

Mandatory Measures Summary: Residential (Page 1 of 2) MF-1R

van Crayningen / van Hart Guest House		9/8/2006
Project Title		Date
<p>Special Features and Modeling Assumptions</p> <p>The following information should pay special attention to the items specified in this checklist. These items require special consideration and may be subject to change. The information provided should be used with the performance approach. The final information upon determines the adequacy of the justification, and may need a building or design that otherwise complies based on the results of the special justification and discussion submitted.</p>		
Plan	The DHW System "Taking Tankless" is a Large Gas water heater with Pilot-Loss = 0 btu/h.	
Plan	The DHW System "Tankless Includes" include for a Solar System with a 25.0% Solar Fraction (see CF-5R).	
Plan	The HVAC System "HVAC" is a Combined Hydronic System that uses a Boiler for DHW and Space Heating (see CF-1R).	

HERS Required Verification

This section requires field testing and/or verification by a certified home energy rater under the supervision of a CEC-approved HERS provider using CEC approved testing and/or verification methods and must be reported on the CF-406 installation certificate.

	Plan	Field

[illegible]

(P) Building cavities shall not be used for conveying conditioned air.

(Q) Joints and seams of duct systems and their components shall not be sealed with putty or other materials. Sealant tape is used in combination with mastic and drawbands.

(R) Piping, buried or unburied, for recirculating sections of domestic hot water supply systems shall be installed in a storage tank for an indirect-fired domestic water heating system, cooling system or other equipment. Water pipes from the storage tank for non-recirculating systems shall be in accordance with the requirements of Section 1504.01.

(S) Lamps used in luminaires for general lighting in kitchens and bathrooms shall be of the enclosed type.

(T) In climate zones 14 and 16 a vapor barrier shall be installed on the condensation surface of exterior walls, inverted slabs, and inverted crawl spaces to protect insulation from moisture.

(U) If any new or existing one- or two-family building with 10,000 sq ft or more of conditioned space shall meet the following minimum requirements:

(P) Building cavities shall not be used for conveying conditioned air. Sec. 150 (m)

Before the building may be occupied, installation certificates for manufactured devices regulated by the Appliance Standards or Part 3 shall be posted adjacent to the building permit.

1. Identify features required to verify compliance with the Appliance Standards and Part 6;

2. Include the statement indicating that the installed device conforms to the Appliance Standards and Part 6 and the requirements for such devices given in the plans and specifications approved by the local enforcement agency;

3. State the number of the building permit under which the construction or installation was performed.

Sec. 10-103 (a) (3) (A)

(B) The builder shall provide the building owner, manager and the original occupants the appropriate Certificate(s) of Compliance and a list of the features, materials, components, and mechanical devices installed in the building, and the instructions on how to use them efficiently.

Sec. 10-103 (b) (1)

(C) After installing wall, ceiling, or floor insulation, the installer shall post in a conspicuous location in the building a certificate signed by the installer stating that the installed device conforms to the Appliance Standards and Part 6 and the requirements of the Appliance Standards and Part 6. The certificate shall also state the manufacturer's name and material identifications and the installed R-value.

Sec. 10-103 (a) (4)

(D) Manufactured fenestration products shall be certified for overall U-values and overall SHGC as rated by the National Fenestration Rating Council's NFRC 200.

1. Have a clearly visible temporary label, not to be removed before verification by the enforcement agency, listing the certified U-value, solar heat gain coefficient (SHGC) of the product and the method used to derive those values. Also, the label should indicate compliance with air leakage requirements of Section 1156(a)(1).

2. Have a permanent label meeting the requirements of Section 11011(ii)(2).

Sec. 116 (a)

(E) Field fabricated skimpies and windows, and exterior doors, shall be caulked between the fenestration product and the building, shall be weather-stripped.

EXCEPTION: Unframed glass doors and fire doors.

Sec. 116 (b)

(F) Joints and other openings in the building envelope that are potential sources of air leakage shall be caulked, gasketed, weather-stripped, or otherwise sealed to limit infiltration and exfiltration.

Sec. 117

(G) All insulating material shall be installed in compliance with the flame spread rating smoke density requirements of Section 707 of the IBC.

Sec. 118 (c)

(H) Heat pumps with supplementary electric resistance heaters shall have controls:

1. That prevent supplementary heater operation when the heating load can be met by the heat pump alone; and

2. In which the cut-on temperature for compressor heating is higher than the cut-off temperature for supplementary heating, and the cut-off temperature for compressor heating is higher than the cut-off temperature for supplementary heating.

Sec. 112 (b)

(I) Masonry or factory-built fireplaces shall have the following:

1. Closeable metal or glass doors covering the entire opening of the firebox.

2. A combustion air intake to draw air from the outside of the building directly into the firebox, which is at least six square feet in area, and is readily accessible, operable, and light-tight damper or combustion air control device.

EXCEPTION: Not required if fireplace is installed over a concrete slab and will not be located on an exterior wall.

3. A flue damper with a readily accessible control.

EXCEPTION: When a gas log, log lighter, or decorative gas appliance is installed in a fireplace, the flue damper shall be locked open if required by the manufacturer's installation instructions or the State Mechanical Code.

4. Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Sec. 150 (e)

(J) All heating and/or cooling systems other than wood stoves shall have an automatic thermostat with a clock mechanism or other setback mechanism that shuts the system off during periods of non-use and that allows the building occupant to automatically set back the thermostat set points for at least 2 periods within 24 hours.

Sec. 150 (i)

(K) The air handling duct system shall be constructed, installed, sealed and insulated as provided in Chapter 6 of the Uniform Mechanical Code. (Must be insulated to a minimum installed level of R-4 or 2 or in conditioned space).

Sec. 150 (m)

(L) All fan systems exhausting air from the building to the outside shall be provided with backdraft or automatic dampers to prevent air leakage.

Sec. 150 (m) (7)

(M) Storage water heaters with an energy factor < 0.58 shall be externally wrapped with insulation having installed thermal resistance of R-12 or greater.

Sec. 150 (j) 1A

(N) Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water heating systems, shall be externally wrapped with insulation having an installed thermal resistance of R-12 or greater or have internal insulation of at least R-10 and a label on the exterior of the tank showing the insulation R-value.

Sec. 150 (j) 1B

(O) Duct system openings shall be sealed with mastic, tape (airtight seal), or other duct closure system that meets the applicable requirements of UL 181, UL 181A, or UL181B including collars, corrections and seals. If mastic or tape is used to seal opening greater than 1/4 inch, the combination of mastic and other mesh or tape shall be used.

Sec. 150 (m)

(P) Building cavities shall not be used for conveying conditioned air.

Sec. 150 (m)

(Q) Joints and seams of duct systems and their components shall not be sealed with cloth backer adhesive duct tapes unless such tape is used in combination with mastic and dowels.

Sec. 150 (m)

(R) Piping, buried or unburied, for recirculating systems of domestic hot water systems, piping from the heating source to the storage tank for an indirect-fired domestic water heating system, cooling system piping below 55°F, and the first few feet of hot and cold water piping from the storage tank for non-recirculating systems shall be thermally insulated in accordance with Table No. 1-7.

Sec. 150 (j) (2)

(S) Lamps used in luminaires for general lighting in kitchens and bathrooms shall have efficacy of not less than 40 lumens per watt. (Fluorescent type lighting will meet this requirement).

Sec. 150 (k)

(T) In climate zones 14 and 16 a vapor barrier shall be installed on the conditioned space side of all insulation in all exterior walls, inverted attics, and inverted crawl spaces to protect insulation from condensation.

Sec. 150 (l)

(U) Any new low-rise residential building shall meet the following minimum requirements:

1. Ceiling Insulation (%U): The ceiling portions of ceiling separating conditioned spaces from unconditioned spaces or ambient air shall meet the requirements of either a, or b, below:

a. Ceilings shall be insulated between framing members with insulation resulting in an installed thermal resistance of R-19 or greater for the insulation alone.

ALTERNATIVE TO Section 150 (U) 1: Insulation which is not penetrated by framing members may meet an R-value equivalent to installing R-19 insulation between framing members and accounting for the thermal effects of framing members.

b. The weighted average U-value of ceiling shall not exceed the U-value that would result from installing R-19 insulation between framing members in the entire ceiling and accounting for the effects of framing member.

2. Loose Fill Insulation (%U): When loose fill insulation is installed, the minimum installed weight per square foot shall conform with the insulation manufacturer's installed design weight per square foot as indicated on the manufacturer's label R-value.

3. Wall Insulation (%U): The ceiling portions of frame walls separating conditioned spaces from unconditioned spaces or ambient air shall meet the requirements of either a, or b, below:

a. framed walls shall be insulated between framing members with insulation having an installed thermal resistance of R-13 or greater. Framed foundation walls of heated basements and crawlspace shall be insulated above the outside ground line with insulation having an installed thermal resistance of at least R-13.

ALTERNATIVE TO Section 150 (U) 3: Insulation which is not penetrated by framing members may meet an R-value equivalent to installing R-13 insulation between framing members and accounting for the thermal effects of framing members.

b. The weighted average U-value of walls shall not exceed the U-value that would result from installing R-13 insulation between framing members in the entire ceiling and accounting for the effects of framing member.

4. Raised Floor Insulation (%U): Raised floors separating conditioned spaces from unconditioned spaces or ambient air shall meet the requirements of either a, or b, below:

a. Floors shall be insulated between framing members with insulation having an installed thermal resistance of R-13 or greater.

b. The weighted average U-value of floor assemblies shall not exceed the U-value that would result from installing R-13 insulation between framing members and accounting for the effects of framing members.

Sec. 150 (U) 10

(V) Systems, equipment, and building components listed below may be installed only if:

1. The manufacturer has certified that the system, equipment, or building component complies with the applicable manufacture provisions of Sections 111 through 119; and

2. The system, equipment, or building component complies with the applicable installation provisions of Sections 111 through 119.

Covered are:

a. Appliances regulated by the Appliance Efficiency Regulations (Sec. 111);

b. Space conditioning equipment (Sec. 112);

c. Pool and spa heating systems and equipment (Sec. 114);

d. Gas appliances (Sec. 115);

e. Insulation (Sec. 118).

Sec. 110

DATE	DESCRIPTION
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Title 24 Guesthouse

T24.2