Low Leakage Air-Handling Unit (LLAHU): The Low Leakage Air-handling Unit Model identified on this compliance document is included in the list of certified Low Leakage Air-Handling Units published on the Energy Commission Website at: https://www.energy.ca.gov/rules-and-regulations/building-energy-efficiency/manufacturer-certification-building-equipment/low
11	For Replacement or Alteration Duct Systems: If the system complies using the Smoke Test method, the smoke test was conducted in accordance with the requirements of Reference Residential Appendix RA3.1.4.3.6. Systems that comply using the smoke test shall not be included in sample groups for ECC verification compliance.

DUCT LEAKAGE DIAGNOSTIC TEST

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-20-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

NRCI-MCH-20-F User Instructions

A. System Information

1. HVAC System Identification or Name: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.
2. HVAC System Location or Area Served: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.
3. Indoor Unit Name: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.
4. Building Type: This field is filled out automatically. It is referenced from the Certificate of Compliance (NRCC), which must be completed prior to this document.
5. Verified Low Leakage Ducts in Conditioned Space (VLLDCS): This field is filled out automatically. It is referenced from the Certificate of Compliance (NRCC), which must be completed prior to this document.
6. Verified Low Leakage Air-Handling Unit (VLLAHU) Credit This field is filled out automatically. It is referenced from the Certificate of Compliance (NRCC), which must be completed prior to this document.
7. Duct System Compliance Category: Choose from New, Replacement, Alteration, Replacement Using Smoke Test, Alteration Using Smoke Test.
    a. New: Use this choice for newly constructed buildings, additions with all-new systems dedicated to the addition, or new systems installed in existing homes where the equipment is newly installed and the ducts are at least 75% or more newly installed duct material (up to 25% of the finished system may consist of reused parts from the dwelling unit's previously existing duct system, such as registers, grilles, boots, air handler, coil, plenums, duct material).
    b. Replacement: For existing buildings where the equipment is not newly installed but the ducts are at least 75% or more newly installed duct material (up to 25% of the finished system may consist of reused parts from the dwelling unit's previously existing duct system, such as registers, grilles, boots, air handler, coil, plenums, duct material). Sometimes referred to as a "re-ducted" system.
    c. Alteration: For existing buildings where any of the following are newly installed or replaced as part of the project and the system does not meet one of the other compliance categories:
        1. 25 feet of space-conditioning system ducts are installed in unconditioned space or indirectly conditioned space.
        2. Air conditioning or heat pump condenser
        3. Heating or cooling coil
        4. Air handler (e.g., furnace, fan coil, package unit)
    d. Replacement using Smoke Test: Similar to "Replacement" but the target leakage could not be met due to the equipment not being new. Smoke is used to show that leaks are only coming from the previously existing equipment. All accessible leaks visible by smoke must be sealed.
    e. Alteration using Smoke Test: Similar to "Alteration" but the target leakage could not be met due to the equipment not being new or due to inaccessible leaks. Smoke is used to show that leaks are only coming from the previously existing equipment or are inaccessible. All accessible leaks visible by smoke must be sealed.
8. Any portions of Duct Located in Garage: User select from Yes or No.

B1. Duct Leakage Diagnostic Test for Completely New Duct System

1. Air-Handling Unit Airflow (AHU Airflow) Determination Method: User will select from the following options:
   a. Default Airflow Method: The Default Airflow Method may only be used for homes where the duct system is being tested before the conditioning and heating system is installed and the equipment specification is not known (See Section RA3.1.4.2.1 of the 2025 Reference Appendices).
   b. Cooling System Method: For systems with air conditioning, this selection must be made, and the nominal air handler airflow shall be 400 CFM per nominal ton of condensing unit cooling capacity as specified by the manufacturer
   c. Heating System Method: For heating only systems the nominal air-handler airflow shall be 21.7 CFM per kBtu/h of rated heating output capacity.
   d. Measured Airflow Method: The measured system airflow can be used as the air-handler airflow for the purpose of establishing duct leakage percentage (See Section RA3.1.4.2.3 of the 2025 Reference Appendices).
   e. Indoor Unit Method
2. Condenser Nominal Cooling Capacity (ton): Same data given on MCH-01.
3. Indoor Unit Nominal Cooling Capacity: Same data given on MCH-01.
4. Heating Capacity (kBtu/h): Same data given on MCH-01;
5. Conditioned Floor Area Served by this HVAC System (ft^2): User must input CFA for the space. Should be consistent with the NRCC input value.
6. Measured AHU Airflow (CFM): If “Measured Airflow Method” is selected, user must input measured airflow.
7. Duct Leakage Test Conditions: Select from the following options:
   a. Test Rough-in AHU: Installers may determine duct leakage in new construction by using diagnostic measurements at rough-in building construction stage prior to installation of interior finishing (See Section RA3.1.4.3.2 of the 2025 Reference Appendices). In this case the air-handling unit (AHU) is installed at the time of test.
   b. Test Rough-in No AHU: Same as “Test Rough-in” except air handling unit is not yet installed (See Section RA3.1.4.3.2 of the 2025 Reference Appendices).
   c. Test Final: Test conducted at “final”, i.e. all equipment, ducts, and registers are installed and the system is essentially in its final operating condition. (rough-in no longer an option. See Section RA3.1.4.3.1 of the 2025 Reference Appendices).
8. Duct Leakage Test Method: Select from the following options: Leakage to the Outside (house is pressurized simultaneously with the ducts such that only leakage going outside of the pressurized conditioned shell is measured, see RA3.1.4.3.4), or Total Leakage.
9. Leakage Factor: This field is automatically filled out based on choices in previous fields.
10. Calculated Target Allowable Duct Leakage Rate (cfm): This value will be automatically calculated based on values entered in previous fields.
11. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): Input the duct leakage rater taken from actual test measurements.

12. Compliance Statement: If Actual Duct Leakage Rate from leakage test (B10) is less than or equal to Calculated Target Allowable Duct Leakage Rate, "System passes leakage test" will automatically populate. If not, "System fails leakage test" will automatically populate.

B2. Duct Leakage Diagnostic Test - Low Leakage Ducts in Conditioned Space

1. System compliance with visual inspection per RA3.1.4.1.3: This field will be automatically filled. A visual inspection confirms the space conditioning system is located entirely in conditioned space in accordance with RA3.1.4.1.3. If any part of the duct system is outside of conditioned space, the system does not pass.
2. Duct Leakage Test Conditions: This field will be automatically filled. The entire duct system shall be included in the total leakage test. The air handler, supply and return plenums and all the connectors, transition pieces, duct boots and registers must be installed and tested to total system leakage. All supply registers shall be taped so that the tape goes over the grills and attaches to the surrounding drywall. All return grilles except for one large centrally located return grille or the air handler cabinet access panel shall be taped up.
3. Duct Leakage Test Method: This field will be automatically filled. Leakage to outside shall be verified by pressurizing the dwelling and the ducts to 25 Pa (0.1 inches of water) with respect to outside. A full description of these procedures can be found in RA3.1.4.3.4.
4. Target Allowable Duct Leakage Rate (cfm): This field will be automatically filled. In order to pass this test duct leakage must be equal to or less than 25 cfm when the dwelling and ducts are pressurized to 25 Pa with respect to outside.
5. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): Input the duct leakage rate taken from actual test measurements.
6. Compliance statement: This field will be automatically filled. The test passes if actual leakage rate is less than or equal to 25 cfm.

B3. Duct Leakage Diagnostic Test - Low Leakage Air-Handling Unit (LLAHU)

1. Air-Handling Unit Airflow (AHU Airflow) Determination Method: User will select from the following options:
   a. Cooling System Method: For systems with cooling, this selection must be made, and the nominal air handler airflow shall be 400 CFM per nominal ton of condensing unit cooling capacity as specified by the manufacturer or the heating only value, whichever is greater (See Section RA3.1.4.2.2 of the 2025 Reference Appendices).
   b. Heating System Method: For heating only systems the nominal air handler airflow shall be 21.7 CFM per kBtu/h of rated heating output capacity.
   c. Measured Airflow Method: The system airflow can be used as the air-handler airflow for the purpose of establishing duct leakage percentage (See Section RA3.1.4.2.3 of the 2025 Reference Appendices).
   d. Default Airflow Method: The Default Airflow Method may only be used for homes where the duct system is being tested before the conditioning and heating system is installed and the equipment specification is not known (See Section RA3.1.4.2.1 of the 2025 Reference Appendices).
   e. Indoor Unit Method
2. Condenser Nominal Cooling Capacity (ton): Same data given on MCH-01.
3. Indoor Unit Nominal Cooling Capacity: Same data given on MCH-01.
4. Heating Capacity (kBtu/h): Same data given on MCH-01;

5. Conditioned Floor Area Served by this HVAC System (ft^2): User will input CFA for zone which should be consistent with the value from the NRCC. User will have the option to leave this field blank because the zone CFA is only required for the default airflow calculation.
6. Measured AHU Airflow (cfm): If "Measured Airflow Method" is selected, user must input measured airflow.
7. Duct Leakage Test Conditions: User must select from the following options:
   a. Test Final: Test conducted at final inspection (testing at rough is not an option with this test. See Section RA3.1.4.3.1 of the 2025 Reference Appendices).
8. Duct Leakage Test Method: User will select from the following options: Total Leakage.
9. Leakage Factor: Value will be automatically populated in NRCC.
10. Calculated Target Allowable Duct Leakage Rate (cfm): This value will be automatically populated depending on values in B06, B07, and B08.
11. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): User will input this value from actual measurements from leakage test.
12. Air-Handling Unit Manufacturer Name: This will be automatically populated from information entered in the MCH-01.
13. Air-Handling Unit Model Number: This will be automatically populated from information entered in the MCH-01.
14. Compliance Statement: If Actual Duct Leakage Rate from leakage test is less than or equal to Calculated Target Allowable Duct Leakage Rate, "System passes leakage test" will automatically populate. If not, "System fails leakage test will automatically populate.

B4. Duct Leakage Diagnostic Test - Complete Replacement or Altered Duct System

1. Air-Handling Unit Airflow (AHU Airflow) Determination Method: User will select from the following options:
   a. Default Airflow Method: The Default Airflow Method may only be used for homes where the duct system is being tested before the conditioning and heating system is installed and the equipment specification is not known (See Section RA3.1.4.2.1 of the 2025 Reference Appendices).
   b. Cooling System Method: For systems with air conditioning, this selection must be made, and the nominal air handler airflow shall be 400 CFM per nominal ton of condensing unit cooling capacity as specified by the manufacturer (Note: the heating only value may be used, if higher, See Section RA3.1.4.2.2 of the 2025 Reference Appendices).
   c. Heating System Method: For heating only systems the nominal air handler airflow shall be 21.7 CFM per kBtu/h of rated heating output capacity.
   d. Measured Airflow Method: The measured system airflow can be used as the air handler airflow for the purpose of establishing duct leakage percentage (See Section RA3.1.4.2.3 of the 2025 Reference Appendices).
   e. Indoor Unit Method
2. Condenser Nominal Cooling Capacity (ton): Same data given on MCH-01.
3. Indoor Unit Nominal Cooling Capacity: Same data given on MCH-01.
4. Heating Capacity (kBtu/h): Same data given on MCH-01.

5. Conditioned Floor Area Served by this HVAC System (ft^2): User must input CFA for the space. Should be consistent with the NRCC input value.
6. Measured AHU Airflow (CFM): If "Measured Airflow Method" is selected, user must input measured airflow.
7. Duct Leakage Test Conditions: Select from the following options:
   a. Test Rough-in AHU: Installers may determine duct leakage in new construction by using diagnostic measurements at rough-in building construction stage prior to installation of interior finishing (See Section RA3.1.4.3.2 of the 2025 Reference Appendices). In this case the air handling unit (AHU) is installed at the time of test.
   b. Test Rough-in No AHU: Same as "Test Rough-in" except air handling unit is not yet installed (See Section RA3.1.4.3.2 of the 2025 Reference Appendices).
   c. Test Final: Test conducted at "final", i.e. all equipment, ducts, and registers are installed and the system is essentially in its final operating condition. (rough-in no longer an option. See Section RA3.1.4.3.1 of the 2025 Reference Appendices).
8. Duct Leakage Test Method: Select from the following options: Leakage to the Outside (house is pressurized simultaneously with the ducts such that only leakage going outside of the pressurized conditioned shell is measured, see RA3.1.4.3.4), or Total Leakage.
9. Leakage Factor: This field is automatically filled out based on choices in previous fields.
10. Calculated Target Allowable Duct Leakage Rate (cfm): This value will be automatically calculated based on values entered in previous fields.
11. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): Input the duct leakage rater taken from actual test measurements.
12. Compliance Statement: If Actual Duct Leakage Rate from leakage test is less than or equal to Calculated Target Allowable Duct Leakage Rate, "System passes leakage test" will automatically populate. If not, "System fails leakage test" will automatically populate.

B5. Duct Leakage Diagnostic Test - Sealing All Accessible Leaks using Smoke Test

1. Air-Handling Unit Airflow (AHU Airflow) Determination Method: User will select from the following options:
   a. Default Airflow Method: The Default Airflow Method may only be used for homes where the duct system is being tested before the conditioning and heating system is installed and the equipment specification is not known (See Section RA3.1.4.2.1 of the 2025 Reference Appendices).
   b. Cooling System Method: For systems with air conditioning, this selection must be made, and the nominal air handler airflow shall be 400 CFM per nominal ton of condensing unit cooling capacity as specified by the manufacturer (Note: the heating only value may be used, if higher, See Section RA3.1.4.2.2 of the 2025 Reference Appendices).
   c. Heating System Method: For heating only systems the nominal air handler airflow shall be 21.7 CFM per kBtu/h of rated heating output capacity.
   d. Measured Airflow Method: The measured system airflow can be used as the air handler airflow for the purpose of establishing duct leakage percentage (See Section RA3.1.4.2.3 of the 2025 Reference Appendices).
   e. Indoor Unit Method

2. Condenser Nominal Cooling Capacity (ton): Same data given on MCH-01.
3. Indoor Unit Nominal Cooling Capacity: Same data given on MCH-01.
4. Heating Capacity (kBtu/h): Same data given on MCH-01.
5. Conditioned Floor Area Served by this HVAC System (ft^2): User must input CFA for the space. Should be consistent with the NRCC input value.
6. Measured AHU Airflow (CFM): If "Measured Airflow Method" is selected, user must input measured airflow.
7. Duct Leakage Test Conditions: Select from the following options:
   a. Test Rough-in AHU: Installers may determine duct leakage in new construction by using diagnostic measurements at rough-in building construction stage prior to installation of interior finishing (See Section RA3.1.4.3.2 of the 2025 Reference Appendices). In this case the air-handling unit (AHU) is installed at the time of test.
   b. Test Rough-in No AHU: Same as "Test Rough-in" except air handling unit is not yet installed (See Section RA3.1.4.3.2 of the 2025 Reference Appendices).
   c. Test Final: Test conducted at "final", i.e. all equipment, ducts, and registers are installed and the system is essentially in its final operating condition. (rough-in no longer an option. See Section RA3.1.4.3.1 of the 2025 Reference Appendices).
8. Duct Leakage Test Method: Select from the following options: Leakage to the Outside (house is pressurized simultaneously with the ducts such that only leakage going outside of the pressurized conditioned shell is measured, see RA3.1.4.3.4), or Total Leakage.
9. Leakage Factor: This field is automatically filled out based on choices in previous fields.
10. Calculated Target Allowable Duct Leakage Rate (cfm): This value will be automatically calculated based on values entered in previous fields.
11. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): Input the duct leakage rater taken from actual test measurements.
12. Compliance Statement: If Actual Duct Leakage Rate is less than or equal to Calculated Target Allowable Duct Leakage Rate, "system passes - system complies with Allowable Duct Leakage Rate Criterion" will automatically populate.
    If measured leakage is greater than allowable duct leakage rate, then the following will automatically populate:
    "System passes using smoke test of an altered HVAC system in an existing building
    - No visible smoke exits the accessible portions of the duct system.
    - Smoke is only emanating from air handler unit (AHU cabinet and non-accessible portions of the duct system.

    Note: Accessible is defined as having access thereto, but which first may require removal or opening of access panels, doors, or moving similar obstructions. If access to the ducts requires an object to be demolished or deconstructed, then sealing of those ducts is not required.

C. Ducts Located in Garage Spaces

1. Duct Leakage Test Method: This field is automatically filled out based on choices in previous fields.
2. Leakage Factor: This field is automatically filled out based on choices in previous fields.

3. Air-Handling Unit Airflow (AHU Airflow) Determination Method: This field is automatically filled out based on choices in previous fields.
4. Measured AHU Airflow (CFM): This field is automatically filled out based on choices in previous fields.
5. Calculated Target Allowable Duct Leakage Rate (cfm): This value will be automatically calculated based on values entered in previous fields
6. Actual Duct Leakage Rate from Leakage Test Measurement (cfm): This field is automatically filled out based on choices in previous fields
7. Compliance Statement: If Actual Duct Leakage Rate from leakage test is less than or equal to Calculated Target Allowable Duct Leakage Rate, passes message will automatically populate. If not, "System fails leakage test" will automatically populate.

D. Additional Requirements for Compliance

1. This field must be a true statement (or not applicable) for the system to comply.
2. This field must be a true statement (or not applicable) for the system to comply.
3. This field must be a true statement (or not applicable) for the system to comply.
4. This field must be a true statement (or not applicable) for the system to comply.
5. This field must be a true statement (or not applicable) for the system to comply.
6. This field must be a true statement (or not applicable) for the system to comply.
7. This field must be a true statement (or not applicable) for the system to comply.
8. This field must be a true statement (or not applicable) for the system to comply.
9. This field must be a true statement (or not applicable) for the system to comply.
10. This field must be a true statement (or not applicable) for the system to comply.
11. This field must be a true statement (or not applicable) for the system to comply.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SPACE CONDITIONING SYSTEM FAN EFFICACY

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-22-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

Note: This table completed by ECC Registry.

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

A. Ducted Cooling System Information

01	System Identification or Name	
02	System Location or Area Served	
03	Indoor Unit Name or Description of Area Served	
04	System Installation Type	
05	Nominal Cooling Capacity (tons) of Condenser	
06	Condenser Speed Type	
07	Cooling System Zonal Control Type	
08	Central Fan Integrated (CFI) Ventilation System Status	
09	System Bypass Duct Status	
10	Date of System Airflow Rate Measurement	
11	Airflow Rate Protocol Utilized	
12	Central Fan Ventilation Cooling System Status	

B. Fan Watt Measurement Apparatus and Procedure Information

Instrument Specifications are given in RA3.3.1, and system fan watt measurement apparatus information is given in RA3.3.2.2.

01	Fan Watt Verification Device Used	

C1. Forced Air System Fan Efficacy Measurement

Complete this section with Fan Efficacy Measurement Data for Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor

The procedures for System Fan Watt Verification are specified in Reference Residential Appendix RA3.3.

01	Actual Tested Watts	
02	Actual Tested Airflow from MCH-23 (cfm)	
03	Required Fan Efficacy (watts/cfm)	
04	Actual Fan Efficacy (watts/cfm)	
05	Compliance Statement:	

C2. Forced Air System Fan Efficacy Measurement – All Zones Calling

Complete this section with Fan Efficacy Measurement Data for Newly Installed Zoned Single-Speed Compressor Systems

The procedures for System Fan Watt Verification are specified in Reference Residential Appendix RA3.3.

01	Actual Tested Watts	
02	Actual Tested Airflow from MCH-23 (cfm)	
03	Required Fan Efficacy (watts/cfm)	
04	Actual Fan Efficacy (watts/cfm)	
05	Compliance Statement:	

D. Forced Air System Fan Efficacy Measurement – All Zonal Control Modes

The procedures for System Fan Efficacy Verification are specified in Reference Residential Appendix RA3.3.Note: For compliance with verification in all zonal control modes, it is sufficient to verify fan efficacy for operation of each individual zone when the individual zone is the sole zone calling for conditioning. It is not necessary to verify fan efficacy for combinations of 2 or more zones that are less than all zones calling (e.g., 2 out of three zones calling).

01	Number of Independently Controlled Zones (i.e., number of thermostats or temperature sensors that independently control one or more dampers.)	
02	Required Fan Efficacy in All Zonal Control Modes(Watt/cfm)	

03	04	05	06	07	08
Zone Name	Zone Description	Measured Watt Draw with all Other Zones Off	Measured Airflow with all Other Zones Off (cfm)	Calculated Fan Efficacy (Watts/cfm)	Zone Compliance Status

09	Compliance Statement:	

E. Central Fan Ventilation Cooling System Fan Efficacy Measurement

The procedures for Central Fan Ventilation Cooling System Fan Watt Verification are specified in Reference Residential Appendix RA3.3.4.

01	Actual Tested Watts	
02	Actual Tested Ventilation Airflow from MCH-23 (cfm)	
03	Required Fan Efficacy (watts/cfm)	
04	Actual Fan Efficacy (watts/cfm)	
05	Compliance Statement:	

F. Additional Requirements

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

01	All registers were fully open during the diagnostic test.
02	System fan was set at maximum speed during the diagnostic test.
03	If fresh air duct is part of the HVAC system it was not closed during the diagnostic test.
04	Airflow rate and fan watt draw shall be simultaneous measurements when used to calculate the fan efficacy tested value.
05	Multi-speed compressor space cooling systems or variable speed compressor systems with controls that vary fan speed subject to the number of zones, as certified by the installer may verify airflow (cfm/ton) and fan efficacy (watt/cfm) with system operating at maximum compressor capacity and system fan speed with all zones calling for conditioning,
06	Zoned cooling air distribution systems with single speed compressors shall meet both the airflow (cfm/ton) and fan efficacy (watt/cfm) criteria in every zonal control mode.
07	Portable watt meters used for measurements of air-handler watt draws shall be true power measurement systems (i.e., sensor plus data acquisition system) having an accuracy of ± 2% of reading or ± 10 watts whichever is greater.

SPACE CONDITIONING SYSTEM FAN EFFICACY

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-22-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

NRCI-MCH-22-F User Instructions

Section A. Ducted Cooling System Information

1. System Identification or Name: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
2. System Location or Area Served: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
3. Indoor Unit Name: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
4. System Installation Type: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
5. Nominal Cooling Capacity (tons) of Condenser: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
6. Condenser Speed Type: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
7. Cooling System Zonal Control Type: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
8. Central Fan Integrated (CFI) Ventilation System Status: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
9. System Bypass Duct Status: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
10. Date of System Airflow Rate Measurement: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
11. Airflow Rate Protocol utilized: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
12. Central Fan Ventilation Cooling System Status: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.

Section B. Fan Watt Measurement Apparatus and Procedure Information

1. Fan Watt Verification Device Used: If the device used to measure fan watts was a portable watt meter then select “Portable Watt Meter”. This can include plug-in devices such as a “Watts-Up” meter, or a “Kill-a-Watt” meter, or a clamp-on type meter that reads true power watts directly (must account for power factor – multiplying amps x volts is not adequate).

Section C1. Forced Air System Fan Efficacy Measurement

(This section title is for systems that are Non-Zoned or have Zoned Multi-Speed Compressor) and

Section C2. Forced Air System Fan Efficacy Measurement – All Zones Calling

(This section title is for zonally controlled systems) Both C1 and C2 have the same fields and instructions:

1. Actual Tested Watts: Enter the number of watts tested using the device specified in Section B and tested with all zones calling for cooling simultaneously.
2. Actual Tested Airflow from MCH-23 (cfm): This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
3. Required Fan Efficacy (watts/cfm): This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the NRCC for performance compliance.
    a. 0.62 watts/cfm for small duct high velocity HP or AC systems

   b. 0.45 watts/cfm for central gas furnace or packaged gas furnace systems
   c. 0.58 watts/cfm for all other systems
4. Actual Fan Efficacy (watts/cfm): This field is filled out automatically. It is calculated by dividing the actual tested watts by the actual tested airflow.
5. Compliance Statement: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy.

D. Forced Air System Fan Efficacy Measurement – All Zonal Control Modes

(This section is required for zonally controlled systems)

1. Number of Independently Controlled Zones: Enter the number of independently controlled zones.
2. Required Fan Efficacy (Watts/cfm): This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the NRCC for performance compliance.
   a. 0.62 watt/cfm for small duct high velocity HP or AC systems
   b. 0.45 watt/cfm for central gas furnace or packaged gas furnace systems
   c. 0.58 watt/cfm for all other systems
3. Zone Name: Enter a unique name for each independent zone.
4. Zone Description: Enter a description of the zone (e.g. upstairs, downstairs).
5. Measured Watt Draw with All Other Zones Off: Enter the number of watts tested using the device specified in Section B and tested with all other zones off.
6. Measured Airflow with All Other Zones Off: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
7. Calculated Fan Efficacy: This field is filled out automatically. It is calculated by dividing the measured watt draw by the measured airflow.
8. Zone Compliance Status: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for this zone.
9. Compliance Statement: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for all zones tested.

Section E. Central Fan Ventilation Cooling System Fan Efficacy Measurement

(This section is required if project includes a CFVCS system)

1. Actual Tested Watts: Enter the number of watts tested using the device specified in Section B and tested at ventilation cooling airflow rate.
2. Actual Tested Ventilation Airflow from MCH-23: This field is filled out automatically. It is referenced from the NRCI-MCH-23, which must be completed prior to this document.
3. Required Fan Efficacy: This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the NRCC for performance compliance.
   a. 0.62 watt/cfm for small duct high velocity HP or AC systems
   b. 0.45 watt/cfm for central gas furnace or packaged gas furnace systems
   c. 0.58 watt/cfm for all other systems
4. Actual Fan Efficacy: This field is filled out automatically. This is calculated by dividing the measured watt draw by the measured airflow.
5. Compliance Statement: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for all zones tested.

Section F. Additional Requirements

1. This field must be a true statement (or not applicable) for the system to comply.
2. This field must be a true statement (or not applicable) for the system to comply.
3. This field must be a true statement (or not applicable) for the system to comply.
4. This field must be a true statement (or not applicable) for the system to comply.
5. This field must be a true statement (or not applicable) for the system to comply.
6. This field must be a true statement (or not applicable) for the system to comply.
7. This field must be a true statement (or not applicable) for the system to comply.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SPACE CONDITIONING SYSTEM AIRFLOW RATE

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-23-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

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

A. Ducted Cooling System Information

01	Space Conditioning System Identification or Name	
02	Space Conditioning System Description of Area Served	
03	Indoor Unit Name	
04	System Installation Type	
05	Nominal Cooling Capacity (tons)	
06	Condenser Speed Type	
07	Cooling System Zonal Control Type	
08	Central Fan Integrated (CFI) Ventilation System Status	
09	System Bypass Duct Status	
10	Date of System Airflow Rate Measurement	
11	Airflow Rate Protocol Utilized	
12	Central Fan Ventilation Cooling System Status	

B. Hole for the Placement of a Static Pressure Probe (HSPP), and Permanently Installed Static Pressure Probe (PSPP) in the Supply Plenum

Procedures for installing HSPP or PSPP are specified in RA3.3.1.1

01	Method Used to Demonstrate Compliance with the HSPP/PSPP Requirement	

C. Airflow Rate Measurement Apparatus and Procedure Information

Instrument Specifications are given in RA3.3.1.1, and system airflow rate measurement apparatus information is given in RA3.3.2.

01	Airflow Rate Measurement Type Used for this Airflow Rate Verification	
02	Manufacturer of Airflow Measurement Apparatus	
03	Model number of Airflow Measurement Apparatus	
04	Certification Status of the Airflow Measurement Apparatus Accuracy	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

D. Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

The installer shall attempt to correct non-compliant system airflow rates by performing the following remedial actions as specified in RA3.3.3.1.5

01	Determine that the air filter media is clean. If the air filter media is dirty, then replace it with clean filter media.	
02	Open all registers and dampers and remove any obstructions.	
03	Replace/Repair all accessible crushed, blocked, restricted, remove excess length, and sharp bends in ducts. Supported every 4 ft max. with a max. 2 in sag.	
08	Clean the evaporator coil according to the manufacturer and ensure the coil is not obstructed.	
05	Air handler fan speed set to high and blower wheel and motor are operating properly.	
06	If determined to be too small, replace the return duct with a larger one and/or add a second return duct.	
07	If determined to be too small, replace the return grille with a larger area grille.	
08	If any of the above were not completed list the Action Required and a description of why the action could not be completed:	

E1. Forced Air System Airflow Rate Measurement

Complete this section with Airflow Rate Measurement Data for Newly Installed Non-Zoned Systems or Zoned Multi-Speed Compressor

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3

01	Actual System Airflow Rate Measurement (cfm)	
02	Required Minimum System Airflow Rate (cfm/ton)	
03	Required Minimum System Airflow Target (cfm)	
04	Compliance Statement:	

E2. Forced Air System Airflow Rate Measurement - All Zones Calling

Complete this section with Airflow Rate Measurement Data for Newly Installed Zoned Single-Speed Compressor Systems

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3

01	Actual System Airflow Rate Measurement (cfm)	
02	Required All Zones Calling Minimum System Airflow Rate (cfm/ton)	
03	Required All Zones Calling Minimum System Airflow Target (cfm)	
04	Compliance Statement:	

E3. Forced Air System Airflow Rate Measurement - Best Airflow Rate Attainable

Complete this section with Airflow Rate Measurement Data for Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3

01	Actual System Airflow Rate Measurement (cfm)	
02	Required Minimum System Airflow Rate (cfm/ton)	
03	Required Minimum System Airflow Target (cfm)	
04	Compliance Statement:	
05	ECC Sample Group Eligibility	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

E4. Forced Air System Airflow Rate Measurement – Heating Only

Complete this section with Airflow Rate Measurement Data for Newly Installed Heating Only Non-Zoned Systems or Zoned Multi-Speed Compressor Measurement Only – No Minimum Target Requirement

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3.

01	Actual System Airflow Rate Measurement (cfm)	

F. Forced Air System Airflow Rate Measurement – All Other Zonal Control Modes

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3. For compliance with verification in all zonal control modes, it is sufficient to verify airflow rate for operation of each individual zone when the individual zone is the sole zone calling for conditioning. It is not necessary to verify airflow rate for combinations of 2 or more zones that are less than all zones calling (e.g., 2 out of three zones calling).

01	Number of Independently Controlled Zones (i.e., number of thermostats or temperature sensors that independently control one or more dampers.)			
02	Required Minimum Cooling System Airflow Rate (cfm/ton)			
03	Required Minimum Airflow in all Zonal Control Modes (cfm)			
04		05	06	07
Zone Name		Zone Description	Measured Airflow with All Other Zones Off (CFM)	Zone Compliance Status
08	Compliance Statement:			

G. Central Fan Ventilation Cooling System Airflow Rate Measurement

The procedures for central fan ventilation cooling system airflow rate verification are specified in Reference Residential Appendix RA3.3.4

01	Required Ventilation System Airflow Rate (cfm)	
02	Actual System Ventilation Airflow Rate Measurement (cfm)	
03	Compliance Statement:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

H. Additional Requirements

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

01	Air filters that meet the applicable requirements of Standards Section 150.0(m)12 or 150.0(m)13 were properly installed in the system during system airflow rate measurement identified on this Certificate of Installation.
02	The airflow rate measurement apparatus used to perform the airflow rate measurement identified on this Certificate of Installation was calibrated in accordance with the apparatus manufacturer's specifications and conforms to the instrumentation specifications given in RA3.3.1.
03	A visual inspection shall confirm that bypass ducts that deliver conditioned supply air directly to the space conditioning system return duct airflow are not used on newly constructed zonally controlled systems unless the Performance Certificate of Compliance indicates an allowance for use of a bypass duct. When a bypass duct is accounted for on the Performance Certificate of Compliance, the airflow rate shall conform to the specifications listed on the Certificate of Compliance.
04	All registers were fully open during the diagnostic test.
05	System fan was set at maximum speed during the diagnostic test.
06	If fresh air duct is part of the HVAC system it was not closed during the diagnostic test.
07	Airflow rate and fan watt draw shall be simultaneous measurements when used to calculate the Fan Efficacy tested value.
08	Multi-speed compressor space cooling systems or variable speed compressor systems with controls that vary fan speed subject to the number of zones, as certified by the installer may verify airflow (cfm/ton) and fan efficacy (Watt/cfm) with system operating at maximum compressor capacity and system fan speed with all zones calling for conditioning,
09	For altered systems that do not comply with the minimum 300 cfm per ton airflow rate requirement but opt to comply using the remedial actions on this MCH-23 compliance document according to Section RA3.3.3.1.5, the system's thermostat shall conform to the specifications in Reference Joint Appendix JA5 and shall be capable of receiving and responding to Demand Response Signals prior to final approval of the building permit by the enforcing agency (Section 150.2(b)1Fiia).

SPACE CONDITIONING SYSTEM AIRFLOW RATE

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-23-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

NRCI-MCH-23-F User Instructions

Section A. Ducted Cooling System Information

1 System Identification or Name: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

2 System Location or Area Served: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

3 Indoor Unit Name: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

4 System Installation Type: Select the appropriate System Installation Type from the following choices:

a. New: Use this choice for newly constructed buildings, additions with all-new systems dedicated to the addition, or new systems installed in existing homes where the equipment and ducts are all newly installed (aka, "Cut-in").

b. Replacement: Use this choice if the system is a complete replacement space-conditioning system installed as part of an alteration, and includes all the system heating or cooling equipment plus a replacement duct system (150.2(b)1Diia) where the ducts are at least 75% or more newly installed duct material (up to 25% of the finished system may consist of reused parts from the dwelling unit's previously existing duct system, such as registers, grilles, boots, air handler, coil, plenums, duct material); plus a replacement air handler.

c. Alteration: Use this choice for existing buildings where any of the following are newly installed or replaced as part of the project and the system does not meet one of the other compliance categories above.:

i. 25 feet or more of space-conditioning system ducts are installed in unconditioned space or indirectly conditioned space.

ii. Air conditioning or heat pump condenser

iii. Heating or cooling coil

iv. Air handler (e.g., furnace, fan coil, package unit)

5 Nominal Cooling Capacity (tons): This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document. If the number of indoor units connected to the outdoor unit is equal to one or the system is a packaged system then this field is equal to the nominal cooling capacity of the condenser. If the number of indoor units connected to the outdoor unit is greater than one this field is equal to the indoor unit nominal cooling capacity.

6 Condenser Speed Type: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

7 Cooling System Zonal Control Type: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

8 Central Fan Integrated (CFI) Ventilation System Status: If the system has Central Fan Integrated System, then select "CFI System", otherwise select "Not a CFI system".

9 System Bypass Duct Status: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

10 Date of System Airflow Rate Measurement: Enter the date that the airflow test was performed.

11 Airflow Rate Protocol Utilized: If the system installation type is "New" or "Replacement" then only the RA3.3 airflow methods may be used. If the system installation type is "Alteration", the RA3.3 airflow methods may be used, but the Alternative to Compliance with Minimum System Airflow Requirements ("Best I Can Do" Airflow) is an option for existing systems that may require substantial modification to improve the airflow.

12 Central Fan Ventilation Cooling System (CFVCS) Status: This field is filled out automatically. It is referenced from the NRCI-MCH-E, which must be completed prior to this document.

Section B. Hole for the Placement of a Static Pressure Probe (HSPP), and Permanently Installed Static Pressure Probe (PSPP) in the Supply Plenum

1. A hole for a static pressure probe (HSPP) or a permanent static pressure probe (PSPP) is required when system airflow verification is required, whether the airflow test method used requires one or not. Select the appropriate choice from the following options using a dropdown box, the Static Pressure Measurement Method:
   a. If an Hole Static Pressure Probe is installed then select “HSPP Installed”
   b. If a Permanent Static Pressure Probe is installed then select “PSPP Installed”
   c. If the system is configured such that an HSPP nor PSPP can be installed, an alternate location that provides access for making supply plenum pressure measurement may be used. Select “An alternative location has been provided and clearly labeled.”
   d. If the system is such that an HSPP or PSPP is not applicable, select “HSPP/PSPP are not applicable to this system”.

Section C. Airflow Rate Measurement Apparatus and Procedure Information

1. Airflow Rate Measurement Type Used for this Airflow Rate Verification: Select the appropriate airflow test procedure from the following options for the method used to determine actual fan airflow:
   a. Diagnostic Fan Flow Using Fan Flow Meter (aka Plenum Pressure Matching) according to the procedures in RA3.3.3.1.1
   b. Diagnostic Fan Flow Using Flow Grid Measurement according to the procedures in RA3.3.3.1.2
   c. Diagnostic Fan Flow Using Powered Flow Capture Hood according to the procedures in RA3.3.3.1.3
   d. Diagnostic Fan Flow Using Traditional Flow Capture Hood according to the procedures in RA3.3.3.1.4
2. Manufacturer of Airflow Measurement Apparatus: Enter the name of the manufacturer of the airflow measurement tool used to measure the airflow for this test.
3. Model number of Airflow Measurement Apparatus: Enter the model number of the airflow measurement tool used to measure the airflow for this test.
4. Certification Status of the Airflow Measurement Apparatus Accuracy: The measurement apparatus used to perform an airflow verification measurements must appear on the CEC list of approved devices found at http://www.energy.ca.gov/title24/equipment_cert/ama_fas/index.html, if this is true, select “Certified”, otherwise select “Not Certified”. The latter choice will not allow the system to pass until a certified device is used.

Section D. Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems

(This section is required for altered systems using alternative compliance)

These fields are required for alteration project compliance

1. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
2. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
3. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
4. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
5. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
6. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.
7. Refer to section RA3.3.3. for details on this item. Indicate whether completed or not.

8. If any of the above items could not be completed due to inaccessibility or significant cost, provide an explanation here.

Section E1. Forced Air System Airflow Rate Measurement (This section is required for non-zoned systems or zoned systems with multi-speed systems)

1. Required Minimum System Airflow Rate (cfm/ton): This field is filled automatically. The target is based on whether the system is new or altered and whether a value was specified on the NRCI-MCH-E.
2. Required Minimum System Airflow Target (cfm): This field is calculated automatically. It is the product of the minimum airflow rate per ton and the tonnage of the system condenser.
3. Actual System Airflow Rate Measurement (cfm): Enter the actual tested value of the airflow measured using the apparatus specified above.
4. Compliance Statement: This field is filled automatically. Compliance requires that the measured airflow meets the minimum airflow target.

Section E2. Forced Air System Airflow Rate Measurement – All Zones Calling

(This section is required if system is zonally controlled)

1. Required All Zones Calling Minimum System Airflow Rate (cfm/ton): This field is filled automatically. The target is based on whether the system is new or altered and whether a value was specified on the NRCI-MCH-E.
2. Required All Zones Calling Minimum System Airflow target (cfm): This field is calculated automatically. It is the product of the minimum airflow rate per ton and the tonnage of the system condenser.
3. Actual System Airflow Rate Measurement (cfm): Enter the actual tested value of the airflow measured using the apparatus specified above.
4. Compliance Statement: This field is filled automatically. Compliance requires that the measured airflow meets the minimum airflow target.

Section E3. Forced Air System Airflow Rate Measurement - Best Airflow Rate Attainable (This section is required for altered systems using alternative compliance)

1. Required Minimum System Airflow Rate (cfm/ton): This field is filled automatically. The target is always 300 cfm/ton for this option.
2. Required Minimum System Airflow Target (cfm): This field is calculated automatically. It is the product of the minimum airflow rate per ton and the tonnage of the system condenser.
3. Actual System Airflow Rate Measurement (cfm): Enter the actual tested value of the airflow measured using the apparatus specified above.
4. Compliance Statement: This field is filled automatically. Compliance requires that the measured airflow meets the minimum airflow target, however if the criteria of RA3.3.3 is met the best attainable airflow rate will suffice.
5. ECC Sample Group Eligibility: This field is filled out automatically. If the minimum airflow rate cannot be met and the criteria of RA3.3.3 is used, the system cannot be included in a ECC sample group.

Section E4. Forced Air System Airflow Rate Measurement (This section is required if system is heating only)

1. Actual System Airflow Rate Measurement (cfm): Enter the actual tested value of the airflow measured using the apparatus specified above.

Section F. Forced Air System Airflow Rate Measurement – All Other Zonal Control Modes

(This section is required for systems with single speed compressor and zonally controlled).

1. Number of Independently Controlled Zones: Enter the number of zones in this system that are independently controlled, i.e., that can call for cooling while other zones can be fully or mostly shut off from system airflow. This usually corresponds to the number of thermostats or zone sensors.
2. Required Minimum Cooling System Airflow Rate (cfm/ton): This field is filled automatically. The target is based on whether the system is new or altered and whether a value was specified on the NRCI-MCH-E.
3. Required Minimum Airflow in all Zonal Control Modes (cfm): This field is filled out automatically. If a value other than 350 cfm was claimed in the performance calculations, it will be referenced from the NRCC, otherwise the target is 350 cfm.
4. Zone Name: Enter a unique name for each zone on this system. Examples: Zone 1, Z1, Zone A, etc.
5. Zone Description: Enter a brief description of each zone that is detailed enough allow someone to distinguish it from the others in the field. Examples: upstairs, first floor, east wing, bedrooms only, (list rooms served), etc.
6. Measured Airflow with All Other Zones Off: This test must be performed with only one independently controlled zone calling for cooling (Note: if fan watt verification is required, it must be performed simultaneously to the corresponding airflow from this test). All other zones must not be calling during this test. The zone dampers for the other zones must be in their normal closed position. Enter the airflow value measured for the zone that is calling. This test must be performed for each and every independently controlled zone.
7. Zone Compliance Status: This field is filled out automatically. The result is based on whether or not the actual airflow meets the required airflow for this zone.
8. Compliance Statement: This field is filled out automatically. The result is based on whether or not the actual airflow meets the required airflow for all zones

Section G. Central Fan Ventilation Cooling System Airflow Rate Measurement

(This section is required if project has a fixed or variable CFVCS.)

1. Required Ventilation System Airflow Rate (cfm): This field is filled automatically. The target is based on the airflow rate specified on the NRCI-MCH-E.
2. Actual System Ventilation Airflow Rate Measurement (cfm): Enter the actual tested value of the airflow measured using the apparatus specified above.
3. Compliance Statement: This field is filled automatically. Compliance requires that the measured airflow meets the airflow target.

Section H. Additional Requirements

1. This field must be a true statement (or not applicable) for the system to comply.
2. This field must be a true statement (or not applicable) for the system to comply.
3. This field must be a true statement (or not applicable) for the system to comply.
4. This field must be a true statement (or not applicable) for the system to comply.
5. This field must be a true statement (or not applicable) for the system to comply.
6. This field must be a true statement (or not applicable) for the system to comply.
7. This field must be a true statement (or not applicable) for the system to comply.
8. This field must be a true statement (or not applicable) for the system to comply.
9. This field must be a true statement (or not applicable) for the system to comply.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

REFRIGERANT CHARGE VERIFICATION

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-25-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

Note: This table completed by ECC Registry.

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

A. System Information

Each system requiring refrigerant charge verification will be documented on a separate certificate.

01	Space Conditioning System Identification or Name	
02	Space Conditioning System Location or Area Served	
03	Condenser (or package unit) Make or Brand	
04	Condenser (or package unit) Model Number	
05	Nominal Cooling Capacity (tons) of Condenser	
06	Condenser (or package unit) Serial Number	
07	Refrigerant Type	
08	Other Refrigerant Type (if applicable)	
09	Liquid Line Filter Drier Installed According to Manufacturer's Specifications (if applicable)	
10	System Installation Type	
11	Fault Indicator Display (FID) Status (Note: Even systems with a FID must have refrigerant charge verified by installer)	
12	Is the system of a type that the minimum airflow can be verified for all indoor units using an approved measurement procedure (RA3.3 or RA3.3.3)?	
13	Is the system of a type that approved refrigerant charge verification procedures can be used to verify compliance with the refrigerant charge verification requirements when temperatures are ≥ 55°F (RA3.2.2, or RA1)?	
14	Date of Refrigerant Charge Verification for this System	
15	Refrigerant Charge Verification Method Used	
16	Person Who Performed the Refrigerant Charge Verification Reported on this Certificate of Installation	
17	ECC Verification Compliance Requirement Status	

B1. Metering Device Verification

Superheat Method can only be used on systems that do not have a variable metering device.

01	Refrigerant Metering Device	
02	Superheat Method Applicability Status	

B2. Metering Device Verification

Subcooling Method can only be used on systems that have a variable metering device.

01	Refrigerant Metering Device	
02	Subcooling Method Applicability Status	

C. Instrument Calibration

Procedures for instrument calibration are given in Reference Residential Appendix RA3.2.2 and RA3.2.2.2

01	Date of Digital Refrigerant Gauge Calibration	
02	Date of Digital Thermocouple Calibration	
03	Digital Refrigerant Gauge Calibration Status	
04	Digital Thermocouple Calibration Status	

D. Measurement Access Hole (MAH) Verification

Procedures for installing MAH are specified in Reference Residential Appendix RA3.2.2.3

01	Method Used to Demonstrate Compliance with the Measurement Access Hole (MAH) Requirement	

E. Minimum System Airflow Rate Verification

Procedures for verifying minimum system airflow are specified in Reference Residential Appendix RA3.3.3.

01	02	03
Indoor Unit Name or Description of Area Served	Minimum Required System Airflow Rate (cfm)	System Airflow Rate Verification Status
04	Compliance Statement:	
Notes:		

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F1. Data Collection for Superheat Method

Procedures for determining Refrigerant Charge using the Standard Charge Verification Procedure are given in Reference Residential Appendix RA3.2.2 and RA3.2.2.2

01	Lowest Return Air Dry-bulb Temperature that Occurred During the Refrigerant Charge Verification Procedure (°F)	
02	Measured Condenser Air Entering Dry-bulb Temperature ($T_{condenser, db}$) (°F)	
03	Outdoor Temperature Qualification Status	
04	Measured Return (evaporator entering) Air Dry-bulb Temperature ($T_{return, db}$) (°F)	
05	Measured Return (evaporator entering) Air Wet-bulb Temperature ($T_{return, wb}$) (°F)	
06	Measured Suction Line Temperature ($T_{suction}$) (°F)	
07	Measured Suction Line Pressure ($P_{suction}$ - psig)	
08	Evaporator Saturation Temperature ($T_{evaporator, sat}$) from Digital Gauge or P-T Table using Line F07 (°F)	
09	Measured Superheat (Line F06 – Line F08) (°F)	
10	Target Superheat (from Table RA3.2-2, using F02 and F05) (°F)	
11	Compliance Statement:	

F2. Data Collection and Calculations for Subcooling Method

Procedures for determining Refrigerant Charge using the Standard Charge Verification Procedure are given in Reference Residential Appendix RA3.2.2

01	Lowest Return Air Dry-bulb Temperature that Occurred During the Refrigerant Charge Verification Procedure (°F)	
02	Measured Condenser Air Entering Dry-bulb Temperature ($T_{condenser, db}$)	
03	Outdoor Temperature Qualification Status	
04	Measured Liquid Line Temperature (T_{liquid}) (°F)	
05	Measured Liquid Line Pressure (P_{liquid}) (psig)	
06	Condenser Saturation Temperature ($T_{condensor, sat}$) from Digital Gauge or P-T Table using Line F05 (°F)	
07	Measured Subcooling (Line F06 – Line F04) (°F)	
08	Target Subcooling from Manufacturer (°F)	
09	Compliance Statement:	

G. Metering Device Verification for Subcooling Method

Procedures for the verification of proper metering device operation are specified in RA3.2.2.6.2

01	Measured Suction Line Temperature ($T_{suction}$) (°F)	
02	Measured Suction Line Pressure ($P_{suction}$) (psig)	
03	Evaporator Saturation Temperature ($T_{evaporator, sat}$) from Digital Gauge or P-T Table using line G02 (°F)	
04	Measured Superheat (Line G01 – Line G03) (°F)	
05	Measured Superheat (Line G04) is between 4°F and 25°F (inclusive)	
06	Measured Superheat (Line G04) is within Manufacturer's Specifications (if known)	
07	Compliance Statement:	

H. Weigh In Charge Procedure

Procedures for Refrigerant Charge using the Weigh-in Charging Procedure are given in Reference Residential Appendix RA3.2.2.2 and RA3.2.3

01	Measured Condenser Air Entering Dry-bulb Temperature ($T_{condenser, db}$) (°F)	
02	Specify the Method of Weigh-in	
03	Manufacturer's Standard Charge for Condenser (lbs, oz.)	
04	Manufacturer's Standard Liquid Line Length (ft)	
05	Manufacturer's Standard Liquid Line Diameter (in)	
06	Manufacturer's Standard Indoor Coil Size (tons)	
07	Installed Liquid Line Length (ft)	
08	Installed Liquid Line Diameter (in)	
09	Installed Indoor Coil Size (tons)	
10	Charge Adjustment to Standard Charge from Manufacturer's Specifications (ounces, positive = add, negative = remove)	
11	Refrigerant Required to be Weighed in by the Installer (lbs, oz)	
12	Refrigerant Weighed in by Installer (lbs, oz)	
13	Compliance Statement:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

I. Weigh In Charge Procedure – Additional Requirements

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

01	If refrigerant line connections require welding, the system is braised with dry nitrogen in the lines and indoor coil.
02	i. In all cases where the OEM instructions call for checking for gas leaks with vacuum, prior to introducing refrigerant, system is evacuated to 500 microns or less and, when isolated, has risen no more than 300 microns after 5 minutes. ii. In all cases where the OEM instructions call for checking for gas leaks with nitrogen gas, the system was pressurized to the manufacturer's specified pressure and if the pressure could not be maintained, leaks were located and fixed.
03	Observation and documentation of the vacuum and pressurization tests are not required if no fittings (other than the fitting to the compressor) are compression or flare fittings.
04	The calculated weight adjustment for lineset length is based on the length and diameter of the lineset.
05	The calculated weight adjustment for coil size is based on manufacturer instructions.
06	The actual total weight adjustment is equal to the sum of the calculated weight adjustments for lineset and coil size.
07	The calculated and actual total weights of refrigerant in the system are recorded on or near the nameplate label, in indelible ink or other permanent means.
08	When applicable and if necessary to avoid delay of approval of dwelling units completed when outside temperatures are below 55°F, the enforcement agency may approve compliance with the refrigerant charge verification requirements based on registration of this CF2R-MCH-25, documenting use of the RA3.2.3.1 HVAC Installer Weigh-In Charging Procedure when the optional Section RA3.2.3.2 ECC Rater Observation of Weigh-In Charging Procedure is not used. As condition for such enforcement agency approval, the responsible person's signature on this compliance document affirms the installer agrees to return to correct refrigerant charge if a ECC Rater determines at a later time, when the outside temperature is 55°F or greater, that refrigerant charge correction is necessary.

J. Verification of New Package Unit Factory Charge

Note: There is no ECC verification requirement for New Package Unit Factory Charge. The Enforcement Agency has responsibility for this verification.

01	The responsible person's signature on this document affirms that this new package unit has correct refrigerant charge as provided by the manufacturer prior to shipment from the factory, and no modifications have been made to this packaged unit that would result in a change to the amount of refrigerant in the unit.

REFRIGERANT CHARGE VERIFICATION

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-25-F

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

NRCI-MCH-25-F User Instructions

Section A. System Information

1. This information is automatically pulled from the Certificate of Installation (MCH-01).
2. This information is automatically pulled from the Certificate of Installation (MCH-01)
3. This information is automatically pulled from the Certificate of Installation (MCH-01).
4. This information is automatically pulled from the Certificate of Installation (MCH-01)
5. This information is automatically pulled from the Certificate of Installation (MCH-01).
6. This information is automatically pulled from the Certificate of Installation (MCH-01)
7. Choose the type of refrigerant used by the system being verified. R-454, R-22 and R-410A are the most common, but other types may occasionally be encountered.
8. If "Other" is chosen in A07, then indicate the type of refrigerant being used. Documentation of refrigerant may be requested.
9. If applicable, a liquid line filter direr shall be installed according to the manufacturer's specifications.
10. Indicate whether the HVAC system is Completely New, Replacement or an Alteration. These are defined in detail the Residential Compliance Manual.
11. N/A
12. Most ducted split systems and package systems are of the type that minimum airflow can be verified using an approved measurement procedure. Examples of systems that do not meet this description are ductless systems. Selecting "No" here may subject the project to additional scrutiny by enforcement personnel.
13. Most ducted split systems and package systems are of the type that approved refrigerant charge verification procedures detailed in Residential Appendix RA3.2.2 or RA1 can be used (i.e., Standard Charge Verification procedures). Examples of systems that may not meet this description are "mini splits" or variable refrigerant flow systems that may only be charged using weigh-in procedures. Selecting "No" here may subject the project to additional scrutiny.
14. Specify the date the refrigerant charge verification was performed by the installer.
15. Select the refrigerant charge verification method used from the choices provided:
    - Superheat (outdoor temperature must be ≥ 55°F); this verification method can only be used when the outdoor temperature is at or above 55°F. It is only used on systems with fixed orifice refrigerant metering devices (non-variable metering devices). This method is detailed in Reference Appendix RA3.2.2.6.1. Systems verified using this method may be eligible for ECC verification compliance using Group Sampling.
    - Subcooling (outdoor temperature must be ≥ 55°F); this verification method can only be used when the outdoor temperature is at or above 55°F. It is only used on systems with variable metering devices (TXV or EXV). This method is detailed in Reference Appendix RA3.2.2.6.2. Systems verified using this method may be eligible for ECC verification compliance using Group Sampling.
    - Weigh-in; this verification method can be used at any outdoor temperature allowed by the equipment manufacturer. This method is detailed in Reference Appendix RA3.2.3. Systems verified using this method are NOT eligible for ECC verification compliance using Group Sampling.
    - New Package Unit Factory Charge; Choose this option when a new package unit is being installed that has an AHRI rating. This helps ensure that the unit was properly charged at the factory.
16. Identify who will be performing the verification that is documented on this Certificate of Installation, select from the two options.
17. The Group Sampling status is automatically displayed based on the input results of A15 and A16. Group Sampling procedures are detailed Residential Appendix RA2.6.3.

Section B1 and B2. Metering Device Verification

(This section is required if A15 equals Superheat – B1 Or Subcooling – B2)

1. Select the correct metering device used on the system being verified. This will check against the refrigerant charge verification method selected in A15. An error message will appear in B02 if the wrong verification method has been selected. Superheat verification can only be used on systems with fixed orifice and Subcool verification can only be used on systems with variable metering devices (TXV or EXV).
2. An error message here indicates that the wrong verification method may have been selected. Superheat verification can only be used on systems with fixed orifice and Subcool verification can only be used on systems with variable metering devices (TXV or EXV).

Section C. Instrument Calibration

(This section is required for all verification methods selected in A15 except New Package Unit Factory Charge)

1. Enter the date of most recent Digital Refrigerant Gauge Calibration Field Check. Analog gauges are not allowed for verification purposes under the 2025 Standards. Specification for pressure gauges is found in Residential Appendix RA3.2.2.2.3. Procedures for the field check procedure are detailed in RA3.2.2.4.2. Calibration field check must happen at least once every 30 days.
2. Enter the date of the most recent Digital Thermocouple Calibration. Specifications for thermocouples and temperature sensors can be found in Residential Appendix RA3.2.2.2.2. Procedures for calibration are detailed in RA3.2.2.4.1. Calibration must happen at least once every 30 days.
3. Digital Refrigerant Gauge Calibration status will appear automatically. If the date entered in C01 is more than 30 days prior to date of verification this row will indicate that calibration is required and you will not be allowed to continue filling out this document until calibration is performed.
4. Digital Thermocouple Calibration status will appear automatically. If the date entered in C02 is more than 30 days prior to date of verification this row will indicate that calibration is required and you will not be allowed to continue filling out this document until calibration is performed.

Section D. Measurement Access Hole (MAH) Verification

1. Indicate the method used to demonstrate compliance with the MAH requirement by selecting the appropriate method from the drop down list. Procedures for installing MAH's are detailed in RA3.2.2.3. Selecting that the MAH cannot be installed consistent with Figure 3.2-1 may result in additional scrutiny by enforcement personnel. For Weigh-in verification methods only If A12 = NO, then system is exempt from the MAH requirement and a special message will show up here.

Section E. Minimum System Airflow Rate Verification

1. This information is automatically calculated based on the information given in A10. This is the target minimum system airflow required for the system being verified.
2. This information is automatically calculated based on the MCH-23 or MCH-28, which documents the measured airflow (or alternative method) of the system being verified. If the measured airflow is not adequate it will not comply with the airflow requirements and refrigerant charge verification cannot be performed until the airflow meets the requirement. For Weigh-in verification methods only If A12 = NO, then system is exempt from the airflow rate requirement and a special message will show up here.

Section F1. Superheat Charge Verification Method – Data Collection

(This section is required if A15 equals Superheat)

1. Measure and record the lowest return air dry-bulb temperature that occurred during the refrigerant charge procedure in degrees F. This temperature must remain above 70°F during the verification procedure. This requirement is detailed in Residential Appendix RA3.2.2.5.
2. Measure and record the condenser air dry-bulb temperature ($T_{condenser}$) in degrees F. This value is used to determine the target superheat from table RA3.2-2. This value must be at least 55°F and no more than 115°F to use the Superheat Charge Verification Method.
3. If a value less than 55°F or greater than 115°F is entered in F02 the Superheat Method cannot be used.
4. Measure and record the return air dry-bulb temperature ($T_{return,db}$) in °F. This measurement is taken at the MAH (or alternate location specified in F01. This procedure is detailed in RA3.2.2.5.
5. Measure and record the return air wet-bulb temperature ($T_{return,wb}$) in °F. This measurement is taken at the MAH (or alternate location specified in F01. This procedure is detailed in RA3.2.2.5. This value is used to determine the target superheat from table RA3.2-2.
6. Measure and record the suction line temperature ($T_{suction}$) in °F. This procedure is detailed in RA3.2.2.5. This value is used to calculate the measured superheat.
7. Measure and record the suction line pressure ($P_{suction}$) in psig. This procedure is detailed in RA3.2.2.5. This value is used to determine the evaporator saturation temperature ($T_{evaporator,sat}$) from a pressure temperature chart for the appropriate refrigerant (can be internal to a digital gauge), which is entered into F08.
8. Enter the evaporator saturation temperature ($T_{evaporator,sat}$) from the digital gauge or a separate pressure-temperature chart that corresponds to the suction line pressure entered in F07, in °F.
9. Measured superheat is automatically calculated as the difference between the suction line temperature (F06) and the evaporator saturation temperature (F08)
10. Enter target superheat from Table RA3.2-2. This table requires values for the condenser air dry-bulb temperature (F02) and the return air wet-bulb temperature (F05)
11. System passes superheat method when F10 is within plus or minus 5°F of F09.

Section F2. Subcooling Charge Verification Method – Data Collection

(This section is required if A15 equals Subcooling)

1. Measure and record the lowest return air dry-bulb temperature that occurred during the refrigerant charge procedure in °F. This temperature must remain above 70°F during the verification procedure. This requirement is detailed in Residential Appendix RA3.2.2.5.
2. Measure and record the condenser air dry-bulb temperature ($T_{condenser}$) in °F. This value must be at least 55°F and no more than 115°F to use the Subcooling Charge Verification Method.
3. If a value less than 55°F or greater than 115°F is entered in F02 the Subcooling Method cannot be used.
4. Measure and record the liquid line temperature (T_{liquid}) in °F. This procedure is detailed in RA3.2.2.5. This value is used to calculate the measured subcool temperature.
5. Measure and record the liquid line pressure (P_{liquid}) in psig. This procedure is detailed in RA3.2.2.5. This value is used to determine the condenser saturation temperature ($T_{condenser,sat}$) from a pressure temperature chart for the appropriate refrigerant (can be internal to a digital gauge), which is entered into F06.
6. Enter the condenser saturation temperature ($T_{condenser,sat}$) from the digital gauge or a separate pressure-temperature chart that corresponds to the liquid line pressure entered in F05, in °F.
7. Measured Subcooling is automatically calculated as the difference between the liquid line temperature (F04) and the condenser saturation temperature (F06)

8. Enter target subcooling from manufacturer. This may be a challenge to find for older equipment. Internet searches can sometimes result in archived equipment specifications for the equipment in question, or sometimes a very similar model. If the manufacturer's target cannot be found the Commission's Executive Director may provide additional guidance for compliance.
9. System passes Subcooling method when F08 is within plus or minus 3°F of F07.

Section G. Metering Device Verification for Subcooling Method

(This section is required if A15 equals Subcooling)

1. Measure and record the suction line temperature ($T_{suction}$) in °F. This procedure is detailed in RA3.2.2.5. This value is used to calculate the measured superheat.
2. Measure and record the suction line pressure ($P_{suction}$) in psig. This procedure is detailed in RA3.2.2.5. This value is used to determine the evaporator saturation temperature ($T_{evaporator,sat}$) from a pressure temperature chart for the appropriate refrigerant (can be internal to a digital gauge), which is entered into G03.
3. Enter the evaporator saturation temperature ($T_{evaporator,sat}$) from the digital gauge or a separate pressure-temperature chart that corresponds to the suction line pressure entered in G02, in °F.
4. Measured superheat is automatically calculated as the difference between the suction line temperature (G01) and the evaporator saturation temperature (G03)
5. There are two possible criteria for passing. If the manufacturer's specification is known it should be used, otherwise the CEC requirement is that the superheat be between 4°F and 25°F, inclusive. This row checks the CEC requirement.
6. If the manufacturer's target superheat for ensuring proper metering device operation is known, it supersedes the CEC requirement of being between 4°F and 25°F. If "Yes, documentation to be provided upon request." is selected, the installer should be prepared to provide documentation for the target values used.
7. There are two possible criteria for passing. If the manufacturer's specification is known it should be used, otherwise the CEC requirement is that the superheat be between 4°F and 25°F, inclusive. If "Yes, documentation to be provided upon request." is selected in G06, the installer should be prepared to provide documentation for the target values used.

Section H. Weigh In Charge Procedure

(This section is required if A15 equals Weigh-in with installer Or Weigh-in with ECC Rater observation)

1. Measure and record the outside air dry-bulb temperature in °F. This will affect the procedures that may be used for ECC verification. If the installer opts to use the weigh-in method when the outside air dry-bulb temperature is above 55°F, ECC verification may only utilize the standard charge procedure (super heat or subcool) if the system is conducive to that procedure.
2. Specify the method of weigh-in. There are two options that may be used. One is to add or remove a small, weighed portion of refrigerant from a factory charged unit (Charge Adjustment). The other is to weigh the entire charge of refrigerant before introducing it into the system (Total Charge). Select either one. Note: The amount of refrigerant in systems that are not newly installed cannot be assumed to be the factory charge. Altered systems using existing refrigerant must use the Total Charge method. Only new, factory installed equipment can utilize the Charge Adjustment method.
3. Enter the Manufacturer's Standard Charge for condenser in pounds and ounces. This is the amount of refrigerant that the manufacturer specifies for a "standard" installation (typical coil match, typical line set size and length). For the Charge Adjustment method, this is the amount of refrigerant that factory charges the system to. Be prepared to provide manufacturer's documentation to support this value.

4. The Manufacturer's Standard Charge, specified in H03 is based on a standard liquid line length, typically 25 feet. Enter the value here, in feet. Be prepared to provide manufacturer's documentation to support this value.
5. The Manufacturer's Standard Charge, specified in H03 is based on a standard liquid line diameter. Enter the value here, in inches (for example: 1/4", 3/8", etc.). Be prepared to provide manufacturer's documentation to support this value.
6. The Manufacturer's Standard Charge, specified in H03 is based on a standard indoor (evaporator) coil size. Enter the value here, in tons. Be prepared to provide manufacturer's documentation to support this value.
7. Enter the length of the liquid line installed on the system being verified, in feet. This value must be compared to the standard liquid line length entered in H04 and used to determine if the Manufacturer's Standard Charge entered in H03 is appropriate.
8. Enter the diameter of the liquid line installed on the system being verified, in inches (for example: 1/4", 3/8", etc.). This value must be compared to the standard liquid line diameter entered in H05 and used to determine if the Manufacturer's Standard Charge entered in H03 is appropriate.
9. Enter the size of the indoor (evaporator) coil installed on the system being verified, in tons. This value must be compared to the standard coil size entered in H06 and used to determine if the Manufacturer's Standard Charge entered in H03 is appropriate.
10. Enter the Charge Adjustment to Standard Charge, in ounces. This is the amount of refrigerant that the manufacturer specifies to add to, or remove from, the Manufacturer's Standard Charge entered in H03. This value must come from manufacturer's specifications using the standard values entered in H04 through H06 to the installed values entered in H07 through H09. If refrigerant is to be added, this value should be a positive number. If refrigerant is to be removed, this value should be a negative number. Be prepared to provide manufacturer's documentation to support this value.
11. This value is calculated automatically. If "Charge Adjustment" was specified in H02, then the value shown here will be the same as the value shown in H10. This is the amount of weighed refrigerant that will be added or removed from the factory charged unit. If refrigerant is to be added, this value should be a positive number. If refrigerant is to be removed, this value should be a negative number. If "Total Charge" was specified in H02, then the value shown here will be the value in H03 added to the value in H10. This is the total amount of refrigerant that will be in the system, all of which must be weighed before introducing into the system.
12. Enter the amount of refrigerant weighed and added to, or removed from, system. If refrigerant is to be added, this value should be a positive number. If refrigerant is to be removed from a factory charged system, this value should be a negative number. This value must match the value in H11 for the system to pass.
13. If the value in H11 equals the value in H12, a statement will appear here indicating that the system passes the weigh-in method. Otherwise, a statement will appear here indicating that the system does not pass.

Section I. Weigh-In Charge Verification – Additional Requirements

(This section is required if A15 equals Weigh-in with installer Or Weigh-in with ECC Rater observation)

1. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. If refrigerant line connections require welding, the requirement for brazing lines charged with dry nitrogen is specified in Residential Appendix RA3.2.3.1.5.

2. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The requirement for checking refrigerant lines for leaks with nitrogen gas by pressurized to the manufacturer's specified pressure and if the pressure cannot be maintained, leaks shall be located and fixed is specified in Residential Appendix RA3.2.3.1.5.
3. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The requirement for checking refrigerant lines for leaks by evacuating to 500 microns or less and rising by no more than 300 microns after 5 minutes is specified in Residential Appendix RA3.2.3.1.5.
4. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. Observation and documentation of the vacuum and pressurization tests are not required if no fittings (other than the fitting to the compressor) are compression or flare fittings is specified in Residential Appendix RA3.2.3.1.5.
5. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The calculated weight adjustment for lineset length is based on the length and diameter of the lineset is specified in Residential Appendix RA3.2.3.1.5.
6. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The calculated weight adjustment for coil size is based on manufacturer instructions is specified in Residential Appendix RA3.2.3.1.5.
7. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The actual total weight adjustment is equal to the sum of the calculated weight adjustments for lineset and coil size is specified in Residential Appendix RA3.2.3.1.5.
8. Additional requirements are items that must be done, but are not specifically required to be checked by the ECC rater. By signing the Declaration Statement on this document, the installer is declaring that all of these additional requirements have been met. The calculated and actual total weights of refrigerant in the system are recorded on or near the nameplate label, in indelible ink or other permanent means is specified in Residential Appendix RA3.2.3.1.5.

Section J. Verification of New Package Unit Factory Charge

(This section is required if A15 is New Package Unit Factory Charge)

1. By signing the Declaration Statement at the bottom of this form, the installer is declaring that the package unit was an AHRI certified unit and that no modifications were made to the unit to change the factory charge.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of mechanical features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		02	Zip Code:	
03	Date of Permit Set used for construction:		04	Name of Permit Set used for construction:	
05	Authority Having Jurisdiction:		06	Building Permit #:	
07	Date of As-built Set:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01							
□	Dry System (Airside) Equipment	□	Ventilation (including DOAS, ERV and HRV)	□	System Controls	□	Ductwork
□	Boiler	□	Pumps	□	Terminal Box Controls	□	Piping
□	Chiller	□	Fans and Air Economizers	□	Heat Rejection Equipment (cooling towers, condensers, waterside economizers)	□	Electric Resistance Heating

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance form to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Dry System Equipment Schedule

01		02	03	04	05	06	07	08	09	10	11	12	13	14
Name or Item Tag		Model #	Equipment Type	Heating Mode					Cooling Mode					Equipment Compliance
				Rated Output (kBtu/h)	Supplemental Heating Output (kBtu/h)	Efficiency	Efficiency Unit	Refrigerant Loop Heat Recovery	Rated Output (kBtu/h)	Efficiency	Efficiency Unit	Efficiency	Efficiency Unit	
Per C of C														
As-built Conditions														

Dual Fuel Heat Pump Equipment Schedule

01		02	03	04	05	06	07	08	09	10	11	12	13
Name or Item Tag		Model #	Heating Mode				Cooling Mode						Equipment Compliance
			System Category	Size Category (Btu/h)	Efficiency	Efficiency Unit	System Category	Size Category (Btu/h)	Efficiency	Efficiency Unit	Efficiency	Efficiency Unit	
Per C of C													
As-built Conditions													

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DX DOAS Schedule

01		02	03	04	05	06	07	08	09	10
Name or Item Tag		Model #	Equipment Type	Energy Recovery	Rating Condition	Efficiency	Efficiency Unit	Efficiency	Efficiency Unit	Equipment Compliance
Per C of C							ISMRE		ISCOP	
As-built Conditions										

Boiler Efficiency and Controls

01		02	03	04	05	06	07	08	09	10	11
Tag/Plan Detail ID		Model #	Equipment Type	Quantity	Rated Input (Btu/h)	Rated Efficiency	Efficiency Unit	Controls		Hot Water Supply Temperature	Equipment Compliance
								Isolation Valve	Temperature Reset		
Per C of C											
As-built Conditions											

Chiller & Air to Water Heat Pump Efficiency and Controls

01		02	03	04	05	06	07	08	09	10	11	12
Tag/Plan Detail ID		Model #	Equipment Type	Quantity	Size (tons)	Rated Efficiency #1	Efficiency Unit #1	Rated Efficiency #2	Efficiency Unit #2	Controls		Equipment Compliance
										Isolation Valve	Temperature Reset	
Per C of C												
As-built Conditions												

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Mechanical Heat Recovery

01		02	03

Name or Item Tag		Simultaneous Mechanical Heat Recovery	Heat Recovery Systems Shall:
			- Transferring the lesser of the following from spaces in cooling to spaces in heating:
			  - 25% of the peak heat rejection of the cooling system
			  - 25% of design capacity of all service water heating systems + design capacity of all space heating systems
			- Heat or preheat the service water heating to the smaller of:
			  - 30% of the peak heat rejection of the cooling system; or
			  - 30% of design capacity of all service water heating systems

Per C of C			
As-built Conditions			

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

01		02	03	04	05	06	07	08	09	10	11	12
Tag/Plan Detail ID		Model #	Equipment Type	Quantity	Rated Performance	Performance Unit	Controls					Equipment Compliance
							Fan Speed Control	Tower Flow Turndown	Fan Control in Multiple Cell Equipment	Economizer Control	Condenser Water Temp. Reset	
Per C of C												
As-built Conditions												

Electric Resistance Heating

01		02	03	04	05
Name or Tag ID		Model #	Equipment Description	Output Capacity (kW)	Equipment Compliance
Per C of C					
As-built Conditions					

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Pumps

01		02	03	04	05	06	07	08	09
Name or Tag ID		Type	Quantity	Horsepower (HP)	Controls				Equipment Compliance
					Variable Flow Controls	Hydronic Heat Pump Isolation	VSD on Pumps > 5HP	Differential Pressure Sensor	
Per C of C									
As-built Conditions									

Fans and Air Economizers

01		02	03	04	05	06
Name or Tag ID		Quantity	Fan Function	Economizer	Fan Electrical Input Power (W)	System Compliance
Per C of C						
As-built Conditions						

Dedicated Outdoor Air System (DOAS)

01		02	03	04	05	06	07	08	09	10	11
System Name		Quantity	Delivered Directly To The Space	Fan System Power (kW)	Fan System Airflow (CFM)	Watts/CFM	DOAS Fan Control	Multi-Zone DOAS with Cooling	Economizer	Multifamily DOAS	System Compliance
Per C of C							>=3 speeds				
As-built Conditions											

Exhaust Air Heat Recovery

01	02	03	04	05	06	07
Fan System Name	Required?	Type of Heat Recovery Rating	Required Recovery Ratio	Installed Recovery Ratio	Energy Recovery Bypass	System Compliance

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Dwelling Unit Fan Efficacy & Energy/Heat Recovery

01		02	03	04	05	06	07
Fan System Name or Item Tag		System Airflow (cfm)	Input Power (kW)	Watts/CFM	Energy/Heat Recovery Ventilation	Sensible Recovery/Effectiveness	System Compliance
Per C of C							
As-built Conditions							

System Controls

01		02	03	04	05	06	07	08	09	10
System Name		Thermostats	Shut-Off Controls	Isolation Zone Controls	Demand Response	Supply Air Temp. Reset	Window Interlocks	Direct Digital Control (DDC)	Heat Pump Defrost	System Compliance
Per C of C										
As-built Conditions										

Nonresidential, Hotel/Motel and Multifamily Common Use Ventilation Systems

01	02	03	04
System Name	System Design OA CFM Airflow	System Design Transfer Air CFM	Air Filtration

05		06	07	08	09
Space Name		Exhaust Ventilation	Occupant Sensor Controls	Demand Control Ventilation	System Compliance
Per C of C					
As-built Conditions					

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Multifamily Dwelling Unit Ventilation Systems

01		02	03	04	05	06
Space Name		Supply Air CFM	Exhaust CFM	Local Exhaust	Air Filtration	Space Compliance
Per C of C						
As-built Conditions						

Terminal Box Controls

01		02	03	04	05	06	07	08	09
Zone/System/VAV Box Name or Item Tag		Zonal Control Strategy	Design				Reheated, Recooled, Mixed Air Compliance		
			Peak Primary Airflow CFM	Primary Air in Deadband CFM	Reheated Recooled Mixed Airflow CFM	Outside Air CFM	1st Stage Modulates <95°F and Maintains DB Rate?	2nd Stage Modulates from DB Flow to Heating Max Flow?	Zone/ Box/ System Compliance
Per C of C									
As-built Conditions									

Ducts

The following duct systems require duct leakage testing by a certified Mechanical Acceptance Test Technician or a HERS Rater.
Learn more about the Acceptance Testing Program on the Energy Commission website here: https://www.energy.ca.gov/programs-and-topics/programs/acceptance-test-technician-certification-provider-program.
Learn more about the ECC Program on the Energy Commission website here: https://www.energy.ca.gov/programs-and-topics/programs/energy-code-compliance-program.

01

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Pipe Insulation

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.

Insulation thickness (in) or R-value shall be per the following Title 24, Part 6 Table 120.3-A/ 160.3-D.

Fluid Operating Temperature Range (°F)	Insulation Conductivity			Nominal Pipe Diameter (in inches)				
	Conductivity (in Btu·in/h·ft²·°F)	Mean Rating Temperature (°F)		< 1	1 to <1.5	1.5 to < 4	4 to < 8	8 and larger
Space heating and Service Water Heating Systems (Steam, Steam Condensate, Refrigerant, Space Heating, Service Hot Water)				Minimum Pipe Insulation Required (Thickness in inches or R-value)				
Above 350	0.32-0.34	250	Inches	4.5	5.0	5.0	5.0	5.0
			R-value	R 37	R 41	R 37	R 27	R 23
251-350	0.29-0.32	200	Inches	3.0	4.0	4.5	4.5	4.5
			R-value	R 24	R 34	R 35	R 26	R 22
201-250	0.27-0.30	150	Inches	2.5	2.5	2.5	3.0	3.0
			R-value	R 21	R 20	R 17.5	R 17	R 14.5
141-200	0.25-0.29	125	Inches	1.5	1.5	2.0	2.0	2.0
			R-value	R 11.5	R 11	R 14	R 11	R 10
105-140	0.22-0.28	100	Inches	1.0	1.5	1.5	1.5	1.5
			R-value	R 7.7	R 12.5	R 11	R 9	R 8

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Fluid Operating Temperature Range (°F)	Insulation Conductivity			Nominal Pipe Diameter (in inches)								
	Conductivity (in Btu·in/h·ft2·°F)	Mean Rating Temperature (°F)		< 1		1 to <1.5		1.5 to < 4	4 to < 8	8 and larger
Space cooling systems (chilled water, refrigerant and brine)				**Minimum Pipe Insulation Required (Thickness in inches or R-value)[1]**						
40-60	0.21-0.27	75	Inches	Nonres 0.5	Res 0.75	Nonres 0.5	Res 0.75	1.0	1.0	1.0
			R-value	Nonres R 3	Res R 6	Nonres R 3	Res R 5	R 7	R 6	R 5
Below 40	0.20-0.26	50	Inches	1.0		1.5		1.5	1.5	1.5
			R-value	R 8.5		R 14		R 12	R 10	R 9

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

G. ACCEPTANCE TESTS & FIELD VERIFICATION

The following Acceptance Tests and ECC Verifications related to the systems or materials documented on this Certificate of Installation have been indicated on the permitted Certificate of Compliance as being required to comply with Title 24, Part 6.

Certificates of Acceptance

Mechanical Acceptance Tests must be completed by a certified Acceptance Testing Technician and Certificate of Acceptance forms completed through an approved Acceptance Test Technician Certification Provider database. The Certificate of Acceptance forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH-02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.	
NRCA-MCH-03-A - Must be submitted for Constant Volume Single Zone HVAC.	
NRCA-MCH-04-A - Must be submitted for Air Distribution Duct Leakage.	
NRCA-MCH-05-A - Must be submitted for Air Economizer, DOAS, HRV and ERV Controls.	
NRCA-MCH-06-A - Must be submitted for Demand Control Ventilation.	
NRCA-MCH-07-A - Must be submitted for Supply Fan Variable Flow Controls.	
NRCA-MCH-08-A - Must be submitted for Valve Leakage Test.	
NRCA-MCH-09-A - Must be submitted for Supply Water Temperature Reset Controls.	
NRCA-MCH-10-A - Must be submitted for Hydronic System Variable Flow Controls.	
NRCA-MCH-11-A - Must be submitted for Automatic Demand Shed Controls.	
NRCA-MCH-12-A-FDD-F - Must be submitted for Packaged Direct Expansion Units.	
NRCA-MCH-13-A-FDD - Must be submitted for Air Handling Units and Zone Terminal Units.	
NRCA-MCH-14-A - Must be submitted for Distributed Energy Storage DX-AC Systems.	
NRCA-MCH-15-A - Must be submitted for Thermal Energy Storage.	
NRCA-MCH-16-A - Must be submitted for Supply Air Temperature Reset Controls.	
NRCA-MCH-17-A - Must be submitted for Condenser Water.	
NRCA-MCH-18-A - Must be submitted for Energy Management Control Systems.	
NRCA-MCH-19-A - Must be submitted for Occupancy Sensor Controls.	
NRCA-MCH-20-H - Must be submitted for Multifamily Ventilation.	
NRCA-MCH-21-H - Must be submitted for Multifamily Envelope.	
NRCA-MCH-22-A - Must be submitted for Multifamily Duct Leakage.	
NRCA-MCH-23-A - Must be submitted for Multifamily HRV/ERV Verification.	
NRCA-MCH-24-A - Cooling Tower Conductivity Controls	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Certificates of Verification

ECC verifications must be completed by an ECC Rater and NRCV forms completed through an approved ECC Provider database. The Certificate of Verification forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCV-MCH-24 Enclosure Air Leakage Test	
NRCV-MCH-27 High-rise Residential	
NRCV-MCH-32 Local Mechanical Exhaust	
There are no ECC verifications indicated on the permitted Certificate of Compliance related to the systems or materials documented on this Certificate of Installation.	

A copy of this Certificate of Installation should be distributed to the certified Acceptance Test Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. This field is filled out automatically.
2. Enter the zip code of the construction project.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable equipment, systems and materials documented.

C. Compliance Results

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

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. Installer Notes

1. Enter any notes or comments for the AHJ.

F. INSTALLATION DETAILS

Dry System Equipment Schedule

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False.
4. Enter the heating mode Rated Output of the equipment in kBtu/h.
5. Enter the Supplemental Heating Output of the equipment in kBtu/h.
6. Enter the efficiency of the equipment while in heating mode.
7. This field is filled out automatically.
8. Enter the cooling mode Rated Output of the equipment in kBtu/h.
9. Enter the efficiency of the equipment while in cooling mode.

10. This field is filled out automatically.
11. If a second efficiency is required, enter the efficiency of the equipment while in cooling mode.
12. This field is filled out automatically.
13. This field is calculated automatically.

Heat Pump Equipment Schedule

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False.
4. Select: True or False.
5. Enter the efficiency of the heat pump while in heating mode.
6. This field is filled out automatically.
7. Select: True or False.
8. Select: True or False.
9. Enter the efficiency of the heat pump while in cooling mode.
10. This field is filled out automatically.
11. If a second efficiency is required, enter the efficiency of the heat pump while in cooling mode.
12. This field is filled out automatically.
13. This field is calculated automatically.

DX DOAS Schedule

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False.
4. Select: True or False.
5. Select: True or False.
6. Enter the ISMRE efficiency of the DOAS equipment.
7. This field is static text showing the efficiency unit is ISMRE.
8. Enter the ISCOP efficiency of the DOAS equipment.
9. This field is static text showing the efficiency unit is ISCOP.
10. This field is calculated automatically.

Boiler

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False.
4. Enter the quantity of identical equipment being installed.
5. Enter the Rated Input of the boiler in Btu/h.
6. Enter the Rated Efficiency of the equipment.
7. This field is automatically filled out.
8. Isolation Valve: Select from Dropdown.
9. Temperature Reset Controls: Select from Dropdown.
10. This field is calculated automatically.

Chiller

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False.
4. Enter the quantity of identical equipment being installed.
5. Select: True or False.
6. Enter the efficiency while in cooling mode.
7. This field is filled out automatically.
8. If a second efficiency is required, enter the efficiency while in cooling mode.
9. This field is filled out automatically.
10. Isolation Valve: Select from Dropdown.
11. Temperature Reset Controls: Select from Dropdown.
12. This field is calculated automatically.

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

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. Select: True or False
4. Enter the quantity of identical equipment being installed.
5. Enter the Rated Performance of the equipment being installed.
6. This field is filled out automatically.

7. Fan Speed Control: Select from Dropdown.
8. Tower Flow Turndown: Select from Dropdown.
9. Fan Control in Multiple Cell Equipment: Select from Dropdown.
10. Economizer Control: Select from Dropdown.
11. Condenser Water Temperature Reset: Select from Dropdown.
12. This field is calculated automatically.

Electric Resistance Heating

1. This field is filled out automatically.
2. Enter the model # of the equipment being installed.
3. This field is filled out automatically.
4. Enter the Output Capacity in kW.
5. This field is calculated automatically.

Pumps

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Enter the quantity of identical equipment being installed.
4. Enter the Horsepower of the pump.
5. Variable Flow Controls: Select from Dropdown.
6. Hydronic Heat Pump Isolation Control: Select from Dropdown.
7. Variable Speed Drive on pumps greater than 5 horsepower: Select from Dropdown.
8. Differential Pressure Sensor Control: Select from Dropdown.
9. This field is calculated automatically.

Fans and Air Economizers

1. This field is filled out automatically.
2. Enter the quantity of identical equipment being installed.
3. Fan Function: Select from Dropdown.
4. Economizer: Select from Dropdown.
5. Enter the Electrical Input Power of the fan in Watts.
6. This field is calculated automatically.

Dedicated Outdoor Air Systems (DOAS)

1. This field is filled out automatically.
2. Enter the quantity of identical equipment being installed.
3. Delivered Directly to the Space: Select from Dropdown.
4. Enter the fan system power in kilowatts.
5. Enter the fan system airflow in cubic feet per minute.
6. This field is calculated automatically.
7. This field is static text that says less than or equal to 3 speeds.
8. Multizone DOAS with cooling: Select from Dropdown.
9. Select: Yes or No.
10. Multifamily DOAS: Select from Dropdown.
11. This field is calculated automatically.

System Controls

1. This field is filled out automatically.
2. Thermostat Controls: Select from Dropdown.
3. Shut-off Controls: Select from Dropdown.
4. Isolation Zone Controls: Select from Dropdown.
5. Demand Response Controls: Select from Dropdown.
6. Supply Air Temperature Reset Controls: Select from Dropdown.
7. Window Interlock Controls: Select from Dropdown.
8. Direct Digital Controls: Select from Dropdown.
9. This field is calculated automatically.

Nonresidential, Hotel/Motel and Multifamily Common User Ventilation Systems

1. This field is filled out automatically.
2. Enter System Designed Outside Air Airflow in cubic feet per minute.
3. Enter System Designed Transfer Air Airflow in cubic feet per minute.
4. Air Filtration: Select from Dropdown.
5. This field is filled out automatically.
6. Enter Exhaust Ventilation for the space.
7. Occupant Sensor Controls: Select from Dropdown.
8. Demand Control Ventilation: Select from Dropdown.

9. This field is calculated automatically.

Multifamily Dwelling Unit Ventilation Systems

1. This field is filled out automatically.
2. Enter System Designed Outside Air Airflow in cubic feet per minute.
3. Enter System Designed Supply Air Airflow in cubic feet per minute.
4. Enter Exhaust Air Airflow in cubic feet per minute.
5. Local Exhaust: Select from Dropdown.
6. Air Filtration: Select from Dropdown.
7. This field is calculated automatically.

Terminal Box Controls

1. This field is filled out automatically.
2. Zonal Control Strategy: Select from Dropdown.
3. Enter the Peak Primary Airflow for the zone or system in cubic feet per minute.
4. Enter the Primary Air in Deadband Airflow for the zone or system in cubic feet per minute.
5. Enter the Reheated, Recooled or Mixed Airflow for the zone or system in cubic feet per minute.
6. Enter the Outside Air Airflow for the zone or system in cubic feet per minute.
7. Confirm the first stage modulates and maintains the drybulb rate.
8. Confirm the second stage modulates from drybulb flow to heating max flow.
9. This field is calculated automatically.

Ducts

1. This field is filled out automatically.

Pipe Insulation

1. This table includes required pipe insulation values from Part 6 and does not require user entry.

G. Acceptance Tests and Field Verification

1. This field is filled out automatically.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of service water heating features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01		02		03		04	
□	Water Heating Equipment	□	Distribution (piping, valves, insulation, etc.)	□	Controls	□	Pool/Spa

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Domestic Hot Water Equipment Efficiency

01	02	03	04	05	06	07	08	11
Name or Item Tag	Model #	Space Type	Equipment Type	Volume (gal)	Rated Input Capacity (Btu/h)	Capacity Unit	Rated Efficiency	DHW Equipment Compliance
Per C of C								
As-built Conditions								

Domestic Hot Water Equipment Additional Requirements

The following requirements have been included on the permitted Certificate of Compliance (NRCC) to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

System Name:	
Unfired storage tank insulation shall have Internal + External ≥ R-16 OR External ≥ R-12. Label required per Title 24, Part 6 §110.3(c)3	
Isolation valves installed for instantaneous water heater with input rating > 6.8 kBTUH or 2 kW per Title 24, Part 6 §110.3(c)6.	
Backup heat is required when inlet air is unconditioned unless the compressor cut-off temperature is below the Heating Winter Median of Extremes for the closest location listed in Table 2-3 from Reference Joint Appendix JA2.	
Consumer integrated HPWHs shall meet the following requirement:	
The primary storage tank temperature setpoint shall be at least 135°F - §170.2(d)2Aiv	
The minimum heat pump water heater compressor cut-off temperature shall be equal to or lower than 40°F ambient air temperature	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Electric Ready Requirements

System Name:	

A condensate drain that is no more than 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance

A ventilation method meeting one of the following:
- The designated space for the future heat pump water heater shall have a minimum volume of 700 cubic feet; or
- The designated space for the future heat pump water heater shall vent to a communicating space in the same pressure boundary via permanent openings with a minimum total NFA of 250 square inches., so that the total combined volume connected via permanent openings is 700 cubic feet or larger. The permanent openings shall be:
  - Fully louvered doors with fixed louvers; or
  - Two permanent fixed openings located within 12 inches from the enclosure top and bottom;
- The designated space for the future heat pump water heater shall include two 8 inches capped ducts, venting to the building exterior:
  - All ducts, connections, and building penetrations shall be sealed.
  - Exhaust air ducts and all ducts which cross pressure boundaries shall be insulated to a minimum insulation level of R-6.
  - Airflow from termination points shall be diverted away from each other.

Space shall be reserved for a Heat Pump. The minimum space reserved shall include space for service clearances and air flow clearances and shall meet one of the following:
- The space reserved shall be the space required for a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project; or
- The space reserved shall meet the requirements specified in Joint Appendix JA15.2.1.

Space shall be reserved for Tanks. The minimum space reserved shall include space for service clearances and shall meet one of the following:
- The space reserved shall be the space required for a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project; or
- The space reserved shall meet the requirements specified in Joint Appendix JA15.2.2.

Ventilation shall be provided by meeting one of the following:
- Physical space reserved for the heat pump shall be located outside; or
- A pathway shall be reserved for future routing of supply and exhaust air via ductwork from the reserved heat pump location to a suitable outdoor location. Penetrations through the building envelope for louvers and ducts shall be planned and identified for future use. The reserved pathway and penetrations through the building envelope shall be sized to meet one of the following:
  - The reserved pathway and penetrations shall be sized to serve a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
  - The reserved pathway and penetrations shall be sized to meet the requirements specified in Joint Appendix JA15.2.3.

Condensate drainage piping. An approved receptacle that is sized per the California Plumbing Code for condensate drainage shall be installed within 3 feet of the reserved heat pump location, or piping shall be installed from within 3 feet of the reserved heat pump location to an approved discharge location that is sized in accordance with the California Plumbing Code, and meet one of the following:
- Condensate drainage shall be sized to serve a heat pump water heater system that meets the total building hot water demand as calculated and documented by the responsible person associated with the project.
- Condensate drainage piping shall be sized to meet the requirements specified in Joint Appendix JA15.2.4.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOMESTIC HOT WATER DISTRIBUTION REQUIREMENTS

The following requirements have been included on the permitted Certificate of Compliance to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

Recirculation Loops in Central Systems Serving Dwelling Units or Nonresidential Spaces

System Name:	
Automatic air release valve no more than 4 feet from pump or vertical pump installation	
Check valve or similar located between recirculation pump and water heating equipment to prevent backflow	
Hose bibb installed between pump and equipment and isolation valve between hose bibb and equipment	
Isolation valves on both sides of the pump	
Cold water and recirculation loop piping is not connected to the hot water storage tank drain port	
Check valve is installed on cold water supply between hot water system and next closest tee on cold water supply	
DWELLING UNITS ONLY: For heat pump water heating systems, the hot water return from the recirculation loop shall connect to a recirculation loop tank and shall not directly connect to the primary heat pump water heater inlet or the primary thermal storage tanks per §170.2(d)2Aii.	
DWELLING UNITS ONLY: For heat pump water heating systems, the fuel source for the recirculation loop tank shall be electricity per §170.2(d)2Aiii.	
DWELLING UNITS ONLY: The recirculation loop tank temperature setpoint shall be at least 10°F lower than the primary thermal storage tank temperature setpoint - §170.2(d)2Av	
DWELLING UNITS ONLY: All hot water distribution piping shall be sized in accordance with the California Plumbing Code Appendix M per §170.2(d)2C.	
DWELLING UNITS ONLY: A recirculation system with mechanical or digital thermostatic master mixing valve on each distribution supply and return loop and meet the requirements in Reference Appendix RA4.4, unless building has ≤ 8 dwelling units	

Distribution of Individual System(s) serving Dwelling Units

System Name:	
Single 240-volt heat pump water heaters serving dwelling units must also include systems with:	
	- Compact hot water distribution system as specified in Reference Appendix RA4.4.16 in climate zone 1 & 16; AND
	- A drain water heat recovery system that is field verified by an ECC Rater per Reference Appendix RA3.6.9 in climate zone 16.
A drain water heat recovery system that is field verified by an ECC Rater per Reference Appendix RA3.6.9 in climate zone 16.	
For recirculation distribution systems serving individual dwelling units, only Demand Recirculation Systems with manual on/off control as specified in the Reference Appendix RA4.4.9 shall be used.	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Mandatory Pipe Insulation Requirements

System Name:	

For systems serving dwelling units and common areas, pipe insulation must meet the minimum insulation requirements in Table 160.4-A (see below) except:

- Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall abut securely against all framing members.
- Piping installed in interior or exterior walls shall not be required to have pipe insulation if all of the requirements are met for compliance with Quality Insulation Installation (QII) as specified in the Reference Residential Appendix RA3.5.
- Piping surrounded with a minimum of 1 inch of wall insulation, 2 inches of crawlspace insulation, or 4 inches of attic insulation, shall not be required to have pipe insulation.

For systems serving nonresidential spaces, pipe insulation for the following applications must comply with the following:

- Recirculating system piping, including supply and return piping of the water heater
- The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system
- Pipes that are externally heated

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 per §120.3(b)/ §160.4(f). Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Domestic Hot Water System Controls

The following requirements have been included on the permitted Certificate of Compliance to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

Manufacturers must certify that service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use as listed in Table 3, Chapter 50 of the ASHRAE Handbook, HVAC Applications Volume or Table 613.1 of the California Plumbing Code for healthcare facilities.
On systems that have a total capacity greater than 167,000 Btu/hr, outlets that require higher than service water temperatures as listed- in the ASHRAE Handbook, Applications Volume, shall have separate remote heaters, heat exchangers, or boosters to supply the outlet with the higher temperature unless covered by California Plumbing Code Section 613.0.
Controls for circulating pumps or electrical heat trace systems are capable of automatically turning off the system unless system serves healthcare facility.
For recirculation systems serving multiple dwelling units, design includes a mechanical or digital thermostatic master mixing valve on each distribution supply and return loop per §170.2(d), or §180.1(b)3 for additions or alterations.
For recirculation systems serving individual dwelling units, design includes manual on/off controls as specified in Reference Appendix RA 4.4.9 per §150.1(c)8 §170.2(d).
Combustion air positive shut-off shall be provided per §160.4(e) on all newly installed commercial boilers as follows: - Boiler with input capacity >= 2.5 MMBtu/h, in which the boiler is designed to operate with a nonpositive vent static pressure - Boilers where one stack serves two or more boilers with a total combined input capacity per stack of 2.5 MMBtu/h.
Boiler combustion air fans with motors >= 10 hp shall meet one of the following for newly installed boilers: - The fan motor shall be driven by a variable speed drive OR - The fan motor shall include controls that limit the fan motor demand to <= 30% of the total design wattage at 50% of the design air volume.
Newly installed boilers with an input capacity >= 5 MMbtu/h and a steady state full-load combustion efficiency < 90% shall maintain excess (stack-gas) oxygen concentrations <= 5% by volume on a dry basis over firing rates of 20-100%. Combustion air volume shall be controlled with respect to firing rate or flue gas oxygen concentration. Use of a common gas and combustion air control linkage or jack shaft is prohibited.

Pool & Spa

01		02	03	04	05	06	07	08	09	10
Pool/ Spa Description		Pool/Spa Service Type	On/Off Control	Instructions	Covers	Electric Resistance Heating Equipment	Heating Source Sizing	Piping	Pool Directional Inlets & Pump Control	Compliance
Per C of C										
As-built Conditions										

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Additional Requirements For Pool/ Spa Serving One Tenant §150.0(P)

Pool/Spa Description:	
Dedicated-purpose pool pumps and replacement dedicated-purpose pump motors subject to State or Federal appliance standards shall be listed in the Commission's directory of certified equipment. - Dedicated-purpose pool pumps shall meet 20 CCR § 1605.1(g)(7) of the Appliance Efficiency Regulations. - Replacement dedicated-purpose pool pumpmotors shall meet 20 CCR § 1605.3 of the Appliance Efficiency Regulations.	
Filtration pumps shall be sized, or if programmable, shall be programmed, so that the filtration flow rate is not greater than the rate needed to turn over the pool water volume in 6 hours or 36 gpm, whichever is greater.	
Dedicated-purpose pool pumps with more than one speed shall have: - Controls that default to the filtration flow rate when no auxilary pool loads are operating, and; - Controls that default to the filtration flow rate setting within 24 hours and shall have an override capability for servicing.	
System Piping must meet the following requirements: - A length of straight pipe that is greater than or equal to at least 4 pipe diameters shall be installed before the pump; and - Pool piping shall be sized so that the velocity of the water at maximum flow for auxiliary pool loads does not exceed 8 feet per second in the return line and 6 feet per second in the suction line; and - All elbows shall be sweep elbows or of an elbow-type that has a pressure drop of less than the pressure drop of straight pipe with a length of 30 pipe diameters.	
Filters shall be at least the size specified in NSF/ANSI 50 for public pool intended applications.	
Minimum diameter of backwash valves shall be 2 inches or the diameter of the return pipe, whichever is greater.	

G. ACCEPTANCE TESTS & FIELD VERIFICATION

The following Acceptance Tests and ECC Verifications related to the systems or materials documented on this Certificate of Installation have been indicated on the permitted Certificate of Compliance as being required to comply with Title 24, Part 6.

Certificates of Acceptance

There are no Certificates of Acceptance applicable to service water heating requirements.

Certificates of Verification

There are no Certificates of Verification applicable to service water heating requirements.

A copy of this Certificate of Installation should be distributed to the Field Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. This field is filled out automatically with data from the NRCC.
2. This field is filled out automatically with data from the NRCC.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select water heating equipment if applicable.
2. Select distribution (piping, valves, insulation, etc.) if applicable.
3. Select controls if applicable.

C. Compliance Results

This table is automatically filled with uneditable comments based on data entered in Section F.

D. Exceptional Conditions

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

E. Additional Remarks

Enter any notes or comments for the AHJ.

F. Installation Details

Domestic Hot Water Equipment Efficiency

1. This field is filled out automatically.
2. Enter the Model # of the equipment installed.
3. Individual or Central System: Select from dropdown.
4. Equipment Type: Select from dropdown.
5. Enter the Volume (gal) of the equipment installed.
6. Enter the Rated Input Capacity (Btu/h) of the equipment installed.
7. Enter the Capacity Unit of the equipment installed.

8. Enter the Rated Efficiency of the equipment installed.
9. This field is filled out automatically.
10. This field is automatically calculated.
11. This field is filled out automatically.

Domestic Hot Water Equipment Requirements

1. This table covers the requirements for domestic hot water equipment.

Electric Ready Requirements

1. This table covers the requirements for Electric Ready.

Domestic Hot Water Distribution Additional Requirements

1. This table covers the additional requirements for domestic hot water distribution.

Distribution of Individual System(s) serving Dwelling Units

1. This table covers the requirements for Distribution of Individual System(s) serving Dwelling Units.

Mandatory Pipe Insulation Requirements

1. This table covers the requirements for Mandatory Pipe Insulation Requirements.

Domestic Hot Water System Controls

1. This table covers the requirements for domestic hot water system controls.

Pool & Spa

1. This table covers the requirements for Pool & Spa.

Additional Requirements For Pool/Spa Serving One Tenant §150.0(P)

1. This table covers the additional requirements for Pool/Spa Serving One Tenant.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-PRC-E

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of service water heating features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

	01				
Electrical					
□	Elevator Lighting	□	Escalator and Moving Walkways Controls		
HVAC					
□	Refrigerated Spaces Underslab Heating	□	Parking Garage Exhaust	□	Elevator Ventilation Controls
□	Computer Rooms	□	Commercial Kitchen Ventilation	□	Laboratory/Factory Exhaust & Fume Hood
Insulation					
□	Refrigerated Spaces Exterior Insulation				
Plumbing					
□	Process Boilers	□	Compressed Air Systems		
Refrigeration					
□	Food/Beverage Stores >= 8,000 ft^2	□	Refrigerated Space >= 3,000 ft^2 Fan Powered Evaporators	□	Refrigerated Space >= 3,000 ft^2 Condensers
□	Refrigerated Space >= 3,000 ft^2 Compressors	□	Refrigerated Space >= 3,000 ft^2 Infiltration Barriers	□	Refrigerated Space >= 3,000 ft^2 Transcritical CO_2 Fan-powered Gas Coolers (new only)
□	Pipe Insulation				
Specialty					
□	Commercial Kitchen Hood	□	Escalator and Moving Walkways Controls		
□	Controlled Environment Horticulture Lighting	□	New Steam Traps		

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance form to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Refrigerated Warehouse/Space Fan Powered Evaporators

01	02	03	04	05	06	07
Name or Item Tag	Model #	Motor HP	Phase	Type or Efficiency	Fan Controls	Evaporator Compliance
Per NRCC						
As-built Conditions						

Refrigerated Warehouse/Space Condensers (Air-cooled, Water-cooled, Evaporative-cooled, Adiabatic)

01	02	03	04	05	06	07	08
Name or Item Tag	Model #	Condenser Location	Temp Setpoint Controls	Variable Speed Control	Refrigerant Type	Efficiency (Btuh/W)	Condenser Compliance
Per NRCC							
As-built Conditions							

Refrigerated Warehouse/Space Compressors

01	02	03	04	05	06
Name or Item Tag	Model #	Condensing Temp	Variable Speed Control	Variable Volume Ratio	Compressor Compliance
Per NRCC					
As-built Conditions					

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Refrigerated Warehouse/Space Infiltration Barriers and Automatic Door Closers

01	02	03	04
Room ID/ Description	Infiltration Barrier	Door Closure	Infiltration Barrier Compliance

[1] *FOOTNOTE: Infiltration barriers include strip curtains, automatically closing door, or an air curtain designed by the manufacturer*

Transcritical CO_2 Fan-powered Gas Coolers

01	02	03	04	05	06
Name or Item Tag	Variable Speed Control	Gas Cooler Pressure Controls	Design Condensing Temperatures	Efficiency (Btuh/W)	Compliance
Per NRCC	Variable speed fan(s) provided controlled per §120.6(a)8D	Condensing temp reset per §120.6(a)4F and cooler pressure setpoint maximizes efficiency			
As-built Conditions					

Mandatory Pipe Insulation All Occupancies

1		2	3
System Name		Pipe Insulation Applications	Pipe Insulation Protection
Per NRCC		For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A1 or or Table 120.3-A2 (see below) - Recirculating system piping, including supply and return piping of the water heater - The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system - Pipes that are externally heated	Pipe and appurtenance insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Protection shall include: - Insulation exposed to weather shall be installed with a cover suitable for outdoor service - Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve. - Pipe insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall include, or be protected by, a Class I or Class II vapor retarder. All penetrations and joints shall be sealed.
As-built			

Refrigerated Warehouse/Space Exterior Surface Insulation

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

01	□	Exterior surfaces of refrigerated warehouses/spaces are insulated at least to the R-values in TABLE 120.6-A-1 (see below).

TABLE 120.6-A REFRIGERATED WAREHOUSE/SPACE INSULATION

02	03	04	05
Space	Surface	Minimum R-Value	Insulation Compliance
Freezers	Roof/ Ceiling	40	
	Wall	36	
	Floor	35	
	Floor with all heating from productive refrigeration capacity[1]	20	
Coolers	Roof/ Ceiling	28	
	Wall	28	

[1] *FOOTNOTE: All underslab heating is provided by a heat exchanger that provides refrigerant subcooling or other means that result in productive refrigeration capacity on the associated refrigerated system.*

Refrigerated Warehouse/Space Underslab Heating

01	02	03
Room ID/ Description	Compliance Method	Underslab Heating Compliance
Per NRCC		
As-built Conditions		

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Condensers Serving Commercial Refrigeration System

- *The following requirements have been included on the permitted Certificate of Compliance (NRCC) to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.*
- *The project includes replacement condensers that meet the following conditions:*
  - *attached compressor system Total Heat of Rejection does not increase and;*
  - *less than 25 percent of both the attached compressors and the attached display cases are new.*
- *All equipment, appliances and components serving the refrigeration system have been certified by the Energy Commission as compliant with Title 20 and listed in the Modernized Appliance Efficiency Database System found at https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx.1*

01	02	03	04	05	06	07
Name or Item Tag	Condenser Type	Variable Speed Control	Temp Setpoint Controls	Specific Efficiency (Btuh/W)	Fin Density	Condenser Compliance
Per NRCC						
As-built Conditions						

Compressors and Condensing Units Serving Commercial Refrigeration System

01	02	03
Name or Item Tag	Saturation suction temperature control (SST)	Condenser Compliance
Per NRCC		
As-built Conditions		

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Refrigerated Display Cases

01			02
Lighting Controls for Refrigerated Display Cases & Illuminated Glass Doors of Walk-in Coolers/ Freezers			Refrigerated Display Case Compliance
Per NRCC			
As-built Conditions	□	*Timeclock: Turn off lighting power automatically during non-business hours*	
	□	*Motion Sensor: Reduce lighting power by at least 50% within 30 minutes after the nearby area is vacated*	

Heat Recovery of Refrigeration System

Per NRCC	
As-built Conditions	

Transcritical CO_2 Fan-powered Gas Coolers

01	02	03	04	05	06
Name or Item Tag	Variable Speed Control	Gas Cooler Pressure Controls	Design Condensing Temperatures	Efficiency (Btuh/W)	Compliance
Per NRCC	Variable speed fan(s) provided controlled per §120.6(b)5D	Condensing temp reset per §120.6(b)1A and cooler pressure setpoint maximizes efficiency			
As-built Conditions					

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Mandatory Pipe Insulation All Occupancies

01		02	03
System Name		Pipe Insulation Applications	Pipe Insulation Protection
Per NRCC		For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A1 or or Table 120.3-A2 (see below) - Recirculating system piping, including supply and return piping of the water heater - The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system - Pipes that are externally heated	Pipe and appurtenance insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Protection shall include: - Insulation exposed to weather shall be installed with a cover suitable for outdoor service - Pipe insulation buried below grade must be installed in a water proof and non-crushable casing or sleeve. - Pipe insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space shall include, or be protected by, a Class I or Class II vapor retarder. All penetrations and joints shall be sealed.
As-built			

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Enclosed Parking Garage Exhaust Controls

	Per C of C	As-built	Exceptions
01	□	□	Garage is expected to have vehicles with non-gasoline combustion engines for > 20% of the parked vehicles per Exception 1 to §120.6(c)
02	□	□	Project scope includes an addition or alteration to an existing garage where < 10,000 cfm of new exhaust capacity is being added Exception 2 to §120.6(c)
			Requirements
03	□	□	Exhaust fan control modulates airflow rates <= 50% design capacity when contaminant levels are maintained per §120.6(c)1
04	□	□	Fan control or device allows fan motor demand ≤ 30% design wattages at 50% of design airflow per §120.6(c)2
05	□	□	Design includes monitoring CO with a sensor density >= 1 per 5,000 ft2 per §120.6(c)3
06	□	□	CO sensors are located in the highest expected concentration locations, with at least two per proximity zone per §120.6(c)3
07	□	□	Design CO sensor setpoint <= 25 ppm per §120.6(c)4
08	□	□	Occupied garage design maintains negative pressurization per §120.6(c)6
09	□	□	Designed occupied total ventilation rate >= 0.15 CFM/ ft^2 §120.6(c)5

CO Sensors shall be:

A. Certified by the manufacturer to be accurate within plus or minus 5% of measurement.

B. Factory calibrated

C. Certified by the manufacturer to drift no more than 5% per year.

D. Certified by the manufacturer to require calibration no more frequently than once a year.

E. Monitored by a control system. The system shall have logic that automatically checks for sensor failure by the following means. Upon detection of a failure, the system shall reset to design ventilation rates and transmit an alarm to the facility operators.

i. If any sensor has not been calibrated according to the manufacturer's recommendations within the specified calibration period, the sensor has failed.

ii. During unoccupied periods the system compares the readings of all sensors, e.g., if any sensor is more than ppm above or below the average of all sensors for longer than 4 hrs, the sensor has failed.

iii. During unoccupied periods the system compares the readings of sensor in the same proximity zone, e.g. if the 30 minute rolling average for any sensor in a proximity zone is more than 15 ppm above or below the 30 minute rolling average for other sensor(s) in that proximity zone, the sensor has failed.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Enclosed Parking Garage Exhaust

01	02	03	04
Fan Name or Item Tag	Parking Garage Area (ft2)	Ventilation Fan Rate (CFM)	Exhaust Compliance
Per C of C			
As-built Conditions			

Process Boilers

01	02	03	04	05	06	07
Name or Item Tag	Model #	Rated Input Capacity per Boiler (Btu/h)	Fan Controls	Combustion Air Shutoff	Stack Design and Controls	Process Boiler Compliance
Per NRCC						
As-built Conditions						

Compressed Air Systems

01	02	03	04	05	06	07
System Name/ Description	Model #	Trim Compressor	Controls	Monitoring	Service Line Size[1]	Compressed Air Compliance
Per NRCC						
As-built Conditions						

[1] *FOOTNOTE: Service line piping are pipes that deliver compressed air from distribution piping to end uses.*

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Elevator Lighting and Ventilation

Lighting

01	02	03	04	05	06
Elevator Name or Item Tag	Fixture Name or Item Tag	Number of Fixtures	Watts per Fixture	Total Power	Elevator Lighting Compliance
Per C of C					
As-built Conditions					

Ventilation

07	08	09	10	11	12
Name or Item Tag	Fan Power (Watts)	Airflow (CFM)	Watts per CFM	Controls	Elevator Ventilation Compliance
Per C of C					
As-built Conditions					

Escalators and Moving Walkway Speed Controls

The following requirements have been included on the permitted Certificate of Compliance (NRCC) to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

Escalators and moving walkways located in airports, hotels, and transportation function areas shall automatically slow to the minimum permitted speed in accordance with ASME A17.1/CSA B44 when not conveying passengers.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Computer Room Systems

01	02	03	04	05	06	07	08	09
Computer Room Name/ID	Economizer	Reheat Controls	Humidification	Sensible Cooling Capacity (kBtuh)	Total Fan System Power (Watts)	Fan Controls	Containment	Computer Room Compliance
Per NRCC								
As-built Conditions								

Computer Room Uninterruptible Power Supply (UPS)

01	02	03	04	05	06
Computer Room Name/ID	Alternating Current Output UPS Compliance Method	Type of UPS	UPS Rated Output Power (W)	Efficiency	Compliance
Per NRCC					
As-built Conditions					

Commercial Kitchen Exhaust & Ventilation

Kitchen Ventilation

The following ventilation requirements have been included on the permitted Certificate of Compliance to comply with Title 24, Part 6. Installed equipment shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

Providing replacement air directly to the hood(s) that does not exceed 10% of the hood(s) exhaust rate.
Not providing replacement air directly to the hood(s).
Mechanically cooled or heated makeup air delivered to any space with a kitchen hood does not exceed the supply flow required to meet the space heating and cooling load.
Mechanically cooled or heated makeup air delivered to any space with a kitchen hood does not exceed the hood exhaust flow minus the available transfer air from adjacent spaces.
The kitchen /dining facility has a total Type I and Type II kitchen hood exhaust airflow rate > 5000 cfm and at least 50% of all replacement air is transferred air that would otherwise be exhausted.
The kitchen /dining facility has a total Type I and Type II kitchen hood exhaust airflow rate > 5000 cfm and demand ventilation system(s) on at least 75% of the exhaust air.
The kitchen /dining facility has a total Type I and Type II kitchen hood exhaust airflow rate > 5000 cfm and listed energy recovery devices with a sensible heat recovery effectiveness of > 40 on at least 50% of the total exhaust airflow.
The kitchen /dining facility has a total Type I and Type II kitchen hood exhaust airflow rate > 5000 cfm and a minimum of 75% of makeup air volume having a total of no more than 60°F and uncooled or cooled without the use of mechanical cooling.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Kitchen Hood

01	02	03	04	05	06	07
Name or Item Tag	Hood Type	Hood Style	Equipment Duty	Hood Length (ft)	Hood Exhaust Rate (CFM)	Kitchen Exhaust Compliance
Per C of C						
As-built Conditions						

Electric Ready Commercial Kitchens

1		2	3
System Name		Dedicated Branch Wiring	Electrical Panel Sizing
Per NRCC		Includes a dedicated branch circuit wiring and outlet accessible to cookline appliances and meets the following requirements: a) The branch circuit conductors shall be rated at 50 amps minimum. b) The electrical service panel shall have a minimum capacity of 800 connected amps.	The electrical service panel shall be sized to accommodate an additional either 208v or 240v 50-amp breaker.
As-built			

Laboratory And Factory Exhaust and Fume Hoods

01	02	03	04	05	06	07
Zone/System or Item Tag	Airflow Reduction	Transfer Air	Exhaust Fan Power	Hood Sash Closure	Reheat Limitation	Exhaust Air Heat Recovery
Per NRCC						
As-built Conditions						

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Fans

01		02	03		04		05
Name or Tag ID		Quantity	Fan Function	Compliance Pathway	Fan Electrical Input Power (kW)	Fan System Power (Watts/CFM)	System Compliance
Per C of C							
As-built Conditions							

Exhaust Systems §140.9(c)3D

This table includes all laboratory and factory exhaust and fume hoods within the scope of the permit application. The inputs within Table O are used to demonstrate compliance with the requirements within §140.9(c)3D.

01		04	05	06
Exhaust System Name or Item Tag		Exhaust Fan System Airflow (cfm)	Design Exhaust Fan System Power (watts)	Variable Speed Controls
Per C of C				
As-built Conditions				

Controlled Environment Horticulture Lighting

01	02	03	04	05	06
Zone/System or Item Tag	Photosynthetic Photon Efficacy (PPE)	Timeswitch Lighting Controls	Multilevel Lighting Controls	Electrical System Monitoring	CEH Compliance
Per NRCC				Electrical system capable of monitoring electrical energy usage of horticulture lighting load	
As-built Conditions					

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Space Conditioning for Plant Production

01	02	03
System Name/ Description	Dehumidification System for Indoor Grow CEH Compliance Method	CEH Compliance

Greenhouse Envelope

01		02	03	04	05
Tag/Plan Detail ID		Assembly Type	Frame Type	Design U-factor	CEH Compliance
Per NRCC					
As-built					

Steam Traps in Industrial Facilities

01	02	03	04
Fault Detection Diagnostics Monitoring		Strainer Installation	Steam Traps Compliance
Update Interval	Alarm Display		
Per NRCC			
As-built Conditions			

Electric Ready Commercial Kitchens

01		02	03
System Name		Dedicated Branch Wiring	Electrical Panel Sizing
Per NRCC		Includes a dedicated branch circuit wiring and outlet accessible to cookline appliances and meets the following requirements: a) The branch circuit conductors shall be rated at 50 amps minimum. b) The electrical service panel shall have a minimum capacity of 800 connected amps.	The electrical service panel shall be sized to accommodate an additional either 208v or 240v 50-amp breaker.
As-built			

G. ACCEPTANCE TESTS & FIELD VERIFICATION

CALIFORNIA ENERGY COMMISSION

CEC-NRCI-PRC-E

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

The following Acceptance Tests related to the systems or materials documented on this Certificate of Installation have been indicated on the permitted Certificate of Compliance as being required to comply with Title 24, Part 6. Process System Acceptance Tests are not required to be completed by a certified Acceptance Test Technician and may be completed by a field technician (which may be the installer). The Certificate of Acceptance forms indicated below will be required by the Authority Having Jurisdiction to demonstrate compliance.

Form/Title	Systems to be Field Verified
NRCA-PRC-01-F Compressed Air Systems	
NRCA-PRC-02-F Kitchen Exhaust	
NRCA-PRC-03-F Garage Exhaust	
NRCA-PRC-04-F Refrigerated Warehouses - Evaporator Fan Motor Controls	
NRCA-PRC-05-F Refrigerated Warehouses - Evaporative Condenser Controls	
NRCA-PRC-06-F-Refrigerated Warehouses - Air Cooled Condenser Controls	
NRCA-PRC-16-F-Refrigerated Warehouses - Adiabatic Condenser Controls	
NRCA-PRC-07-F-Refrigerated Warehouses - Variable Speed Compressor	
NRCA-PRC-08-F Refrigerated Warehouses - Electric Resistance Underslab Heating System	
NRCA-PRC-12-F Elevator Lighting & Ventilation Controls	
NRCA-PRC-13-F Escalators & Moving Walkways Speed Controls	
NRCA-PRC-14-F Lab Exhaust Ventilation Systems	
NRCA-PRC-15-F Fume Hood Automatic Sash Closure Systems	
NRCA-PRC-17-F Transcritical CO2 Refrigeration Systems	
NRCA-PRC-18-F Steam Traps	
There are no Acceptance Tests indicated on the permitted Certificate of Compliance related to the systems or materials documented on this Certificate of Installation.	

A copy of this Certificate of Installation should be distributed to the certified Acceptance Test Technician(s) who will perform the acceptance test(s). Title 24, Part 6 Section 10-103(a)3F also requires this Certificate of Installation be posted or made available to the Authority Having Jurisdiction for all applicable inspections.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. This field is filled out automatically.
2. Enter the Zip Code.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select applicable electrical components.
2. Select applicable HVAC components.
3. Select applicable insulation.
4. Select applicable plumbing components.
5. Select applicable refrigeration scope.
6. Select applicable specialties.

C. Compliance Results

1. This table is automatically filled with uneditable comments based on data entered in Section F.

D. Exceptional Conditions

1. This table is automatically 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. INSTALLATION DETAILS

Refrigerated Warehouse/Space Fan Powered Evaporators

1. This field is filled out automatically.
2. Enter the Model #.
3. Motor HP: Select from dropdown.
4. Phase: Select from dropdown.

5. Type or Efficiency: Select from dropdown.
6. Fan Controls: Select from dropdown.
7. This field is filled out automatically.

Refrigerated Warehouse/Space Condensers (Air-cooled, Water-cooled, Evaporative-cooled, Adiabatic)

1. This field is filled out automatically.
2. Enter the Model #.
3. Condenser Location: Select from dropdown.
4. Temp Setpoint Controls: Select from dropdown.
5. Variable Speed Control: Select from dropdown.
6. Refrigerant Type: Select from dropdown.
7. Enter the Efficiency (Btuh/W).
8. This field is filled out automatically.

Refrigerated Warehouse/Space Compressors

1. This field is filled out automatically.
2. Enter the Model #.
3. Condenser Temp: Select from dropdown.
4. Variable Speed Control: Select from dropdown.
5. Variable Volume Ratio: Select from dropdown.
6. This field is filled out automatically

Refrigerated Warehouse/Space Infiltration Barriers and Automatic Door Closers

1. This field is filled out automatically.
2. Infiltration Barrier: Select from dropdown.
3. Door Closure: Select from dropdown.
4. This field is filled out automatically

Transcritical CO2 Fan-powered Gas Coolers

1. This field is filled out automatically.
2. Static text describing variable speed fan control requirement
3. Static text describing gas cooler pressure control requirements
4. Design Condensing Temperatures: Select from dropdown.
5. Enter the Efficiency (Btuh/W).

6. This field is filled out automatically.

Mandatory Pipe Insulation All Occupancies

1. This field is filled out automatically.
2. Static text describing Pipe Insulation Applications
3. Static text describing Pipe Insulation Protection

Refrigerated Warehouse/Space Exterior Surface Insultation

1. Select if exterior surfaces of refrigerated warehouses/spaces are insulated at least to the minimum R-values.
2. Nothing to do for this column.
3. Nothing to do for this column.
4. Nothing to do for this column.
5. This field is filled out automatically.

Refrigerated Warehouse/Space Underslab Heating

1. This field is filled out automatically.
2. Compliance Method: Select from the dropdown.
3. This field is filled out automatically.

Condensers Serving Commercial Refrigeration System

1. This field is filled out automatically.
2. Condenser Type: Select from dropdown.
3. Variable Speed Control: Select from dropdown.
4. Temp Setpoint Controls: Select from dropdown.
5. Enter the Specific Efficiency (Btuh/W).
6. Fin Density: Select from dropdown.
7. This field is filled out automatically.

Compressors and Condensing Units Serving Commercial Refrigeration System

1. This field is filled out automatically.
2. Saturation suction temperature control (SST): Select from dropdown.
3. This field is filled out automatically.

Refrigerated Display Cases

1. Select applicable lighting controls for refrigerated display cases & illuminated glass doors of walk-in coolers/ freezers.
2. This field is filled out automatically.

Heat Recovery of Refrigeration System:

1. Select from dropdown.

Transcritical CO_2 Fan-powered Gas Coolers

4. This field is filled out automatically.
5. Static text describing variable speed fan control requirement
6. Static text describing gas cooler pressure control requirements
7. Design Condensing Temperatures: Select from dropdown.
8. Enter the Efficiency (Btuh/W).
9. This field is filled out automatically.

Mandatory Pipe Insulation All Occupancies

1. This field is filled out automatically.
2. Static text describing Pipe Insulation Applications
3. Static text describing Pipe Insulation Protection

Enclosed Parking Garage Exhaust Controls

1. Select the As-built box if the Exception applies.
2. Select the As-built box if the Exception applies.
3. Select the As-built box if the Requirement is met.
4. Select the As-built box if the Requirement is met.
5. Select the As-built box if the Requirement is met.
6. Select the As-built box if the Requirement is met.
7. Select the As-built box if the Requirement is met.
8. Select the As-built box if the Requirement is met.
9. Select the As-built box if the Requirement is met.

Enclosed Parking Garage Exhaust

1. This field is filled out automatically.
2. Enter the Parking Garage Area (ft^2).
3. Enter the Ventilation Fan Rate (CFM).
4. This field is filled out automatically.

Process Boilers

1. This field is filled out automatically.
2. Enter the Model #.
3. Rated Input Capacity per Boiler (Btu/h): Select from dropdown.
4. Fan Controls: Select from dropdown.
5. Combustion Air Shutoff: Select from dropdown.
6. Stack Design and Controls: Select from dropdown.
7. This field is filled out automatically.

Compressed Air Systems

1. This field is filled out automatically.
2. Enter the Model #.
3. Trim Compressor: Select from dropdown.
4. Controls: Select from dropdown.
5. Monitoring: Select from dropdown.
6. Service Line Size: Select from dropdown.
7. This field is filled out automatically.

Elevator Lighting and Ventilation

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Enter the Lighting Number of Fixtures.
4. Enter the Lighting Watts per Fixture.
5. This field is filled out automatically.
6. This field is filled out automatically.
7. This field is filled out automatically.
8. Enter the Ventilation Fan Power (Watts).
9. Enter the Ventilation Airflow (CFM).

10. This field is filled out automatically.
11. Controls: Select from dropdown.
12. This field is filled out automatically.

Escalators and Moving Walkway Speed Controls

1. This table covers requirements for Escalators and moving walkways located in airports, hotels, and transportation function areas.

Computer Room Systems

1. This field is filled out automatically.
2. Economizer: Select from dropdown.
3. Reheat Controls: Select from dropdown.
4. Humidification: Select from dropdown.
5. Enter the Sensible Cooling Capacity (kBtuh).
6. Enter the Total Fan System Power (Watts).
7. Fan Controls: Select from dropdown.
8. Containment: Select from dropdown.
9. This field is filled out automatically.

Computer Room Uninterruptible Power Supply (UPS)

1. This field is filled out automatically.
2. Alternating Current Output UPS Compliance Method: Select from dropdown.
3. Type of UPS: Select from dropdown.
4. Enter the UPS Rated Output Power.
5. Enter the Efficiency.
6. This field is filled out automatically.

Commercial Kitchen Ventilation

1. This table covers commercial kitchen ventilation requirements.

Commercial Kitchen Hood

1. This field is filled out automatically.
2. Hood Type: Select the dropdown.
3. Hood Style: Select the dropdown.

4. Equipment Duty: Select the dropdown.
5. Enter the Hood Length (ft).
6. Enter the Hood Exhaust Rate (CFM).
7. This field is filled out automatically.

Laboratory and Factory Exhaust and Fume Hoods

1. Enter the Zone/System or Item Tag.
2. Airflow Reduction: Select from dropdown.
3. Transfer Air: Select from dropdown.
4. Fan power: Select from dropdown.
5. Hood Sash Closure: Select from dropdown.

Fans

Exhaust Systems §140.9(c)3D

Controlled Environment Horticulture Lighting

1. This field is filled out automatically.
2. Photosynthetic Photon Efficacy (PPE): Select from dropdown.
3. Timeswitch Lighting Controls: Select from dropdown.
4. Multilevel Lighting Controls: Select from dropdown.
5. Static text describing electrical system monitoring requirement.
6. This field is filled out automatically.

Space Conditioning for Plant Production

1. Enter name or description of system.
2. Dehumidification System for Indoor Grow CEH Compliance Method: Select from dropdown.
3. This field is filled out automatically.
4. This field is filled out automatically

Greenhouse Envelope

Steam Traps in Industrial Facilities

1. Update Interval Fault Detection Diagnostics Monitoring: Select from dropdown.
2. Alarm Display Fault Detection Diagnostics Monitoring: Select from dropdown.
3. Strainer Installation: Select from dropdown.
4. This field is filled out automatically.

Electric Ready Commercial Kitchens

Documentation Declaration Statements

1. The person who prepared the NRCI 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.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

This Certificate of Installation documents the installation of solar and battery features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

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

A. GENERAL INFORMATION

01	Project Location (city):		05	Authority Having Jurisdiction:	
02	Zip Code:		06	Building Permit #:	
03	Date of Permit Set used for construction:		07	Date of As-built Set:	
04	Name of Permit Set used for construction:		08	Name of As-built Set:	

B. INSTALLER SCOPE

This table indicates construction systems and materials documented on this Certificate of Installation.

01							
☐	Allocated Solar Zone	☐	Photovoltaics	☐	Solar Water Heater	☐	Smart Thermostat
☐	Home Automation System	☐	Greywater Irrigation	☐	Rainwater Catchment System	☐	Electric Vehicle Charging Space
☐	*Energy Star Dishwasher and Energy Star Refrigerator*	☐	*Energy Star Dishwasher F w/Electronically Communicated Mower*	☐	Battery Storage System		

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

C. COMPLIANCE RESULTS

This table indicates whether the as-built conditions documented in this form are equal or better than what was documented on the permitted Certificate of Compliance. If the installation is not equal or better, Section 10-103(a)2B requires the Certificate of Compliance form to be revised accordingly to demonstrate compliance.

01	**INSTALLED FEATURES EXACTLY MATCH DESIGN ON PERMITTED CERTIFICATE OF COMPLIANCE**
Documented as-built conditions should be verified by inspector from Authority Having Jurisdiction to comply.	
The Certificate of Compliance should be revised to confirm as-built conditions comply and this Certificate of Installation updated accordingly.	

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of field conditions noted by the installer that may impact mechanical controls requirements documented on the Certificate of Compliance.

E. INSTALLER NOTES

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

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

F. INSTALLATION DETAILS

The following tables indicate performance requirements as documented on the permitted Certificate of Compliance for all systems and components included in Table B. Installer Scope. Also indicated are the as-built conditions documented by the installer/ documentation author.

Allocated Solar Zone on Roof for Future Use

01	02	03	04	05	06	07
Subarea Name	Building Plan Reference Showing Solar Zone	Solar Zone Free from Obstructions?[1]	Location reserved for inverters and metering and a pathway reserved for routing of conduit from solar zone to point of interconnection?	Main electrical service panel has a minimum busbar rating of 200 amps?	Main electrical service panel has a reserved space for the installation of a circuit breaker for future solar electric installation that is labeled?	Solar Zone Compliance
Per C of C						
As-built Conditions						

Permanently Installed Solar Photovoltaic (PV) System

☐	The system meets the installation requirements of Joint Appendix JA11.

01		02	03	04	05	06	07	08	09	10
PV Array ID or Name		Installed DC Power Rating (kW)	Module Type	Azimuth (deg)	Tilt Input (deg/pitch)	Angle/Tilt	Annual Solar Access (%)	Inverter Efficiency (%)	Array Type	Module Level Power Electronics
As-built Conditions										
As-built Conditions										
11	Total As-built DC System Size (kW)			12	Total DC System Size per C of C (kW)			13	PV Compliance	

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Battery Energy Storage System

☐	The system meets the installation requirements of Joint Appendix JA12.

01		02	03	04	05	06	07	08
Manufacturer		Model #	Rated Usable Energy Capacity of BESS (kWh)	Rated Power Capacity of BESS (kW_{dc})	Control	Rated Single Charge-Discharge AC Efficiency	Battery System Certified by CEC?	Battery Compliance
Per C of C								
As-built Conditions								

Permanently Installed Solar Hot Water System

01		02	03	04	05	06
SRCC # or IAPMO File #		Certification Number	System Type	Solar Savings Fraction	Drainwater Heat Recovery	SHW Compliance
Per C of C						
As-built Conditions						

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Smart Thermostats and Additional Efficiency Measure in Multifamily Dwelling Units

The following requirements have been included on the permitted Certificate of Compliance to comply with Title 24, Part 6. Installations shall meet these requirements or the Certificate of Compliance shall be modified to demonstrate compliance.

1. All thermostats in each dwelling unit comply with the following requirements from Title 24, Part 6 §110.12(a) and all requirements in Joint Appendix 5: All demand responsive controls shall be either: A. A certified OpenADR 2.0a or OpenADR 2.0b Virtual End Node (VEN), as specified under Clause 11, Conformance, in the applicable OpenADR 2.0 Specification; or a certified Baseline Profile Open ADR 3.0 Virtual End Node; or B. Certified by the manufacturer to the Energy Commission as being capable of responding to a demand response signal from a certified OpenADR 2.0b or a certified Baseline Profile OpenADR 3.0 Virtual End Node by automatically implementing the control functions requested by the Virtual End Node for the equipment it controls. 2. All demand responsive controls shall be capable of communicating using one or more of the following: Wi-Fi, ZigBee, BACnet, Ethernet, or hard-wiring. 3. Demand responsive controls may incorporate and use additional protocols beyond those specified in Sections 110.12(a)1 and 2. 4. When communications are the demand response signal is disabled or unavailable, all demand responsive controls shall continue to perform all other control functions provided by the control.
Dwelling units include an ENERGY STAR dishwasher AND EITHER an ENERGY STAR refrigerator OR a whole house fan driven by an electronically commutated motor.
Dwelling units include a home automation system that is capable of, at a minimum, controlling the appliances and lighting of the dwelling and responding to demand response signals.
Dwelling units include alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the California Plumbing Code and any applicable local ordinances.
Dwelling units include a rainwater catchment system designed to comply with the California Plumbing Code and any applicable local ordinances, and that uses rainwater flowing from at least 65% of the available roof area.
Project complies with Title 24, Part 11, §A4.106.8.2 requirements for electric vehicle charging spaces.

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
5. I understand that a completed signed copy of this Certificate of Installation shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Responsible Person Scope		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

A. General Information

1. Enter the City the project is located in.
2. Enter the zip code.
3. Enter the Date of Permit Set used for construction.
4. Enter the Name of Permit Set used for construction.
5. Enter the Authority Having Jurisdiction.
6. Enter the Building Permit #.
7. Enter the Date of As-Built Set.
8. Enter the Name of As-Built Set.

B. Project Scope

1. Select all applicable construction systems and materials documented.

C. Compliance Results

1. This table is auto filled based on selections made in section F.

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. Installer Notes

1. Enter any notes or comments for the AHJ.

F. Installation Details

Allocated Solar Zone

1. This field is filled out automatically.
2. This field is filled out automatically.
3. Solar Zone Free of Obstructions: Select from dropdown.
4. This field is calculated automatically.

Permanently Installed Solar Photovoltaic (PV) System

1. Enter Installed DC Power Rating.
2. This field is calculated automatically.

Battery Storage System

1. Enter Rated Energy Capacity of Battery.
2. Enter Rated Power Capacity of Battery.
3. This field is calculated automatically.

Permanently Installed Solar Hot Water System

1. SRCC/IAPMO#: Select from Dropdown.
2. Enter Certification Number.
3. This table is auto filled with uneditable text.
4. Enter Solar Savings Fraction.
5. This field is filled out automatically.
6. This field is calculated automatically.

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1. This table covers the additional requirements for Smart Thermostats and Additional Efficiency Measure in Multifamily Dwelling Units.

Documentation Declaration Statements

1. The person who prepared the NRCI 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.