



SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

Note: This table completed by HERS Registry.

Table with 2 columns and 3 rows: Project Name, Dwelling Address, City and Zip Code; Enforcement Agency, Permit Number, Permit Application Date.

A. General Information

Table with 2 columns: 01 Building Name

B. Design Central Water Heating Systems Information (other than CHPWH)

This table reports features of the water heating system other than CHPWH system that were specified on the registered LMCC compliance document for this project.

Table with 12 columns: 01-12. Headers include Water Heating System ID or Name, Water Heating System Type, Water Heater Type, # of Water Heaters in System, Water Heater Storage Volume (gal), Fuel Type, Rated Input Type, Rated Input Value, Heating Efficiency Type, Heating Efficiency Value, Standby Loss (%), Exterior Insul. R-Value.

B2. Design CHPWH System Information

This table reports the water heating systems specified on the registered LMCC compliance document for this project.

Table with 12 columns: 01-12. Headers include Water Heating System ID or Name, Modeled Equipment Make and Model, # of Water Heaters/Compressors, Primary Tank Location, Primary Tank Volume, Primary Tank Total Insulation, Loop Tank Location, Loop Tank Volume, Loop Tank Total Insulation, Loop Pipe Insulation Thickness, Loop Tank Type, Simulated Equipment Make and Model.

C. Installed Central Water Heating Systems Information

This table reports features of the water heating system other than CHPWH system that were specified on the registered LMCC compliance document for this project.

Table with 12 columns: 01-12. Headers include Water Heating System ID or Name, Water Heating System Type, Water Heater Type, # of Water Heaters in System, Water Heater Storage Volume (gal), Fuel Type, Rated Input Type, Rated Input Value, Heating Efficiency Type, Heating Efficiency Value, Standby Loss (%), Exterior Insul. R-Value.



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C2. Installed CHPWH System Information

This table reports the water heating system features that were specified on the registered LMCC compliance document for this project.

Table with 11 columns: 01 Water Heating System ID or Name, 02 Modeled Equipment Make and Model, 03 # of Water Heaters/Compressors, 04 Primary Tank Location, 05 Primary Tank Volume, 06 Primary Tank Insulation, 07 Loop Tank Location, 08 Loop Tank Volume, 09 Loop Tank Insulation, 10 Loop Pipe Insulation Thickness, 11 Loop Tank Type

D. Design Central Water Heating Distribution Systems Information

This table reports the water heating distribution types specified on the registered LMCC compliance document for this project.

Table with 3 columns: 01 Water Heating System ID or Name, 02 Central DHW System Distribution Type, 03 Dwelling Unit DHW System Distribution Type

E. Installed Central Water Heating Distribution Systems Information

This table reports the water heating distribution types specified on the registered LMCC compliance document for this project.

Table with 3 columns: 01 Water Heating System ID or Name, 02 Central DHW System Distribution Type, 03 Dwelling Unit DHW System Distribution Type

F. Installed Water Heater Manufacturer Information

Table with 3 columns: 01 Water Heating System ID or Name, 02 Manufacturer, 03 Model Number



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G. Mandatory Requirements for All Central Domestic Hot Water Systems

Table with 2 columns: ID (01-04) and Description of requirements for central domestic hot water systems, including capacity, recirculation, and storage tank insulation.

H. Multiple Dwelling Units – Recirculation Temperature Modulation Control Requirements (RA4.4.11)

Systems that utilize this distribution type shall comply with these requirements

Table with 2 columns: ID (01-02) and Description of temperature modulation control requirements for multiple dwelling units.

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

I. Multiple Dwelling Units – Recirculation Continuous Monitoring Systems Requirements (RA4.4.12)

Systems that utilize this distribution type shall comply with these requirements.

Table with 2 columns: ID (01-03) and Description of continuous monitoring system requirements for multiple dwelling units.



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**J. Multiple Dwelling Units – Demand Recirculation Requirements (RA4.4.13)**

Systems that utilize this distribution type shall comply with these requirements.

|    |   |
|----|---|
| 01 | The system operates "on-demand", meaning that the pump begins to operate shortly before or immediately after hot water draw begins, and stops when the return water temperature reaches a certain threshold value.  |
| 02 | After the pump has been activated, the controls shall allow the pump to operate until the water temperature at the thermo-sensor rises to one of the following values: <ul style="list-style-type: none"> <li>• Not more than 10°F (5.6°C) above the initial temperature of the water in the pipe; or</li> <li>• Not more than 102°F (38.9°C).</li> </ul>   |
| 03 | The controls shall limit pump operation to a maximum of 10 minutes following any activation. This is provided in the event that the normal means of shutting off the pump have failed.  |
| 04 | Pump and control placement shall meet one of the following criteria: <ul style="list-style-type: none"> <li>• When a dedicated return line has been installed the pump, controls and thermo-sensor are installed at the end of the supply portion of the recirculation loop; or</li> <li>• The pump and controls are installed on the dedicated return line near the water heater and the thermo-sensor is installed in an accessible location as close to the end of the supply portion of the recirculation loop as possible; or</li> <li>• When the cold water line is used as the return, the pump, demand controls and thermo-sensor shall be installed in an accessible location at the end of supply portion of the hot water distribution line (typically under a sink).</li> </ul> |
| 05 | Insulation is not required on the cold water line when it is used as the return.  |
| 06 | Manual or sensor controls shall be installed and, if powered, each control has standby power of 1 Watt or less. Controls may be located in individual units or on the loop. Controls may be activated by wired or wireless mechanisms, including buttons, motion sensors, door switches and flow switches.  |

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



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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/HERS Certification Identification (If applicable): |
| City/State/Zip:                    | Phone:   |

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

- The information provided on this Certificate of Installation is true and correct.
- I am either: a) a responsible person 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, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
- 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.
- I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
- I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

|   |  |              |
|---|--|--------------|
| 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: |

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

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| CERTIFICATE OF INSTALLATION – USER INSTRUCTIONS   | LMCI-PLB-01-E |
| Multifamily Central Hot Water System Distribution | (Page 1 of 3) |

## LMCI-PLB-01-E User Instructions

### A. General Information

This table reports the building location as specified on the Registered LMCC.

### B. Design Central Water Heating Systems Information

This table reports features of the water heating system other than **CHPWH** system that were specified on the registered LMCC compliance document for this project. This section is for information/verification purposes only and requires no user input.

#### B2. Design CHPWH System Information

This table reports the water heating systems specified on the registered LMCC compliance document for this project. This section is for information/verification purposes only and requires no user input.

### C. Installed Central Water Heating Systems Information

This table reports the water heating system information that is being installed. Require one line for each installed water heater.

1. Water Heating System ID or Name – Reference information from LMCC.
2. Water Heating System Type – Reference information from LMCC. The different kinds of water heating system type are DHW or Combined Hydronic.
3. Water Heater Type – Information from LMCC. The different kinds of water heaters are Large/Commercial Storage, Small/Consumer Storage, Residential-Duty Commercial Storage, Heat Pump, Boiler, Large/Commercial Instantaneous, Small/Consumer Instantaneous, Residential-Duty Commercial Instantaneous or Indirect.
4. # of Water Heaters in System – Reference information from LMCC.
5. Water Heater Storage Volume (gal) – User input. Value may be N/A if water heater type is instantaneous with zero storage.
6. Fuel Type – Reference information from LMCC. The different kinds of fuel types are natural gas, propane, oil, or electricity.
7. Rated Input Type – Reference information from LMCC. For natural gas, propane and oil fuel type the input type is Btu/hr. For electric the input type is kW.
8. Rated Input Value – User input. Numerical value of the rated input. Must be equal to or less than value indicated on the LMCC.
9. Heating Efficiency Type – Reference information from LMCC. Different efficiency types are Energy Factor, AFUE, UEF and Thermal Efficiency.
10. Heating Efficiency Value – User input. Numerical value of the Heating Efficiency. Must be equal to or higher efficiency than value indicated on the LMCC.
11. Standby Loss – User input. Must be equal to or less than value indicated on the LMCC. Value may be N/A if LMCC value is N/A.
12. Exterior Insulation. R-Value – User input. Must be equal to or higher than value indicated on the LMCC. Value may be N/A if LMCC value is N/A.

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| Multifamily Central Hot Water System Distribution | (Page 2 of 3) |

## C2. Installed CHPWH System Information

This table reports the water heating system information that is being installed. Require one line for each installed water heater. Require one line for each installed water heater.

1. Water Heating System ID or Name – Reference information from Table B2.
2. Modeled Equipment Make and Model – User input must be equal to the value indicated on Table B2 as default and allow user to override with an equivalent system based on the simulated equipment in Table B2.
3. Number of Water Heaters/ Compressors – User input, must be equal to the value indicated on table B2.
4. Primary Tank Location – Reference information from Table B2.
5. Primary Tank Volume – User input, must be equal to or higher than the value indicated on table B2.
6. Primary Tank Insulation – User input, must be equal to or higher than value indicated on table B2.
7. Loop Tank Location – Reference information from Table B2.
8. Loop Tank Volume – User input, must be equal to or higher than the value indicated on table B2.
9. Loop Tank Insulation – User input, must be equal to or higher than value indicated on table B2.
10. Loop Pipe Insulation Thickness – User input, must be equal to or higher than the value indicated on table B2.
11. Loop Tank – Reference information from Table B2.

## D. Design Central Water Heating Distribution Systems Information

This table reports the water heating distribution types specified on the registered LMCC compliance document for this project.

## E. Installed Central Water Heating Distribution Systems Information

1. Water Heating System ID or Name – Reference information from LMCC.
2. Central DHW System Distribution Type = Reference information from LMCC.
3. Dwelling Unit DHW System Distribution Type = Reference information from LMCC.

## F. Installed Water Heater Manufacturer Information

This table reports the manufacturer information of the installed water heater(s). Require one line for each installed water heater

1. Water Heating System ID or Name – Reference information from LMCC.
2. Manufacturer – User input. Enter the name of the water heater manufacturer.
3. Model Number – User input. Enter the model number of the water heater.

## G. Mandatory Requirements for All Central Domestic Hot Water Recirculation Systems

This table lists the requirements for all central recirculation systems. Installer must ensure all the requirements in this table are met.

## H. Multiple Dwelling Units – Recirculation Temperature Modulation Control Requirements

This table only applies to systems indicated as **Recirculation Temperature Modulation Control**. In addition to the mandatory requirements in Table G, the installer must ensure the requirements on this table are met.



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| Multifamily Central Hot Water System Distribution | (Page 3 of 3) |

**I. Multiple Dwelling Units – Recirculation Continuous Monitoring Systems Requirements**

This table only applies to systems indicated as **Recirculation Continuous Monitoring Systems**. In addition to the mandatory requirements in Table G, the installer must ensure the requirements on this table are met.

**J. Multiple Dwelling Units – Demand Recirculation Requirements**

This table only applies to systems indicated as **Demand Recirculation**. In addition to the mandatory requirements in Table G, the installer must ensure the requirements on this table are met.

**Documentation Declaration Statements**

1. The person who prepared the LMCI 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.

For information and data completion only. Not valid until registered with a HERS provider