RESIDENTIAL ALTERATIONS – WATER HEATER

CEC-CF1R-ALT-01-E (Revised 06/14)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	CF1R-ALT-01-E	WATER HEATER
Prescriptive Residential Alterations for Water Heater		(Page 1 of 2)

A. GENERAL INFORMATION							
Site address:		Building Type:	□ Single Family Dwelling□ Multi Family Dwellings				
City, Zip Code:	ONTARIO, CA	Climate Zone:	10				

G. WATER	G. WATER HEATING SYSTEMS (Section 150.2(b)1G)													
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Water	Water	Water	# of	Water	Fuel	Rated	Rated	Heating	Heating	Standby	Exterior	Back-Up	Central	Dwelling
Heating	Heating	Heater	Water	Heater	Type	Input	Input	Efficiency	Efficiency	Loss (%)	Insul.	Solar	DHW System	Unit DHW
System	System	Type	Heaters	Storage		Туре	Value	Type	Value		R-Value	Savings	Distribution	System
Identification	Type		in	Volume								Fraction	Туре	Distribution
or			system	(gal)										Туре
Name														

WATER HEATING SYSTEMS

Water heating compliance for an alteration is described in Section 150.2(b)1G. For single dwelling a gas or propane water heater, with a storage tank of 60 gallons maximum or instantaneous (tankless) can be used. Dwelling Unit distribution systems are limited to Standard trunk and branch or demand recirculation for gas or propane water heater. Demand recirculation is not allowed for electric water heater. If there is no natural gas connected to the building, an electric water heater may be replaced with another electric water heater. However, changing from gas to electric is not allowed. Multi-family central systems must use certified equipment as defined under Section 110.1 and 110.3.

NOTE: If the proposed installation does not meet the requirements allowed specifically for alterations, use form CF1R-NCB-01 to document the water heater alteration.

<u>Instructions for sections with column numbers are given below:</u>

- 1. Water Heating System Identification or Name: enter a unique name for the Water Heating System.
- 2. **Water heating system type:** Domestic Hot Water (DHW), Hydronic, Combined Hydronic, or Central. DHW is for domestic hot water, hydronic is a water heating system used for space heating only; combined hydronic are when the water heater will provide both space conditioning and domestic hot water.
- 3. **Water heater type:** For non-central systems only Small Storage or Small Instantaneous are allowed. For central systems pick from Large Storage, Small Storage, Heat Pump, Boiler, Large Instantaneous, Small Instantaneous or Indirect.

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- 4. **Number of water heaters in system:** In single-family and multi-family with water heaters in each dwelling units the value is 1. For multi-family central systems serving multiple dwelling units enter the total number of water heaters.
- 5. **Water heater volume (gal):** tank capacity in gallons. For individual water heaters for a dwelling unit this will be 60 gallons or less. If instantaneous, enter n/a. For multi-family central systems enter the total storage volume.
- 6. Fuel Type: Gas, Propane, Electric (Only if natural gas is not available)
- 7. Rated Input Type: Enter the equipment input rating type, for gas or propane fired units are Btuh, for electric fired system the units are kW.
- 8. Rated Input Value: Enter the numeric value of rated input.
- 9. Heating Efficiency Type: Energy Factor, AFUE, or Thermal Efficiency. From product literature or a California Energy Commission directory.
- 10. Heating Efficiency Value: Enter the value from product literature or a California Energy Commission directory
- 11. Standby Loss (percent): Applies only to large storage water heaters, Enter n/a for small storage or instantaneous water heaters.
- 12. Exterior Insulation R-Value: Enter the R-value if exterior insulation on the storage tank is installed
- 13. Back-up solar savings fraction: If compliance requires a back-up solar system, indicate the solar contribution (e.g., 0.30). External calculations are required.
- 14. **Central DHW Distribution System:** For multi-family buildings with using a central distribution system a demand recirculation system with at least two distribution loops must be installed. This requirement applies to any building with eight or more units. If the system is non-central or project is individual units enter n/a.
- 15. **Dwelling Unit DHW Distribution Type:** For a Central DHW this field shall be Standard. If non-central then pick from Standard, Demand Recirculation Manual Control, Demand Recirculation Sensor Control. If non-central electric water heater this must be Standard, no recirculation system shall be installed.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT					
• I certify that this Certificate of Compliance documentation is accurate and complete.					
Name:	□Owner □ Authorized agent	□Contractor	Signature:		
Company:			Contractor license #:		
Address:			Phone:		
City/State/Zip:			Date:		

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.