

060695  
 2 Cedar Grove Ct

**CERTIFICATE OF COMPLIANCE: RESIDENTIAL** (Page 1 of 5) **CF-1R**

Project Title: john villagas  
 Project Address: 2 cedar grove ct. Sacramento CA 95831  
 Documentation Author: Gerald Fowler Telephone: 916-455-4548  
 Compliance Method (Prescriptive): Prescriptive Climate Zone: 12

Date
Building Permit #
Plan Check / Date
Field Check / Date
Enforcement Agency Use Only

Alternative Component Package Method: (check one) C  X D  D (Alternative)  
 Package C and Package D choices require HERS rater field verification and/or diagnostic testing (see CF-1R page 3)  
 For Package D Alternative see Appendix B Table 151-C Footnotes 7-14

**GENERAL INFORMATION**

Total Conditioned Floor Area (CFA) 1350 ft<sup>2</sup> Average Ceiling Height: 8 ft  
 Maximum Allowed West Facing Fenestration Products Per Table 151-B or 151-C NA ft<sup>2</sup> (5% X CFA)  
 Maximum Allowed Total Fenestration Products Per Table 151-B or 151-C NA ft<sup>2</sup> (20% X CFA)  
 Building Type: (check one or more)  Single Family  Multifamily  Addition  Alteration  
 (If adding fenestration fill out WS-4R, Fenestration Maximum Allowed Area Worksheet and see Section 8.3.2 for Additions and 8.3.3 for Alterations.)  
 Number of Stories: 1 Number of Dwelling Units: 1  
 Floor Construction Type: Slab Slab/Raised Floor (circle one or both)  
 Front Orientation: W = 270 North / South / East / West / All Orientations (input front orientation in degrees from True North and circle one).

**RADIANT BARRIER** (required in climate zones 2, 4, 8-15)

**OPAQUE SURFACES INCLUDING OPAQUE DOORS**

Component Type (Wall, Roof, Floor, Slab Edge, Doors)	Frame Type (Wood or Metal)	Cavity Insulation R-Value	Continuous Insulation R-Value	Assembly Ufactor (for wood, metal frame and mass assemblies) 1	Joint Appendix IV Reference	Roof Radiant Barrier Installed Yes or No	Location/Comments (attic, garage, typical, etc.)

1) See Joint Appendix IV in Section IV.2, IV.3 and IV.4, which is the basis for the U-factor criterion. U-factors can not exceed prescriptive value to show equivalence to R-values.

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**FENESTRATION PRODUCTS - U-FACTOR AND SHGC**

FENESTRATION MAXIMUM ALLOWED AREA WORKSHEET WS-4R -must be included for New Construction, Additions and Alterations.

Fenestration #/Type/Pos. (Front, Left, Rear, Right, Skylight)	Orientation, N, S, E, W1	Area (ft2)	U-factor2	U-factor Source3	SHGC4	SHGC Source5	Exterior Shading/Overhangs6, 7 Ck box if WS-3R is included

- 1) Skylights are now included in West-facing fenestration area if the skylights are tilted to the west or tilted in any direction when the pitch is less than 1:12. See §151(f)3C and in Section 3.2.3 of the Residential Manual
- 2) Enter values in this column are either NFRC Rated value or from Standards default Table 116A.
- 3) Indicate source either from NFRC or Table 116A,
- 4) Enter values in this column from NFRC or from Standards Default Table 116B or adjusted SHGC from WS-3R.
- 5) Indicate source either from NFRC or Table 116B.
- 6) Shading Devices are defined in Table 3-3 in the Residential Manual and see WS-3R to calculate Exterior Shading devices.
- 7) See Section 3.2.4 in the Residential Manual.

**HVAC SYSTEMS**

Heating Equipment Type and Capacity (furnace, heat pump, boiler, etc.)	Minimum Efficiency (AFUE or HSPF)	Distribution Type and Location (ducts, attic, etc.)	Duct or Piping R-Value	Thermostat Type	Configuration (split or package)
Furnace	80.00 AFUE	Attic	R 4.2	Programable	Split
60 kBTU					

Cooling Equipment Type and Capacity (A/C, Heat Pump, Evap Cool)	Minimum Efficiency (SEER or EER)	Duct Location (attic, etc.)	Duct R-Value	Thermostat Type	Configuration (split or package)
A/C	13.00 SEER	Attic	R 4.2	Programable	Split
30 kBTU	11.00 EER				

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**SEALED DUCTS and TXVs (or Alternative Measures)**

A signed CF-4R Form must be provided to the building department for each home for which the following are required.

<input type="checkbox"/>	Sealed Ducts (all climate zones) (Installer testing and certification and HERS rater field verification required.)
<input type="checkbox"/>	TXVs, readily accessible (climate zones 2 and 8-15 only) (Installer testing and certification and HERS Rater field verification required.)
<input type="checkbox"/>	Refrigerant Charge (climate zones 2 and 8-15 only) (Installer testing and certification and HERS Rater field verification required.)

OR

<input type="checkbox"/>	Alternative to Sealed Ducts and Refrigerant Charge /TXVs (See Package D Alternative Package Features for Project Climate Zone in the RM Appendix B Table 151-C, Footnotes 7-14.
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OR

<input type="checkbox"/>	For additions and alterations, duct systems that are not documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Residential ACM Manual and duct systems with more than 40 linear feet in unconditioned spaces shall meet the requirements of Section 150(m) and duct insulation requirements of Package D.
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**WATER HEATING SYSTEMS**

<input type="checkbox"/>	Check box if system meets criteria of a "Standard" system. Standard system is one gas-fired water heater per dwelling unit. If the water heater is a storage type, 50 gallons is the maximum capacity and recirculation system is not allowed.
<input type="checkbox"/>	Check box when using Preapproved Alternative Water Heating table, Table 5-4 in Chapter 5 in the Residential Manual. No water heating calculations are required, and the system complies automatically.
<input type="checkbox"/>	Check box if system does not meet criteria of "Standard" system, and does not comply with the Preapproved Alternative Water Heating table. In this case, the Performance Method must be used and must be included in the submittal.
<input type="checkbox"/>	Check box to verify that a time control is required for a recirculating system pump for a system serving multiple units

**Systems serving single dwelling units**

Water Heater Type/Fuel Type	Distribution Type	Number in System	Rated Input <sup>1</sup> (kW or Btu/hr)	Tank Capacity (gallons)	Energy Factor <sup>1</sup> or Thermal Efficiency	Standby <sup>1</sup> Loss (%)	Tank External Insulation R-Value

**System serving multiple dwelling units**

Water Heater Type/Fuel Type	Distribution Type	Number in System	Rated Input <sup>1</sup> (kW or Btu/hr)	Tank Capacity (gallons)	Energy Factor <sup>1</sup> or Thermal Efficiency	Standby <sup>1</sup> Loss (%)	Tank External Insulation R-Value

<sup>1</sup> For small gas storage water heaters (rated inputs of less than or equal to 75,000 Btu/hr), electric resistance, and heat pump water heaters, list Energy Factor. For large gas storage water heaters (rated input of greater than 75,000 Btu/hr), list Rated Input, Recovery Efficiency, Thermal Efficiency and Standby Loss. For instantaneous gas water heaters, list Rated Input and Thermal Efficiencies.

**Pipe Insulation** (kitchen lines > 3/4 inches) All hot water pipes from the heating source to the kitchen fixtures that are 1/2 inches or greater in diameter shall be thermally insulated as specified by Section 150 (j) 2 A or 150 (j) 2 B.

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**SPECIAL FEATURES NOT REQUIRING HERS VERIFICATION (add extra sheets if necessary)**

Indicate which special features are part of this project. The list below represents special features relevant to the Prescriptive and Performance Method.

	Feature	Required Forms (if applicable)	Description
<input type="checkbox"/>	Metal Framed Walls	CF-1R	
<input type="checkbox"/>	Radiant Barriers	CF-1R	
<input type="checkbox"/>	Exterior Shades	WS-4R N/A; Performance Calculation	
<input type="checkbox"/>	Cool Roof	Required. Attach CRRC Label to Forms.	
<input type="checkbox"/>	Dedicated Hydronic Heating System	Performance Calculation Required; Attach Run to Forms.	
<input type="checkbox"/>	Combined Hydronic System	Performance Calculation Required; Attach Run to Forms.	
<input type="checkbox"/>	Gas Cooling	N/A; Performance Calculation Required.	
<input type="checkbox"/>	Burled Ducts	N/A; Indicate on building plans.	
<input type="checkbox"/>	Kitchen Pipe Insulation	See Section 5.6.2 Distribution Systems in Residential Manual.	
<input type="checkbox"/>	Multiple Water Heaters Per Dwelling Unit	See Table 5-13 or use Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Central Water Heating System Serving Multiple Dwellings	Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Non-NAECA Large Water Heater	CF-1R	
<input type="checkbox"/>	Indirect Water Heater	See Table 5-13 or use Performance Calculation and attach Run to Forms	
<input type="checkbox"/>	Instantaneous Gas Water Heater	See Table 5-13 or use Performance Calculation and attach Run to Forms	
<input type="checkbox"/>	Solar Water Heating System	See Table 5-13 or use Performance Calculation and attach Run to Forms	
<input type="checkbox"/>	Wood Stove Boiler	Performance Calculation and attach Run to Forms	

**SPECIAL FEATURES REQUIRING HERS RATER VERIFICATION**


(add extra sheets if necessary) Indicate to the HERS Rater which credits are part of this project and need verification.

	Feature	Required Forms (if applicable)	Description
<input type="checkbox"/>	Duct Sealing	CF-6R part 4 of 12	
<input type="checkbox"/>	Refrigerant Charge	CF-6R part 5 of 12	
<input type="checkbox"/>	Thermostatic Expansion Valve	CF-6R part 6 of 12	



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

**CF-4R**

2 cedar grove ct. Project Address		Ace Plumbing Heating and Air / 313506 Contractor Name / License No.	
		06-06995. Permit Number	
Contractor Contact	Telephone	Permit Number	
Max McKinney	916-698-4185	29688	
HERS Rater	Telephone	Sample Group Number	
	June 23, 2006	CC14-1798370270	
Certifying Signature		Date	Certificate Number
Firm:	Energy Analysis and Comfort Solutions, Inc.	HERS Provider:	CalCERTS
Street Address:	PO Box 2233	City/State/Zip:	Orangevale / 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 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**

	Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:	N/A	
2	Fan Flow: Calculated (Nominal <input type="radio"/> Cooling <input type="radio"/> Heating) or <input checked="" type="radio"/> Measured Enter Total Fan Flow in CFM:	1000	
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.	48	
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	Entire 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 $\leq 15\%$ [ $100 \times ( \text{Line 5} / \text{Line 2} )$ ]:	4.80%	<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 $\geq 60\%$ [ $100 \times ( \text{Line 6} / \text{Line 4} )$ ] 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		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

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

CF-4R

2 cedar grove ct.		Ace Plumbing Heating and Air / 313506	
Project Address		Contractor Name / License No.	
		06-06995.	
Contractor Contact		Telephone	Permit Number
Max McKinney	916-698-4185		29688
HERS Rater	Telephone	Sample Group Number	
	June 23, 2006	CC14-1798370270	
Certifying Signature	Date	Certificate Number	
Firm:	Energy Analysis and Comfort Solutions, Inc.	HERS Provider: CalCERTS	
Street Address:	PO Box 2233	City/State/Zip: Orangevale / 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

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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 pump)	CEC Certified Mfr. Name, Model and Serial Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> >(CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
Split	TRANE	1	80.00 AFUE	Attic	R 4.2	54552	60000
	tue060a936a1						

**Cooling Equipment**

Equip Typ (pkg. heat pump)	CEC Certified Mfr. Name, Model and Serial Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> >(CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
Split	TRANE	1	13.00 SEER	Attic	R 4.2	29724	30000
	2ttb3030a1000a1		11.00 EER				
Coil	ADP						
	te37436c145						

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) 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.

  
Signature, Date

**Ace Plumbing**

Installing Subcontractor (Co. Name) 11002  
OR General Contractor (Co. Name) OR Owner 1015

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



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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:

Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
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:	1000	
3 Pass if Leakage Percentage < 6% 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.	48	
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 [ 48 (Line # 5) / 1000 (Line # 2) ]]	4.8%	<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) ]]		<input type="checkbox"/> Pass	<input type="checkbox"/> Fail
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 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 150 (m) of the 2005 Building Energy Efficiency Standards.

*[Signature]* 6/22/06  
Signature Date

**Ace Plumbing**  
Installing Subcontractor (Co. Name) OR 11002  
General Contractor (Co. Name) 1015

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THERMOSTATIC EXPANSION VALVE (TXV)

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

<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

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 procedure.

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 (Tasuction, db)	F
Condenser (entering) air dry-bulb temperature (Tcondenser, db)	F

Superheat Charge Method Calculations for Refrigerant Charge

Actual Superheat = Tasuction, 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 = Treturn, 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

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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.

Weigh-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 RD2.6

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 airflow).		

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

**Ace Plumbing**

Installing Subcontractor (Co. Name) OR 11002  
General Contractor (Co. Name) OR Owner 1015

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