

SOLAR WATER HEATING SYSTEMS

CEC-CF2R-STH-01-E (Revised 09/15)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF INSTALLATION		CF2R-STH-01-E
Solar Water Heating Systems		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

A. SOLAR WATER HEATING SYSTEMS

01	SRCC Certification Type	
02	Central DHW System Distribution Type	
03	Certificate of Compliance Type:	
04	Manufacturer Name	
05	Model Number	
06	SRCC Certification Number	
07	Calculated Solar Savings Fraction (annual average value)	
08	Number of Collectors (N/A for OG-300 systems)	
09	Collector Area (Square Feet) (N/A for OG-300 systems)	
10	Water Heater Storage Volume (gallons) (N/A for OG-300 systems)	
11	Secondary Storage Tank Volume (gallons) (N/A for OG-300 systems)	
12	Collectors angle from true north in degrees (N/A for OG-300 systems)	
13	Collectors slope from horizontal in degrees (N/A for OG-300 systems)	

B. SRCC OG-100 CERTIFIED COLLECTORS

The installed system shall meet the following eligibility criteria:

01	System is installed at the same orientation as modeled.
02	System is installed at the same tilt as modeled.
03	The system shall have the same collectors, pumps, controls, storage tank and backup water heater fuel type as the rated condition.
04	The collectors are located in a position that is not shaded by adjacent buildings or trees.
05	Backup Storage tanks are insulated with either an internal R-12 (labeled on tank) or external R-16

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

C. SRCC OG-300 CERTIFIED SYSTEMS

The installed system shall meet the following eligibility criteria:

01	The collectors shall face within 35 degrees of south and be tilted at a slope of at least 3:12
02	The system shall have the same collectors, pumps, controls, storage tank and backup water heater fuel type as the rated condition.
03	The collectors shall be located in a position that is not shaded by adjacent buildings or trees.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

D. SIZING COMPLIANCE WITH MULTIFAMILY CENTRAL SYSTEM PRESCRIPTIVE REQUIREMENTS:

01	For climate zones 1 through 9 only - the solar system has an annual solar savings fraction of 0.2
02	For climate zones 10 through 16 only - the solar system has an annual solar savings fraction of 0.35

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

E. SIZING COMPLIANCE WITH PRESCRIPTIVE ELECTRIC WATER HEATING REQUIREMENTS:

01	Solar System must have an annual solar fraction of at least 50 percent. (§150.1(c)8D)
02	Site must not have natural gas

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2013 Residential Compliance

September 2015

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F. MANDATORY MEASURES FOR SOLAR WATER HEATING SYSTEMS

01	Backup storage tanks for solar water-heating systems have R-12 external insulation or R-16 internal insulation where the internal insulation R-value indicated on the exterior of the tank. (§150.0(j)1B).
02	All domestic hot water piping (including solar) shall be insulated (§150(j)2A)
03	Solar water-heating system and/or/collectors are certified by the Solar Rating and Certification Corporation. (§150.0(n)).
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

For information and data collection only. Not valid until registered with a HERS provider

Registration Number:

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Installation documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	CEA/HERS Certification Identification (If applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Installation is true and correct.
- I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
- The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations, and the installation conforms to the requirements given on the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
- I will ensure that a registered copy of this Certificate of Installation shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone	Date Signed:

Installer Instructions to CF2R-STH-01**A. SOLAR HOT WATER HEATING SYSTEMS**

1. Certification Type – Select either OG100 or OG 300 test procedure based on CF1R submitted. For Systems that use the OG-100 method the program used to calculate the solar fraction should be listed.
2. Central DHW System Distribution Type: From Certificate of Compliance.
3. Certificate of Compliance Type: Choices are performance or prescriptive new construction.
4. Manufacturer Name - From Certificate of Compliance CF1R-STH-01E or CF1R-STH-02E
5. Model Number - From Certificate of Compliance CF1R-STH-01E or CF1R-STH-02E
6. SRCC Certification Number - From Certificate of Compliance CF1R-STH-01E or CF1R-STH-02E
7. Calculated Solar Fraction - From Certificate of Compliance CF1R-STH-01E or CF1R-STH-02E
8. Number of Collectors - From Certificate of Compliance CF1R-STH-02E
9. Collector Area in square feet - From Certificate of Compliance CF1R-STH-02E
10. Water Heater Storage Volume (gallons) - From Certificate of Compliance CF1R-STH-02E
11. Secondary Storage Tank Volume (gallons) - From Certificate of Compliance CF1R-STH-02E
12. Collectors angle from true north in degrees - From Certificate of Compliance CF1R-STH-02E
13. Collectors slope from horizontal in degrees - From Certificate of Compliance CF1R-STH-02E

B. SRCC OG-100 CERTIFIED COLLECTORS - the installed system shall meet the following eligibility criteria

1. Collector System orientation from true south is within 5 degrees of the value listed above. Declination from true north for the site should be calculated and included in this measurement
2. Collector should be modeled with a tilt within 10 degrees of the value listed above.
3. The system shall have the same collectors, pumps, controls, storage tank and backup water heater fuel type as the rated condition.
4. The collectors shall be located in a position that is not shaded by adjacent buildings or trees between 9:00 AM and 3:00 PM. Inspect site to determine if any structural component of the building, adjacent structures, or tree may shade the collector area.
5. Backup Storage tanks are insulated with either an internal R-13 (labeled on tank) or external R-16

C. SRCC OG-300 CERTIFIED SYSTEMS - the installed system shall meet the following eligibility criteria:

1. Collector System orientation shall be within 35 degree from true south Declination from true north for the site should be calculated and included in this measurement.
2. Collectors should be tilted at a slope of at least 3:12.
3. The system shall have the same collectors, pumps, controls, storage tank and backup water heater fuel type as the rated condition.
4. The collectors shall be located in a position that is not shaded by adjacent buildings or trees between 9:00 AM and 3:00 PM. Inspect site to determine if any structural component of the building, adjacent structures,

D. SIZING COMPLIANCE WITH MULTIFAMILY CENTRAL SYSTEM PRESCRIPTIVE REQUIREMENTS

1. For climate zones 1 through 9 only - the solar system has an annual solar savings fraction of 0.2. For climate zones 10 through 16 only – the solar system has an annual solar savings fraction of 0.35

E. SIZING COMPLIANCE WITH PRESCRIPTIVE ELECTRIC WATER HEATING REQUIREMENTS:

1. Solar System must have an annual solar fraction of at least 50 percent.
2. The site must not have natural gas available, meaning that unless right of way is not reasonable attainable natural gas supply lines cannot be located within 100 feet or under the street, whichever is closer.

F. MANDATORY MEASURES FOR SOLAR WATER HEATING SYSTEMS

1. Verify that collectors are SRCC certified
2. Verify that all storage tanks that are part of the solar system are insulated with either R-12 external insulation or labeled that they have at least R-19 internal insulation
3. Verify that all piping in the solar system meets minimal insulation levels per (§150(j)2A)