

10 Ripple Ct Sacramento ca 95831  
 Site Address Permit Number: 0615738

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**

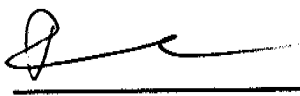
Equip. Type (pkg. heat)	CEC Certified Mfg. Name, Model, and Serial No.	# of Identical Systems	Efficiency (AFUE, etc) <sup>1</sup> >(CF-1R value)	Duct Location	Duct or Piping R-Value	Heating Load (kBtu/hr)	Heating Capacity (kBtu/hr)
Split	AMANA	1	93.00 AFUE	In Ground	6		70
Furnace	ACV90704						

**Cooling Equipment**

Equip. Type (pkg. heat pump)	CEC Certified Mfg. Name, Model, and Serial No.	# of Identical Systems	Efficiency (AFUE, etc) <sup>1</sup> >(CF-1R value)	Duct Location	Duct or Piping R-Value	Cooling Load (kBtu/hr)	Cooling Capacity (kBtu/hr)
Split	AMANA	1	15.00 SEER	In Ground	6		42
A/C	RCE42		12.50 EER				
Coil	ADP						
	JE48460C215						

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.

II, the undersigned, verify that equipment listed above is: 1) is 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.

 10/16/06

Signature and Date

Valley Heating & Air

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

56

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

5030-9

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 wall 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 RC4.3

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 21.7 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 < 6% for Final or < 4% at Rough-in: [100 x [ _____ (Line # 1) / _____ (Line # 2)]]		190	<input checked="" 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.			
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 Entire New Duct System - Pass if Leakage Percentage < 6% for Final or < 4% at Rough-in [100 x [ _____ (Line # 5) / _____ 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 < 15% [100 x [ _____ (Line # 5) / _____ (Line # 2)]]		1490	<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 < 60% [100 x [ _____ (Line # 6) / _____ (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			<input 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 150 (m) of the 2005 Building Energy Efficiency Standards.

*Gary DeBruy* 10-26-06  
 Signature Date

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

10 Ripple Ct Sacramento ca 95831  
 Site Address Permit Number:

THERMOSTATIC EXPANSION VALVE (TXV)

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

<input checked="" 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.		
		Yes is a Pass	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

REFRIGERANT CHARGE MEASUREMENT PROCEDURE

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 55oF 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

Measured Temperatures

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

Superheat Charge Method Calculations for Refrigerant Charge

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

Temperature Split Method Calculations for Adequate Airflow

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

Actual Temperature Split = T return, db - Tsupply, db		F
Target Temperature Split (from Table RD3)		F
Actual Temperature Split - Target Temperature Split (System passes if between -3°F and +3°F or, upon remeasurement, if between -3°F and -10°F)		F

<b>10 Ripple Ct</b>	<b>Sacramento</b>	<b>ca</b>	<b>95831</b>
<b>Site Address</b>	<b>Permit Number:</b>		

**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
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**Alternate Charge Measurement Procedure (outdoor air dry-bulb below 55 oF)**

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 oF 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.

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**

Calculated Airflow: Cooling Capacity (Btu/hr)		X 0.033 (cfm/Btu-hr)		CFM
Measured Airflow is _____ CFM (Measured airflow must be greater than the calculated)				

**Alternate 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
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 \_\_\_\_\_  
 Signature, Date 10/16/06

**Valley Heating & Air** \_\_\_\_\_  
 Installing Subcontractor (Co. Name) OR  
 General Contractor (Co. Name) OR Owner

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

56  
 5030-9

10 Ripple Ct Sacramento ca 95831  
 Site Address Permit Number:

**FAN WATT DRAW**

Procedures for measuring the air handler watt draw are available in RACM, Appendix RE3.2.

Method For Fan Watt Draw Measurement			
<input type="checkbox"/>	<input type="checkbox"/>	RE3.2.1	Portable Watt Meter Measurement
<input type="checkbox"/>	<input type="checkbox"/>	RE3.2.2	Utility Revenue Meter Measurement
		Measured Fan watt Draw:	Enter results of Watts/cfm:
		Measured Fan Flow (Enter total cfm from airflow verification)	Enter results of Watts/cfm:
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
		Calculated fan watt/cfm is equal to or lower than the fan watt/cfm draw documented in CF-1R	Yes is a pass
			<input type="checkbox"/> Pass <input type="checkbox"/> Fail

**ADEQUATE AIRFLOW VERIFICATION**

Procedures for field verification and diagnostic testing of adequate airflow are available in RACM, Appendix RE4.1.

Method For Airflow Measurement			
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
		Duct design exists on plans	
<input type="checkbox"/>	RE4.1.1	Diagnostic Fan Flow Using Flow Capture Hood	
<input type="checkbox"/>	RE4.1.2	Diagnostic Fan Flow Using Plenum Pressure Matching	
<input type="checkbox"/>	RE4.1.3	Diagnostic Fan Flow Using Flow Grid Measurement	
		Measured Airflow:	cfm/ton
<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
		Measured airflow is greater than the criteria in Table RE-2	Pass Fail

**MAXIMUM COOLING CAPACITY**

Procedures for determining maximum cooling load capacity are available in RACM, Appendix RF3.

1	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Adequate airflow verified (see adequate airflow credit)	
2	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Refrigerant charge or TXV	
3	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Duct Leakage reduction credit verified	
4	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Cooling capacities of installed systems are ≤ to maximum cooling capacity indicated on the Performance's CF-1R and RF-3.	
5	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		If the cooling capacities of installed systems are > than maximum cooling capacity in the CF-1R, then the electrical input for the installed systems must be ≤ to electrical input in the CF-1R.
						Yes to 1, 2, and 3; and Yes to either 4 or 5 is a pass

**HIGH EER AIR CONDITIONER**

Procedures for verification are available in RACM, Appendix RI.

1	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	EER values of installed systems match the CF-1R For split system, indoor coil is matched to outdoor coil Time Delay Relay Verified (if Required)	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
2	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		
3	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No		
						Yes to 1 and 2; and 3 (if Required) is a pass

*[Signature]* 10/16/00

Tests Performed Signature / Date

Valley Heating & Air  
 Installing Subcontractor (Co. Name) OR  
 General Contractor (Co. Name)

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

<b>10 Ripple Ct - Sacramento, ca 95831</b>	<b>Valley Heating &amp; Air / 327383</b>
Project Address	Contractor Name / License No.
	06-15738
Contractor Contact	Telephone
Patricia Siedentopf	916-410-5340
HERS Rater	Permit Number
<i>[Signature]</i>	43979
October 18, 2006	Sample Group Number
Date	CC14-1798384566
	Certificate Number
Firm: Energy Analysis and Comfort Solutions, Inc.	HERS Provider: CalCERTS
Street Address: PO Box 2233	City/State/Zip: Oranvale / CA / 95662

Copies to: Homeowner, HERS Provider and Building Department

This CF-4R has been registered with the CalCERTS® registry in accordance with the Title 24 & 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

**CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 5 of 8) CF-4R**

<b>10 Ripple Ct - Sacramento, ca 95831</b> Project Address	<b>Valley Heating &amp; Air / 327383</b> Contractor Name / License No. 06-15738
Contractor Contact <b>Patricia Siedentopf</b>	Telephone <b>916-410-5340</b>
HERS Rater <i>Patricia Siedentopf</i> Certifying Signature	Permit Number <b>43979</b>
Date <b>October 18, 2006</b>	Sample Group Number <b>CC14-1798384565</b>
Firm: <b>Energy Analysis and Comfort Solutions, Inc.</b>	HERS Provider: <b>CalCERTS</b>
Street Address: <b>PO Box 2233</b>	City/State/Zip: <b>Oranvale / CA / 95662</b>

Copies to: Homeowner, HERS Provider and Building Department  
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**HERS RATER COMPLIANCE STATEMENT**  
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 The installer has provided a copy of the CF-6R (Installation Certificate).

**HIGH EER AIR CONDITIONER:**

Procedures for verification are available in RACM, Appendix RJ.

1	<input type="checkbox"/> Yes <input type="checkbox"/> No	EER values of installed systems match the CF-1R
2	<input type="checkbox"/> Yes <input type="checkbox"/> No	For split systems, Indoor coil is matched to outdoor coil
3	<input type="checkbox"/> Yes <input type="checkbox"/> No	Time Delay Relay Verified (If Required)

HVAC System: Yes to 1 and 2; and 3 (If Required) is a pass  Pass  Fail