

Sent 11/07/2006 at 16:04:15 - from - to 9167255297 p8/9

0610764
 1331 Commons Dr

Certificate of Compliance Prescriptive Method - HVAC-only Alteration CF-1R-ALT

Project Title: Katzberg		Date: 7/12/06	© CalCERTS 2005
<p>IMPORTANT: This CF-1R-ALT form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # _____ of _____ systems altered in this house.</p>			
<p>Section 6 - Minimum Requirements for Equipment to be Installed/Altered.</p> <p>Installed equipment must match specifications and model or discuss alternatives/notes.</p>			
28	<input type="checkbox"/> Split system <input type="checkbox"/> Package Unit		
29	<input type="checkbox"/> Air Handler	<input type="checkbox"/> Coil/Filter, AFUE	<input type="checkbox"/> Heatstrip FAU <input type="checkbox"/> Hydro FAU <input type="checkbox"/> Other
30	<input type="checkbox"/> Heat Exchanger		
31	<input type="checkbox"/> Outdoor Condensing Unit	<input type="checkbox"/> OAC Efficiency	<input type="checkbox"/> Efficiency RSEB/HSFC
32	<input type="checkbox"/> Cooling or heating coil		
33	<input type="checkbox"/> Valve	<input type="checkbox"/> Application	<input type="checkbox"/> Length (ft) <input type="checkbox"/> R-value
<p>All mandatory measures apply to any altered component. See ME-1B - ALT form.</p>			
<p>Compliance Statement: This certificate of compliance lists the building features and specifications needed to comply with Title 24, Parts 1 and 8 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall project responsibility. The undersigned recognizes that compliance using duct sealing, verification of refrigerant charge, and TXV require installer testing and certification and verification by an approved MERS rater.</p>			
Home Owner or Authorized Agent		Documentation Author	
Name: Katzberg		Name: Bill Baerley	
Address: 1331 Commons Dr.		Company Name: Sears	
City/State/Zip: Sacramento, CA 95825		Address: 1200 Del Paso Rd	
Phone: 916-649-8640		City/State/Zip: Sacramento, CA 95825	
		Phone: 916-830-7430	
Signature: [Signature]		Signature: [Signature]	
Enforcement Agency (Building Department)		Notes/Comments:	
Name:			
Title:			
Department:			
Phone #:			
Fax #:			
Signature or Stamp:			
<p>Required forms: CF-1R-ALT: by anyone. Required at time of permit application. Copies to home owner, enforcement agency, MERS rater. CF-6R-ALT: by installing contractor. Required to close permit. Copies to home owner, enforcement agency, MERS rater. CF-4R-ALT: by MERS rater. Required to close permit. Copies to home owner, enforcement agency, installer. The CF-4R forms for a sample group shall not be released until all testing and verification is completed and passed for the entire group.</p>			

Certificate of Compliance Prescriptive Method - HVAC-only Alteration CF-1R-ALT

Project Title: Katzberg	Date: 7/12/06	© CalCERTS 2005
Project Address: 1331 Commons Dr.	Climate Zone: 12	Enforcement Agency Use Only
Documentation Author: Bill Parley	Telephone:	Building Permit #
Company Name: Sears		Plan Draw Date
Field Check Date		

IMPORTANT: This CF-1R-ALT form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # of systems altered in this house.

Check all lines that apply. Check only lines that apply.

Scope of Alterations:

- 1 An Air Handler is to be installed or replaced. Duct sealing to be determined. Continue to next line.
- 2 A Furnace Heat exchanger is to be installed or replaced. Duct sealing to be determined. Continue to next line.
- 3 An outdoor condensing unit is to be installed or replaced. Duct Sealing and/or TXV(RCA) to be determined. Continue to next line.
- 4 A rooftop or hanging coil is to be installed or replaced. Duct Sealing and/or TXV(RCA) to be determined. Continue to next line.
- 5 More than 40 feet of new or replacement duct are to be installed in unconditioned space. Duct sealing to be determined.
 Check here if the existing duct system is also to be new or replaced. Continue to next line.
- 6 If none of lines 1-5 are checked, neither Duct Sealing nor TXV(RCA) are required. Go to Section 5.

Section 1 - Duct Sealing (Only if any of Lines 1, 2, 3, 4 or 5 are checked. Skip if Line 6 is checked.)

- 7 This system is in Climate Zone 1, 3, 4, 5, 6, 7, or 8. No duct sealing is required. Go to Section 2.
- 8 This system has less than 40 feet of duct in unconditioned space. No duct sealing is required. Go to Section 2.
- 9 This system was previously sealed and tested, and was certified by a HERS rater. No duct sealing is required. Attach previous CF-4R form. Go to Section 2.
- 10 This duct system is sealed or insulated with asbestos. No duct sealing is required. Go to Section 2.

Note: If the entire duct system is to be new or replaced, Lines 11-14 do not apply.

- 11 In Climate Zones 9, 12 and 13: An 0.82 AFUE furnace will be installed in lieu of duct sealing and TXV, if applicable.
- 12 In Climate Zones 10, 13 and 15: An SEER 14 and EER 12 condenser will be installed with TXV(RCA) AND added duct insulation (R-4 vinyl on existing ducts, R-8 new ducts) in lieu of duct sealing. Go to Section 2.
- 13 In Climate Zones 8, 10, 11, 13, 14, or 16: An SEER 14 and EER 12 condenser will be installed with TXV(RCA) AND a 0.82 AFUE furnace will be installed in lieu of duct sealing. Go to Section 2.
- 14 In Climate Zones 2, 8, 11, 12, 14 or 16: An SEER 14 and EER 12 condenser will be installed with TXV(RCA) AND an 0.82 AFUE furnace will be installed with increased duct insulation in lieu of duct sealing. Go to Section 2.
- 15 None of lines 7-14 above are checked. Duct Sealing is required. Continue.

Section 2 - TXV(RCA) (Only if Lines 3 or 4 are checked, otherwise go to Section 3)

- 16 This system being altered is a package unit. No TXV(RCA) is required. Go to Section 3.
- 17 This system is in Climate Zone 8 and a 14 SEER air conditioner or 0.82 AFUE furnace is being installed. No TXV(RCA) is required. Go to Section 3.
- 18 This system is in Climate Zone 1, 3, 4, 5, 6, or 7. No TXV(RCA) is required. Go to Section 3.
- 19 This system is in Climate Zone 10 and line 14 is not checked. No TXV(RCA) is required. Go to Section 3.
- 20 This system is in Climate Zones 10 and line 14 is checked and not line 16. TXV(RCA) is required. Go to Section 3.
- 21 This system is in Climate Zone 2 or 8-13 and line 11, 16 or 17 is not checked. TXV(RCA) is required. Go to Section 3.

Section 3 - HERS Rater verification

- 22 If line 15 is checked, HERS verification is required for Duct Sealing.
- 23 If lines 18, 19, 14, 20 or 21 are checked and not line 16 or 17, HERS verification is required for TXV(RCA).
- 24 If line 12, 13 or 14 are checked, HERS verification is required for 12 EER.

Section 4 - Equipment Efficiency

- 25 If lines 11, 12, 13, 14 or 17 are checked, upgraded equipment efficiencies are required. List in Section 6.

Section 5 - Duct R-Value

- 26 If more than 40 feet of duct is being installed or replaced, duct R-value must meet or exceed Package D requirements.
- 27 If less than 40 feet of duct is being installed or replaced, duct R-value must meet or exceed R-4.2.

Section 6 - See next page

Version 03-10-06

Page 1 of 2

This form can only be used on projects being verified by CalCERTS certified raters.

www.calcerts.com

CalCERTS - Certificate

CF-4R

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8)

1331 Commons Dr. - SACRAMENTO, CA 95825
Project Address

ELITE HEATING AND AIR / 786819

Contractor Name / License No.

0610764

Contractor Contact

Telephone Permit Number

Robert Vincent

916-988-5441 35910

HERS Rater

Telephone Sample Group Number

July 26, 2006 CC14-1798376492

Date Certificate Number

Certifying Signature

HERS Provider: CalCERTS

Firm:

Associated HERS Raters

City/State/Zip: Folsom / CA / 95630

Street Address: 9580 Oak Ave.

Copies to: Homeowner, HERS Provider and Building Department

This CF-4R has been registered with the CalCERTSA® registry in accordance with the Title 24 & Title 20 of the CCR. CalCERTSA® is an approved HERS provider by the California Energy Commission.

HERS RATER COMPLIANCE STATEMENT

The house was Tested Approved as part of sample testing, but was not tested. As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked on this form. The HERS rater must check and verify that the new distribution system is fully ducted and correct tape is used before a CF-4R may be released on every tested building. The HERS rater must not release the CF-4R until a properly completed and signed CF-6R has been received for the sample and tested buildings.

- The installer has provided a copy of the CF-6R (Installation Certificate).
- New Distribution system is fully ducted (i.e., does not use building cavities as plenums or platform returns in lieu of ducts).
- New systems where cloth backed, rubber adhesive duct tape is installed, mastic and drawbands are used in combination with cloth backed, rubber adhesive duct tape to seal leaks at duct connections.

MINIMUM REQUIREMENTS FOR DUCT LEAKAGE REDUCTION COMPLIANCE CREDIT:

NEW CONSTRUCTION		Measured Values	
Duct Pressurization Test Results (CFM @ 25 Pa)		N/A	
1	Enter Tested Leakage Flow in CFM:		
2	Fan Flow: Calculated (Nominal x Cooling or Heating) or Measured Enter Total Fan Flow in CFM:	1400	
3	Pass If Leakage Percentage $\leq 6\%$ [$100 \times (\text{Line 1} / \text{Line 2})$]:	N/A	N/A
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
4 Enter Tested Leakage Flow in CFM from CF-6R: Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.			
5	Enter Tested Leakage Flow in CFM: Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.	86	
6	Enter Reduction in Leakage for Altered Duct System (Line 4 - Line 5) - (Only if Applicable)		
7	Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)		
8	Enter New Duct System - Pass If Leakage Percentage $\leq 6\%$ [$100 \times (\text{Line 5} / \text{Line 2})$]:		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out, use one of the following four Test or Verification Standards for compliance:			
9	Pass If Leakage Percentage $\leq 15\%$ [$100 \times (\text{Line 5} / \text{Line 2})$]:	8.14%	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
10	Pass If Leakage to Outside Percentage $\leq 10\%$ [$100 \times (\text{Line 7} / \text{Line 2})$]:		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11	Pass If Leakage Reduction Percentage $\geq 80\%$ [$100 \times (\text{Line 6} / \text{Line 4})$] and Verification by Smoke Test and Visual Inspection		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
12	Pass If Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Pass if One of Lines #9 through #12 pass			

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3-4 of 8)

CF-4R

1331 Commons Dr. - SACRAMENTO, CA 95825
Project Address

ELITE HEATING AND AIR / 786819
Contractor Name / License No.

Contractor Contact
Robert Vincent
HERS Rater

0610764
Telephone Permit Number
916-988-5441 35910
Telephone Sample Group Number
July 26, 2006 CC14-1798376492
Date Certificate Number

Company Signature
Firm: Associated HERS Raters
Street Address: 9580 Oak Ave.

HERS Provider: CalCERTS
City/State/Zip: Folsom / CA / 95630

Copies to: Homeowner, HERS Provider and Building Department

This CF-4R has been registered with the CalCERTS® registry in accordance with the Title 24 B, Title 20 of the CCR. CalCERTS® is an approved HERS provider by the California Energy Commission.

HERS RATER COMPLIANCE STATEMENT

The house was Tested Approved as part of sample testing, but was not tested.
As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked on this form.
 The installer has provided a copy of the CF-6R (Installation Certificate).

THERMOSTATIC EXPANSION VALVE (TXV):

Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.

HVAC System TXV | Pass Fail

INSTALLATION CERTIFICATE

(Page 2 of 12)

CF-6R

1331 COMMONS DR.

SACRAMENTO CA 95825

0610764
Permit Number

Site Address

An installation certificate is required to be posted at the building site or made available for all appropriate inspections. (The information provided on this form is required.) After completion of final inspection, a copy must be provided to the building department (upon request) and the building owner at occupancy, per Section 10-103(a).

HVAC SYSTEMS:

Heating Equipment

Equip Typ (pkg. heat pum)	CEC Certified Mfr. Name, Model and Serial Number	# of Identical Systems	Efficiency (AFUE, etc.) ¹ >(CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
	N/A	1	AFUE	ATTIC			
Split Sys							
HP							

Cooling Equipment

Equip Typ (pkg. heat pum)	CEC Certified Mfr. Name, Model and Serial Number	# of Identical Systems	Efficiency (AFUE, etc.) ¹ >(CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
	HEIL	1	13.06 SEER	ATTIC			
Split Sys	IMH 342GKA E067042168						
HP	HEIL FSM4X2600A A261482299						

¹ > symbol reads greater than or equal to what is indicated on the CF-1R value. Include both SEER and EER if compliance credit for high EER air conditioner is claimed.

I, the undersigned, verify that equipment listed above is: 1) the actual equipment installed, 2) equivalent to or more efficient than that specified in the certificate of compliance (Form CF-1R) submitted for compliance with the Energy Efficiency Standards for residential buildings, and 3) equipment that meets or exceeds the appropriate requirements for manufactured devices (from the Appliance Efficiency Regulations or Part 6), where applicable.

[Signature] 07/26/07
Signature, Date

ELITE HEATING AND AIR
Installing Subcontractor (Co. Name)
OR General Contractor (Co. Name) OR Owner

COPY TO: Building Department
HERS Rater (if applicable)
Building Owner at Occupancy

INSTALLATION CERTIFICATE (Page 4 of 12) CF-6R
 1331 COMMONS DR. SACRAMENTO CA 95825 0610764
 Site Address Permit Number

INSTALLER COMPLIANCE STATEMENT FOR DUCT LEAKAGE

Copies to: Builder, HERS Rater, Building Owner, at Occupancy and Building Department

INSTALLER COMPLIANCE STATEMENT

The building was: Tested at Final Tested at Rough-in

INSTALLER VISUAL INSPECTION AT FINAL CONSTRUCTION STAGE:

- Remove at least one supply and one return register, and verify that the spaces between the register boot and the interior finishing walls are properly sealed.
- 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.
- Inspect all joints to ensure that no cloth backed rubber adhesive duct tape is used.

DUCT LEAKAGE REDUCTION

Procedures for field verification and diagnostic testing of air distribution systems are available in RACM, Appendix RCA.3

NEW CONSTRUCTION:		Measured Values	
Duct Pressurization Test Results (CFM @ 25 Pa)			
1 Enter Tested Leakage Flow in CFM:			
2 Fan Flow: Calculated (Nominal: <input checked="" type="checkbox"/> Cooling <input type="checkbox"/> Heating) or <input type="checkbox"/> Measured If Fan Flow is Calculated as 400 cfm/ton x number of tons or as 2.7 cfm/(kBtu/hr) x Heating Capacity in Thousands of Btu/hr, enter total calculated or measured fan flow in CFM here:		1400	
3 Pass if Leakage Percentage < 8% for Final or < 4% at Rough-in: [100 x (Line # 1) / (Line # 2)]			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
4 Enter Tested Leakage Flow in CFM from Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out:			
5 Enter Tested Leakage Flow in CFM from Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out:		86	
6 Enter Reduction in Leakage for Altered Duct System [(Line # 4) Minus (Line # 5)] - (Only if Applicable)			
7 Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)			
8 Enter New Duct System - Pass if Leakage Percentage < 8% for Final or < 4% at Rough-in [100 x (Line # 6) / (Line # 7)]			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out			
Use one of the following four Test or Verification Standards for compliance:			
9 Pass if Leakage Percentage < 15% [100 x (Line # 5) / (Line # 2)]		6.2	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
10 Pass if Leakage to Outside Percentage < 10% [100 x (Line # 7) / (Line # 2)]			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11 Pass if Leakage Reduction Percentage < 80% [100 x (Line # 6) / (Line # 4)]			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
12 Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Pass if One of Lines # 9 through # 12 pass			<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

I, the undersigned, verify that the above diagnostic test results were performed in conformance with the requirements for compliance credit. I, the undersigned, also certify that the newly installed or retrofit Air-Distribution System Ducts, Plenums and Fans comply with Mandatory requirements specified in Section 100 (m) of the 2000 Building Energy Efficiency Standards.

[Signature]
 Signature Date

ELITE HEATING AND AIR
 Installing Subcontractor (Co. Name) OR
 General Contractor (Co. Name)

INSTALLATION CERTIFICATE

(Page 5 of 12)

CF-0R

1331 COMMONS DR.

SACRAMENTO CA 95825

0612764
 Permit Number

Site Address

THERMOSTATIC EXPANSION VALVE (TXV)

Procedures for field verification of thermostatic expansion valves are available in RACM, Appendix R1.

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.				
<input checked="" type="checkbox"/>			<table border="1" style="width: 100%;"> <tr> <td>Yes is a pass</td> <td><input checked="" type="checkbox"/> Pass</td> <td><input type="checkbox"/> Fail</td> </tr> </table>	Yes is a pass	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
Yes is a pass	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail				

REFRIGERANT CHARGE MEASUREMENT

Verification for Required Refrigerant Charge and Adequate Airflow for Split System Space Cooling Systems without Thermostatic Expansion Valves

Outdoor Unit Serial #	
Location	
Outdoor Unit Make	
Outdoor Unit Model	
Cooling Capacity	Btu/hr
Date of Verification	
Date of Refrigerant Gauge Calibration	(must be checked monthly)
Date of Thermocouple Calibration	(must be checked monthly)

Standard Charge Measurement Procedure (outdoor air dry-bulb 65oF and above):

Procedures for Determining Refrigerant Charge using the Standard Method are available in RACM, Appendix RD2.

Note: The system should be installed and charged in accordance with the manufacturer's specifications before starting this procedure.

Measured Temperatures

Supply (evaporator leaving) air dry-bulb temperature (Tsupply, db)		
Return (evaporator entering) air dry-bulb temperature (Treturn, db)		
Return (evaporator entering) air wet-bulb temperature (Treturn, wb)		
Evaporator saturation temperature (Tevaporator, sat)		
Suction line temperature (Tsuction, db)		
Condenser (entering) air dry-bulb temperature (Tcondenser, db)		

Superheat Charge Method Calculations for Refrigerant Charge

Actual Superheat = Tsuction, db - Tevaporator, sat		
Target Superheat (from Table RD-2)		
Actual Superheat - Target Superheat (System passes if between -3 and +5°F)		

Temperature Split Method Calculations for Adequate Airflow

Split Method Calculation is not necessary if Adequate Airflow credit is taken

Actual Temperature Split = Treturn, db - Tsupply, db		
Target Temperature Split (from Table RD-3)		
Actual Temperature Split - Target Temperature Split (System passes if between -3°F and +3°F or, upon re-measurement, if between -5°F and -10°F)		

INSTALLATION CERTIFICATE

(Page 8 of 12)

CF-6R

1331 COMMONS DR.

SACRAMENTO CA 95825

PERM NO 7-64
Permit Number

Site Address

Standard Charge Measurement Summary:

System shall pass both refrigerant charge and adequate airflow calculation criteria from the same measurements. If corrective actions were taken, both criteria must be remeasured and recalculated.

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	System Passes
--------------------------	-----	--------------------------	----	---------------

Alternate Charge Measurement Procedure (outdoor air dry-bulb below 58 °F)

Note: The system should be installed and charged in accordance with the manufacturer's specifications and installer verification shall be documented on CF-6R before starting this procedure. If outdoor air dry-bulb is 55 °F or above, installer shall use the Standard Charge Measure Procedure.

Procedures for Determining Refrigerant Charge using the Alternate Method are available in RACM, Appendix RD3.

Weight-In Charging Method for Refrigerant Charge

Actual liquid line length:		ft
Manufacturer's Standard liquid line length:		ft
Difference (Actual - Standard):		ft
Manufacturer's correction (ounces per foot) _____ x difference in length = _____ ounces		
(+ = add) (- = remove)		

Measured Airflow Method for Adequate Airflow Verification available in RACM, Appendix RD3, 4

Calculated Airflow; Cooling Capacity (Btu/hr)	X 0.032 (min/ft ² -hr) =	CFM
Measured Airflow is	CFM (Measured airflow must be greater than the calculated airflow).	

Alternate Airflow Measurement Summary:

System shall pass both refrigerant charge and adequate airflow calculation criteria from the same measurements. If corrective actions were taken, both criteria must be remeasured and recalculated.

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	System Passes
--------------------------	-----	--------------------------	----	---------------

H. B. Coates 07/26/07
Signature, Date

ELITE HEATING AND AIR

Installing Subcontractor (Co. Name) OR
General Contractor (Co. Name) OR Owner

COPY TO: Building Department
HERS Rater (if applicable)
Building Owner at Occupancy