

<b>CERTIFICATE OF INSTALLATION</b>		<b>CF2R-MCH-25-H</b>
Refrigerant Charge Verification		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City	Zip Code

<b>A. System Information</b>		
<i>Each system requiring refrigerant charge verification will be documented on a separate certificate.</i>		
1	System Identification or Name	
2	System Location or Area Served	
3	Condenser (or package unit) make or brand	
4	Condenser (or package unit) model number	
5	Nominal tonnage of Condenser	
6	Condenser (or package unit) serial number	
7	Refrigerant Type	
8	Other Refrigerant Type (if applicable)	
9	Project Type	
10	Date of Refrigerant Charge Verification for this system	
11	Lowest outdoor air temperature that occurred during the refrigerant charge verification (degreeF)	
12	Outdoor Temperature Qualification status	
13	Refrigerant charge verification method	
14	Person who performed the Refrigerant Charge Verification reported on this Certificate of Installation:	
15	Group Sampling Qualification Status	

<b>B. Measurement Access Hole (MAH) Verification</b>		
<i>Procedures for installing MAH are specified in Reference Residential Appendix RA3.2.2.3</i>		
1	Method used to demonstrate compliance with the Measurement Access Hole (MAH) requirement	

<b>C. Minimum System Airflow Rate Verification</b>		
<i>Procedures for verifying minimum system airflow are specified in Reference Residential Appendix RA3.2.2.7.</i>		
1	Minimum Required System Airflow Rate (cfm)	
2	System Airflow Rate Verification Status	

<b>D. Subcool Charge Verification Method</b>		
<i>Procedures for instrument calibration and the Subcool Charge Verification method are specified in RA3.2.2.2 and RA3.2.2.6.2</i>		
1	Date of Digital Refrigerant Gauge Calibration	
2	Date of Digital Termocouple Calibration	

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3	Lowest return air dry bulb temperature that occurred during the refrigerant charge verification procedure (degreeF) ( $T_{return, db}$ )	
4	Outdoor Temperature Qualification Status	
5	Measured Liquid Line Temperature ( $T_{liquid}$ )	
6	Measured Liquid Line Pressure ( $P_{liquid}$ )	
7	Condenser saturation temperature ( $T_{condensor, sat}$ ) from digital gauge or P-T Table	
8	Measured Subcool (Line 35 – Line 33)	
9	Target Subcool from Manufacturer	
10	Line 36 is within plus or minus 3 degrees of Line 37	

<b>E. Metering Device Verification</b>		
<i>Procedures for the verification of proper metering device operation are specified in RA3.2.2.6.2</i>		
1	Measured Suction line temperature ( $T_{suction}$ )	
2	Measured Suction line pressure ( $P_{suction}$ )	
3	Evaporator saturation temperature ( $T_{evaporator, sat}$ ) from digital gauge or P-T Table using line 40	
4	Measured Superheat (Line 39 – Line 41)	
5	Line 40 is between 4 and 25 deg F (inclusive)	

<b>F. Compliance Statement</b>	
The system complies with the Refrigerant Charge Verification by the Subcooling Method when "Pass" is displayed in the box to the right.	

<b>DOCUMENTATION AUTHOR'S DECLARATION STATEMENT</b>		
1. I certify that this Certificate of Installation documentation is accurate and complete.		
Name:	Signature:	
Company:	Date:	
Address:	CEA or CEPE or HERS Certification # If applicable:	
City/State/Zip:	Phone:	
<b>RESPONSIBLE PERSON'S DECLARATION STATEMENT</b>		

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1. I certify under penalty of perjury, under the laws of the State of California, 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 to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
3. I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
4. I understand that a HERS rater will check the installation to verify compliance, and that if such checking identifies defects, I am required to take corrective action at my expense. I understand that Energy Commission and HERS provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense.
5. I reviewed a copy of the Certificate of Compliance (CF1R) approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF1R that apply to the installation have been met.
6. **I will ensure that a completed, signed 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. I understand that a 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 ensure that all Certificates of Installation are registered with a HERS Provider Data Registry for projects that require HERS verification.

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)

Responsible Person's Name:

Responsible Person's Signature:

CSLB License:

Date Signed:

Position With Company (Title):

Is this installation monitored by a Third Party Quality Control Program (TPQCP)?  
 Yes     No

Name of TPQCP (if applicable):

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2013 Residential Compliance

January 2014

## Instructions MCH-25b:

### Section A. System Information

1. This information is automatically pulled from the Certificate of Installation (MCH1).
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6. This information is automatically pulled from the Certificate of Installation (MCH1).
7. Indicate the type of refrigerant used in the system being verified.
8. Indicate the type of refrigerant used (other than R-22 or R-410A) in the system being verified.
9. Indicate whether the HVAC system is Completely New, Replacement or an Alteration.
10. Specify the date the refrigerant charge verification is performed.
11. Measure and Record the lowest outdoor air temperature that occurred during the refrigerant charge verification (degree).
12. This information is automatically displayed if A11 is less than 55F.
13. Based on the outdoor temperature, metering device and system configuration, specify the method of verification from the drop down list.
14. Identify who will be performing the verification, select from the two options.
15. The sampling status automatically displayed based on the input results of A13 and A10.

### Section B. 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.

### Section C. Minimum System Airflow Rate Verification

1. This information is automatically calculated based on the information given in line A9.
2. This information is automatically calculated based on either the MCH-23, or MCH-24.

### Section D. Subcool Charge Verification Method

1. Indicate the date of calibration of the digital refrigerant gauge used in this procedure.
2. Indicate the date of calibration of the digital thermocouple used in this procedure.
3. Measure and record the lowest return air dry bulb temperature that occurred during the refrigerant charge procedure (degreeF).
4. This information is displayed automatically based on the information in line D3.
5. Measure and record the liquid line temperature ( $T_{\text{liquid}}$ )
6. Measure and record the liquid line pressure ( $P_{\text{liquid}}$ )

7. Measure and record the condenser saturation temperature ( $T_{\text{condenser, sat}}$ ) or retrieve the saturation temperature from the Pressure-Temperature Table.
8. The measured subcool is automatically calculated based on lines D5 and D7.
9. Specify the target subcool range given by the manufacturer.
10. Pass or Fail is automatically calculated with the information in lines D8 and D9.

E. Metering Device Verification.

1. Measure and record the suction line temperature ( $T_{\text{suction}}$ ).
2. Measure and record the suction line pressure ( $P_{\text{suction}}$ ).
3. Measure and record the evaporator saturation temperature ( $T_{\text{evaporator, sat}}$ ) or retrieve the saturation temperature from the Pressure-Temperature table.
4. The measured superheat is calculated based on lines E1 and E3.
5. Pass or Fail is automatically calculated with the information in line E4.