



## City of Rocklin Building Division

3970 Rocklin Road • Rocklin CA 95677 • (916) 625-5120 • (Fax) 625-5195

### **HVAC ALTERATIONS/CHANGE OUTS**

- A mechanical permit is required to replace heating and air conditioning equipment.
- A gas test is required when installing more than 6ft of gas line.
- Manufactured devices must be certified by the "California Energy Commission".
- Installation shall meet listing requirements (minimum circuit requirements, maximum fuse or circuit breaker) and shall comply with the "2013 California Mechanical Code".

CF-1R A LT Form shall be submitted along with the building permit application. Both the Building Designer (contractor or homeowner) and Documentation Author shall sign the CF-1R ALT Form.

### **Efficiencies of HVAC Equipment**

When HVAC equipment will be added or replaced that the HVAC equipment efficiencies identified on the CF-1R ALT Form need to meet the minimum HVAC efficiency requirements in the \*2014 Appliance Efficiency Regulations:

- Single phase air conditioners and heat pumps with an output capacity below 65,000 BTU/hr shall have a minimum 13 Seasonal Energy Efficiency Ratio (SEER)
- Central furnaces with an output capacity below 225,000 BTU/hr shall have a minimum 78% Annual Fuel Utilization Efficiency (AFUE).

When higher efficient equipment (above 13SEER or above 78%AFUE) is identified on the CF-1R ALT Form, the higher HVAC efficiency values shall be verified in the field.

### **Non-Central Gas Heaters**

Non-ducted, non-central gas fired heating equipment (wall furnace, space heater, etc.) identified on the CF-1R ALT Form shall meet the minimum efficiency requirements in Table E-2 of the \*2014 Appliance Efficiency Regulations.

Table E-2 (2014 Appliance Efficiency Regulations)

Appliance	Design Type	Capacity (BTU per hour)		Minimum AFUE (%)
Wall Furnace	Fan	42,000		73
Wall Furnace	Fan	>42,000		74
Wall Furnace	Gravity	10,000		59
Wall Furnace	Gravity	>10,000	12,000	60
Wall Furnace	Gravity	>12,000	15,000	61
Wall Furnace	Gravity	>15,000	19,000	62
Wall Furnace	Gravity	>19,000	27,000	63
Wall Furnace	Gravity	>27,000	46,000	64
Wall Furnace	Gravity	>46,000		65
Floor Furnace	All	37,000		56
Floor Furnace	All	>37,000		57
Room Heater	All	18,000		57
Room Heater	All	>18,000 and	20,000	58
Room Heater	All	>20,000 and	27,000	63
Room Heater	All	>27,000 and	46,000	64
Room Heater	All	>46,000		65

**Duct Insulation**

When ducting will be added or replaced the duct insulation values identified on the CF-1R ALT Form need to meet the Prescriptive duct insulation requirements:

- 40 linear feet or less of ducts are added in unconditioned space: R-4.2 [Mandatory Measures ISO(m)]
- More than 40 linear feet of ducts are added in unconditioned space: Duct insulation requirements of Package D.
- Newly installed ducted HVAC systems shall meet the Prescriptive duct insulation requirements of Package D listed in Standards Table 151-C

When higher duct insulation values (above R-4.2) are identified on the CF-1R ALT Form, the higher duct insulation values shall be verified in the field.

**HERS Measures**

Items listed in the HERS Verification Summary on the CF-1R ALT Form identify features that rely on diagnostic testing and independent verification by certified HERS raters to ensure proper field installation. Diagnostic testing and verification by a certified HERS Rater is in addition to local building department inspections. A listing of certified HERS raters maybe found on the HERS provider website at: <http://www.energy.ca.gov/HERS/>

## **Duct Sealing and Testing**

The following HVAC alterations will require duct sealing and testing:

- In Climate Zones 2 and 9 through 16 when the entire existing duct systems is replaced or a new space-conditioning system (HVAC equipment and ducting) will be added, the ducts are to be sealed and tested per §152(b)1Di. Rocklin is Climate Zone 11.
- In Climate Zones 2 and 9 through 16 when more than more 40 linear feet of ducting will be added or replaced in unconditioned space, the ducts are to be sealed and tested per §152(b)1Dii. Rocklin is Climate Zone 11.

Exception: Existing duct systems that are extended, which are constructed, insulated or sealed with asbestos.

In Climate Zones 2 and 9 through 16, when HVAC equipment will be added or replaced (including the air handler, outdoor condensing unit of a split system A/C or heat pump, cooling or heating coil, or the furnace heat exchanger), the ducts are to be sealed and tested per §152(b)1. Rocklin is Climate Zone 11.

Exceptions:

- a. Duct systems that are documented to have been previously sealed, confirmed through HERS verification in accordance with procedures in Reference Residential Appendix RA3.
- b. Duct systems with less than 40 linear feet in unconditioned space.
- c. Existing duct systems constructed, insulated or sealed with asbestos.

When applicable, the applicant shall identify that Duct Sealing and Testing is required under the HERS Verification Summary on Page 5 of the CF-1R ALT Form. A CF-4R form shall be submitted before the Final Inspection.

## **Refrigerant Charge Measurement**

The following HVAC alterations will require a refrigerant charge measurement:

- In Climate Zones 2 and 8 through 15, when a new split space-conditioning system (HVAC equipment and ducting) will be added, a refrigerant charge measurement shall be verified per §15I(f)7A. Rocklin is Climate Zone 11.
- In Climate Zones 2 and 8 through 15, when HVAC equipment will be added or replaced (including the air handler, outdoor condensing unit of a split system A/C or heat pump, cooling or heating coil, or the furnace heat exchanger), a refrigerant charge measurement shall be verified per §152(b)1F. Rocklin is Climate Zone 11.

Exception: Heating only systems. When applicable, the applicant shall identify that a Refrigerant Charge Measurement is required under the HERS Verification Summary on Page 5 of the CF-1R ALT

Form. A CF-4R form shall be submitted before the Final Inspection.

**Airflow (Fan Flow) and Fan Watt Draw**

The following HVAC alterations will require airflow and fan watt draw testing:

- In Climate Zones 10 through 15, when a central space-conditioning system (HVAC Equipment and ducting) is added, the airflow and fan watt draw shall be verified per §151(f)7B. Rocklin is Climate Zone 11.
- In Climate Zones 10 through 15, when the entire existing space-conditioning system (HVAC equipment and ducting) is replaced, the airflow and fan watt draw shall be verified per §152(b)1F. Rocklin is Climate Zone 11.

When applicable, the applicant shall identify that Airflow and Fan Watt Draw testing is required under the HERS Verification Summary on Page 5 of the CF-1R ALT Form. A CF-4R form shall be submitted before the Final Inspection.

For more information and current forms go to:

[http://www.energy.ca.gov/title24/2008standards/residential\\_manual.html#forms](http://www.energy.ca.gov/title24/2008standards/residential_manual.html#forms)

REQUIRED FORMS at Final Inspection:

- CF-4R Certificate of Field Verification and Diagnostic Testing
- CF-6R Installation Certificate

<b>INSPECTION INFORMATION</b>
<ul style="list-style-type: none"><li>➤ Call the inspection line (916) 625-5136 prior to 6:00 a.m. for a same day inspection.</li><li>➤ A gas pressure test is required when over 6 feet of new piping is added or replaced.</li><li>➤ Flue or vent inspection is required before covering work.</li><li>➤ Final inspection is required when the job is complete.</li></ul>
<b><i>All work is subject to field inspection.</i></b>