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SRCC™ CERTIFICATION POLICY OG-100-2016-12

OPERATING GUIDELINES FOR CERTIFYING SOLAR COLLECTORS

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SRCC CERTIFICATION POLICY OG-100

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OPERATING GUIDELINES FOR CERTIFYING SOLAR COLLECTORS

1. PURPOSE

This document sets forth the procedures for the operation of the Solar Rating & Certification Corporation's solar collector certification program. Solar collectors that meet the minimum standards set by the SRCC will be approved to bear a certification label. Companion documents, ICC 901/SRCC 100, *Solar Thermal Collector Standard*, and SRCC Test Method TM-1, *SDHW System and Component Test Protocols* describe the test methods and criteria used for evaluating collector durability and thermal performance. In addition, the SRCC document, SRCC RM-1, *Methodology for Determining the Thermal Performance Rating for Solar Collectors* describes the means by which the SRCC computes the characteristic all-day energy output of a solar collector under prescribed rating conditions.

2. SCOPE

This document provides the operating guidelines for the certification of solar collectors, including flat plate, evacuated tube, concentrating, transpired, integral collector storage (ICS), nonseparable thermosiphon (NSTS), photovoltaic-thermal (PVT) and PV water heaters. It prescribes the procedures and requirements for obtaining SRCC certification and for using the SRCC certified ratings.

Installed certified solar thermal collectors shall comply with all codes in force at the installation site.

3. DEFINITIONS

Accredited Laboratory: A laboratory possessing accreditation under the ISO/IEC Standard 17025 from an accrediting body that is a signatory to the International Laboratory Accreditation Cooperation (ILAC) mutual recognition agreement (MRA).

Applicant: Manufacturer seeking certification of a product or system under a SRCC certification program. (SRCC Quality Manual)

Approval: Formal evaluation and notification by the SRCC that a laboratory is qualified to perform the specific tests listed in the approval for the purpose of providing test data to support requests for solar collector certification.

Approved: Deemed acceptable in writing by authorized representative(s) of the SRCC.

Approved Laboratory: Accredited and SRCC-approved third party testing laboratory participating in the Approved Testing Laboratory Program. (SRCC Quality Manual)

Collector Type: Collectors of similar design are considered to be the same type. Example collector types are: flat plate, tubular, linear trough concentrating.

Equivalent: Those alternatives which have been officially approved by the SRCC.

Licensee: A person or business that provides a product or service under legal agreement with another person or business.

Manufacturer: Any corporation or division, any firm or person which performs at least one of the following functions with respect to solar collectors:

(1) principal design of the product;

(2) production of the product in whole or part, including any substantial processing or assembling operation;

(3) continuous sale of reasonable volumes of the collector in the open market, under its own trade name. Manufacturer may also mean a company that assembles, fabricates, and/or sells a solar collector that has been certified by another company.

Participant: Participating manufacturers in a SRCC certification program holding active certifications. (SRCC Quality Manual)

Withdrawn: Cancellation of the certification of a product or system from a SRCC Certification Program by the participant.

Shall: Indicates the criteria required to comply with the standard.

Solar Collector: A device designed to absorb incident solar radiation, to convert it to thermal energy, and to transfer the thermal energy to a fluid coming in contact with it. The materials and dimensions of the cover (if any) and the absorber must be specified. A solar collector must contribute net gain and be able to have its solar energy conversion efficiency characterized by recognized thermal performance equations.

For ICS and non-separable thermosiphon systems, the “collector” includes the integral storage.

Photovoltaic Water Heater (PV Water Heater): Solar water heaters that utilize one or more photovoltaic modules to convert solar radiation to electricity, which is then used to heat water. PV Water Heaters include PV module(s), wiring, controller(s), electrical conditioning components (e.g. inverters) and components used to convert electrical energy to thermal energy in water (e.g. heating elements).

SRCC: The Solar Rating & Certification Corporation, Inc., the organization which is responsible for conducting the program, described herein, for certifying solar collectors. (SRCC Quality Manual)

SRCC Executive Director: As defined in the Bylaws of the Solar Rating & Certification Corporation. (SRCC Quality Manual)

SRCC Technical Director: As defined in the Bylaws of the Solar Rating & Certification Corporation. (SRCC Quality Manual)

Suspend: Certification temporarily placed in inactive status pending further action as specified by the SRCC.

4. REFERENCED STANDARDS

ICC 901/SRCC 100-2015, *Solar Thermal Collector Standard*

SRCC Document CS-1-05, *Operating Guidelines Governing Component Substitution in the SRCC Solar Collector and Solar Water Heating System Certification and Rating Program,*

SRCC Document TPA, *Testing Program Approval, Approval Policy For Testing Programs for Solar Components and Subsystems.*

SRCC Test Method TM-1, *SDHW System and Component Test Protocols*

SRCC Document RS-1, *Random Selection Procedure*

SRCC Document RM-1, *Methodology for Determining the Thermal Performance Rating for Solar Collectors*

5. OG-100 CERTIFICATION PROCEDURES

5.1. Scope

Solar thermal collectors are eligible for certification if they can be fairly and adequately evaluated under the test sequence(s) identified in ICC 901/SRCC 100 or TM-1 Section 11.

GENERAL

All categories of SRCC OG-100 certification shall initiate the OG-100 certification process as follows:

1. **Registration with SRCC:** Before applying for any SRCC certification programs, an applicant must first be registered with SRCC. This is a one-time step that establishes an account and allows access to SRCC's automated system. Existing or past SRCC participants may skip this step and may request a login ID and password from SRCC staff.
2. **Application:** A manufacturer wishing to apply for the SRCC solar collector certification program shall first submit an application package (available on the

SRCC website at www.solar-rating.org/cert_application/applications.htm) for one or more solar collector models.

3. **OG-100 Program Agreement:** The applicant should review the SRCC™ OG-100 Certification Program Agreement executed with SRCC through which the certification conditions and requirements are defined. This document must be executed before certification is issued. If payment is made using the SRCC automated system, an electronic version of the OG-100 Program Agreement is available and must be signed electronically by checking a box in order to continue to the payment screen. If payment is made by check or wire transfer, a copy of the Agreement will be sent by e-mail to the applicant for signature.
4. **Trademark and Certification Mark Use:** The applicant should review the SRCC Trademark and Certification Mark Use Policy (found on the [SRCC website](#)) through which the rights to use the registered certification mark and performance ratings granted by the Corporation are strictly controlled.
5. **Factory Location(s):** The applicant shall provide SRCC the address of all locations where final fabrication or assembly of the collector(s) seeking certification occur, along with a contact at each location using the SRCC Factory Location Form.
6. **Forms and Fees:** An invoice for OG-100 certification fees is generated upon receipt of a completed OG-100 application. Upon receipt of fully completed application, payment of certification fees, a completed SRCC Factory Location Form, and a test report which SRCC must receive directly from an SRCC Approved Lab, the certification process will commence based on the category of certification sought.

Certifications under the OG-100 program may be one of the following categories with the procedures for each as specified in Table 5.1.

TABLE 5.1: CERTIFICATION CATEGORY REQUIREMENTS

CERTIFICATION CATEGORY	SECTION
Basic Certifications	5.2
Resize Certifications	5.3
Private Label Certifications	5.3

5.2. Basic Certifications

5.2.1. Qualification

The Basic Certification Category applies to collectors where the fabrication or assembly is done by the company seeking certification, and where the performance is to be based on the appropriate laboratory test results for that specific model and sized of collector.

5.2.2. Process

Basic certifications shall be conducted in accordance with the following:

1. **General:** Applicant and SRCC to complete and comply with all general requirements established in Section 5.1.
2. **Factory Location(s):** The applicant shall provide SRCC the address of all locations where final fabrication or assembly of the collector(s) seeking certification occur, along with a contact at each location using the SRCC Factory Location Form.
3. **Select SRCC-Approved Testing Laboratory:** The applicant shall select a testing laboratory with an SRCC approved testing program (listed on the SRCC website at http://www.solar-rating.org/test_labs/approved_labs.html). The lab's fees and schedules are separate from SRCC. **Select Test Units:** Production unit solar collectors of the model to be certified shall be selected at random from existing stock at the manufacturing facility or at the manufacturer's distribution point in accordance with SRCC Document RS-1, *Random Selection Procedure* and sent to the testing laboratory.
4. **Conduct Testing:** Testing shall be conducted by the testing laboratory as specified in ICC 901/SRCC 100, Table 401.2 for the collector type, with the following exceptions:
 - a. Rain Penetration testing, as specified in ICC 901/SRCC 100 Section 401.17 shall not be required for any collector type.
 - b. Mechanical Load testing, as specified in ICC 901/SRCC 100 Section 401.18, shall not be required for unglazed collectors.
 - c. Photovoltaic Water Heaters shall be evaluated in accordance with the requirements contained in *SRCC TM-1 Solar Thermal Component Test and Analysis Protocol*.
 - d. Photovoltaic-Thermal (PVT) collectors shall be tested in accordance with the requirements found in ISO 9806, Section 24 and shall comply with ICC 901/SRCC 100. Testing of PVT collectors shall be conducted with the type of PV module for which the PVT is designed.

Exceptions:

1. Impact Resistance testing of the solar thermal collector per ICC 901/SRCC 100 Section 302.1 shall not be required where PVT solar thermal collectors are located behind the PV module.
2. The PV module used for testing of the PVT assembly shall be Maximum Power Point (MPP) tracked during the solar thermal performance testing prescribed in ISO 9806.

3. The gross area of the PVT assembly shall be measured by utilizing the projected area of the PV module and solar thermal collector assembly,

NOTE: Testing requirements from ICC 901/SRCC 100, Table 401.2 and the exceptions above are summarized in Appendix A of this document for reference purposes.

The collector shall be tested in the exact order specified in ICC 901/SRCC 100 Table 401.2. Any unauthorized variations to the testing sequence and specifications will void the test results' acceptability for purposes of SRCC certification and rating. Test data submitted to SRCC in support of a basic application for collector certification shall comply with the following:

- a. Testing shall have been performed within the last 10 years on the same model as the one submitted to SRCC for certification.
 - b. The laboratory that performed the testing was approved by SRCC at the time of the test, and the testing met SRCC requirements at the time of the test.
 - c. Test data shall be submitted by the testing laboratory directly to SRCC.
5. **Evaluation:** Solar thermal collectors shall be evaluated for compliance with the minimum requirements found in ICC 901/SRCC 100-2015 and *SRCC TM-1 Solar Thermal Component Test and Analysis Protocol*, as applicable. Evaluation to minimum criteria will be based on documentation provided by the applicant and test data submitted by the testing laboratory.
 6. **Rating:** Thermal performance and impact resistance ratings are determined for each solar thermal collector seeking certification under the OG-100 program.

Thermal performance ratings shall be calculated for all collectors submitted for certification under the SRCC OG-100 Program. All thermal performance ratings shall be calculated using the methodology established in *SRCC Document RM-1 Methodology for Determining the Thermal Performance Rating for Solar Collectors* and using the test data submitted in support of the application.

For non-glass and non-tempered glass collector covers, the results of the test specified in Section 302.1.2 of ICC 901/SRCC 100 shall be used to rate the impact resistance of the cover using the scale provided in Annex B.

7. **Notification:** The SRCC will notify the applicant that the solar collector has been approved and certified or, if disapproved, notify the manufacturer specifically of what elements of the application are incomplete and identify the corrective action that should take place. If all identified revisions and/or corrections are made and resubmitted to the SRCC, the solar collector will be approved and certified.

5.3. Resize Certifications

5.3.1. Qualification.

Test results from a collector with a basic certification may be used to certify a differently sized model if all materials, part designs construction techniques are identical, subject to the requirements for specific collector types given below and in accordance with the *SRCC™ Size Change Policy*, which may be found at <http://www.solar-rating.org/guidelines/guidelines.html?agree=0&submit.x=26&submit.y=10>: .

1. **Flat Plate Collectors.** For glazed and unglazed liquid heating, flat-plate collectors, test results from one model may be used to certify a differently sized model if all materials, part designs, and construction techniques are identical.
2. **Evacuated Tube Collectors.** For evacuated tube collectors, test results from one model may be used to certify a differently sized model if all materials, part designs, and construction techniques are identical and only the number of tubes has been changed.
3. **Air Heating Collectors.** For air collectors, test results from one model may be used to certify a differently sized model if all materials, part designs and construction techniques are identical, collector width is held constant and only the length has been decreased. Thermal performance ratings for differently sized air collectors will be based on the longest collector test data with an adjustment of multiplying the performance of the tested collector by [gross area of the shorter collector divided by the gross area of the longer collector]. Changes to the generic location and/or aperture of an air collector's inlet or outlet ports, with all other materials, construction techniques and part designs remaining unchanged, require review by the Technical Director for determination that the design change will not result in a different efficiency at the test conditions for the tested collector in order for a model with changes in its generic port location and/or aperture to retain its certification and rating.
4. **Concentrating Collectors.** Test results from one model of concentrating solar collector may be used to certify a differently sized model if all materials, part designs and construction techniques are identical, and only the length of the collector has changed. Also, the tested unit must be the smallest of such scaled configurations.
5. **PV Water Heaters.** Photovoltaic water heater collectors sized differently than the tested model may be certified without additional testing only if review and evaluation by SRCC reveals that the new collector can be adequately modeled to determine new performance ratings.

5.3.2. Process

Resize certifications for a solar thermal collector(s) meeting these conditions shall be conducted in accordance with the following:

1. **General:** Applicant and SRCC shall complete and comply with all general requirements established in Section 5.1. Separate applications for certification must be submitted for separate models, including models that differ in collector length only.
2. **Rating:** Resizing of qualifying collectors shall be conducted in accordance with the SRCC *Procedure for Calculating Efficiency Equations and Ratings for Solar Collectors Sized Differently than a Tested Collector (Size Change Policy)*.
3. **Notification:** The SRCC will notify the applicant that the solar collector has been approved and certified or, if disapproved, notify the manufacturer specifically of what elements of the application are incomplete and identify the corrective action that should take place. If all identified revisions and/or corrections are made and resubmitted to the SRCC, the solar collector will be approved and certified.

5.4. Private-Label Certifications

5.4.1. Qualification

A solar collector which has been SRCC certified and rated as produced by one manufacturer may also be sold by another manufacturer acting as a licensee/private labeler of the original manufacturer as long as at least one of the following conditions is met:

- a) The collector is manufactured entirely in the original Participant's facility. Certification is awarded as a private labeler.
- b) The collector is manufactured exactly (all proprietary components are supplied by the original participant and all non-proprietary components are specified by the original participant) as originally submitted and tested, but in a licensee's facility under the direct supervision or under a licensing agreement of the original Participant. Certification is awarded as a licensee.

If at least one of the conditions listed above is not met, the Licensee/Private Labeler must submit the authorization forms above and conduct testing as described in Section 5.2 using a SRCC-approved testing laboratory. The testing shall be conducted on randomly selected collector that has been fabricated/assembled by the Licensee/Private Labeler.

Licensees/Private Labelers must meet the same conditions and program requirements for certification as are required of other SRCC solar collector certification program participants.

5.4.2. Process

Private label certification for a solar thermal collector meeting one of these conditions shall be conducted in accordance with the following:

1. **Authorization:** Authorization from the original participant holding the OG-100 basic or resize certification shall be required for the specific model to be OG-100 certified as a private labeled. The authorization shall be made by logging-in at <https://secure.solar-rating.org> and choosing *Authorize Private Label* from the *My Options* menu. The automated system will allow the certification holder to choose the manufacturer and which collector models they are allowing to private label. The manufacturer granted the private label may then apply using the automated system. **Note:** This step must be completed before the Private Label application and program agreement specified in Section 5.1 can be completed.
2. **General:** Private label applicant and SRCC to complete and comply with all general requirements established in Section 5.1.
3. **Notification:** The SRCC will notify the applicant that the solar collector has been approved and certified or, if disapproved, notify the manufacturer specifically of what elements of the application are incomplete and identify the corrective action that should take place. If all identified revisions and/or corrections are made and resubmitted to the SRCC, the solar collector will be approved and certified.

6. CERTIFICATION AWARD AND MARKING

When all OG-100 program requirements are satisfied, the SRCC will notify the applicant of certification in writing.

The manufacturer of a certified solar collector shall identify that product as certified by means of a label. Certification label specifications shall be provided to the manufacturer by the SRCC upon the award of certification. An approved certification label shall be permanently affixed to each collector manufactured or distributed under that brand name and model number within sixty (60) days from receipt of notice of certification. This label shall be affixed to the solar collector itself and not to another component of the solar system.

The SRCC registered certification trademark may be used in advertising, in catalogs and sales promotion material by the manufacturer of a certified solar collector provided clear reference is made as to which collector(s) certification applies.

Rights to use the SRCC certified ratings and the SRCC certification mark are strictly controlled through the *SRCC OG-100 Certification Program Agreement* and the *SRCC Trademark and Certification Mark Use Policy*. Only manufacturers and private labelers are eligible to become licensees to display the SRCC certification mark.

No entity is entitled to:

- a) use the SRCC certification mark or ratings in any written sales or advertising material;

- b) state, directly or by implication, that any ratings are based on this program; or
- c) suggest that any units have been tested in conformance with this program, unless authorized to do so by a Program Agreement with the SRCC

A certification award document containing basic product information and the OG-100 thermal and impact ratings shall be provided by the manufacturer with each certified solar collector shipped, sold, or offered for sale or display. Each active certification award document will be publicly posted to the SRCC website at www.solar-rating.org

Note: The SRCC OG-100 performance ratings may be omitted from the certification award and certification label where the participant has selected the Ratings Visibility Selection Option of the OG-100 program, and complied with all associated requirements.

7. CERTIFICATION CONDITIONS AND RENEWAL

7.1.1. Period of Certification Validity

Certification of collectors under the SRCC OG-100 program remains valid for 10 years from the date of the testing conducted as the basis of the certification (date of latest efficiency/output data point) as long as all requirements established by the OG-100 Program Agreement and Sections 7.2 and 7.3 are met.

Application for re-certification of an existing model outside the period of validity is treated as a new application that must be initiated by completing an application package and requesting random selection of a collector for testing in accordance with certification procedures in effect at the time of the new application.

7.2. Annual Certification Renewal

SRCC OG-100 participants are required to renew each certification annually during the period of validity. Certifications shall be renewed upon the completion of the following actions as established in Sections 7.2.1 through 7.2.3.

7.2.1. Annual Certification Report

Participants are required to prepare an Annual Certification Report and submit to SRCC each year in the anniversary month of the participant's first OG-100 certification. In order to be accepted, the Annual Report must be completed in accordance with the instructions on the form and include a complete and accurate explanation of the following information:

1. All reported abnormal operating experiences, equipment failures and other problems, related to the certified collector(s).
2. All complaints made known to the participant relating to the certified collector(s)' compliance with the SRCC OG-100 Operating Guidelines.

3. All modifications to the design or materials of the certified collector(s) that have not previously been reported to SRCC.
4. All significant changes to the manufacturing processes used to produce the collector(s).

Annual Certification Reports shall be provided using the Annual Certification Report Form provided in Annex C of this document. Reports shall be submitted for each certified collector, although information for families of collectors may be submitted on a single form.

The Technical Director will assess the Annual Certification Report submitted and determine whether the information provided satisfies the requirements of the Program Agreement and this document. If accepted, and the executed program agreement and annual program fees are received, the participant will be notified of continued certification.

If the Technical Director identifies any concerns or anomalies related to the information in the Annual Certification Report, corrective actions will be communicated to the participant.

7.2.2. Program Agreement

A fully executed agreement between the Solar Rating and Certification Corporation and a participant is required for certification of a solar collector under the OG-100 program. The *SRCC OG-100 Certification Program Agreement* shall be renewed annually in order to continue participation in the program.

7.2.3. Annual Participant & Maintenance Fees

Payment of the OG-100 Annual Participant Fee and Maintenance Fee is required to renew certification annually. In the event the information reported in the Annual Certification Report requires additional SRCC work or review, the participant will be charged separately for such SRCC costs and expenses at SRCC's published hourly rate. All fees shall be as established in the *SRCC Fee Schedule* and the *SRCC OG-100 Certification Program Agreement* in effect at the time of renewal.

7.2.4. Design Changes

Significant changes to the design of any certified collector must be reported to SRCC in a timely and accurate manner, no more than thirty (30) days after the design change has occurred. The participant is required to consult with the Technical Director to determine whether a design change is minor or significant. Design changes shall be evaluated per the procedures specified in SRCC Document CS-1, *Operating Guidelines Governing Component Substitution in the SRCC Solar Collector and Solar Water Heating System Certification and Rating Programs*. The evaluation shall detail the effect of design changes on the durability and performance of the collector. Per the evaluation, SRCC may:

- a) require more information regarding the change;
- b) require a design analysis or partial design analysis;
- c) require retesting or partial retesting of the collector
- d) or determine that the change is minor and no action is required.

The participant must provide all required information and documentation to SRCC in order to be eligible for continuation of certification.

The Executive Director shall make final determinations, consistent with any specific provisions herein, on any and all questions that may arise under this section, but his/her determination may be appealed via the SRCC Certification and Approval Appeal Policy.

8. OG-100 CERTIFICATION POLICIES

The OG-100 Solar Thermal Collector Certification Program shall be conducted in accordance with the policies established in this document, the *SRCC OG-100 Certification Program Agreement*, the *SRCC Quality Manual*, and referenced documents and policies.

8.1. Proprietary Information

The following data and information shall be considered confidential and may be disclosed only as provided in this program and the *SRCC Quality Manual*:

- a) all data and information furnished by the applicant to SRCC, all boards and committees of the SRCC, or to the testing laboratory offering an SRCC approved testing program;
- b) all test data provided by the approved testing laboratory; and
- c) all performance calculations made by the SRCC.

Certified performance ratings based on the certification test reports may not be designated confidential.

8.2. Denial of Certification

If the SRCC determines that the application does not satisfy all criteria of certification, the SRCC shall give the applicant written notice containing a statement of all reasons for the denial.

The applicant may contest the reasons for the denial by giving the SRCC prompt notice of contention. The SRCC will reconsider the application for certification and make a final decision based solely on evidence in the application file.

An applicant aggrieved by the SRCC final decision may, within a reasonable time, file a written request for review with the SRCC. The SRCC shall appoint an advisory review board that will reconsider the evidence on file. The SRCC shall, based upon the

recommendation of the advisory review board, affirm, modify, or reverse the initial decision and shall so inform the applicant of the advisory board recommendations.

8.3. Suspension or Withdrawal of Certification

8.3.1. Manufacturer Initiated

The manufacturer of a certified solar collector may voluntarily withdraw certification by giving written notification to the SRCC. The notice shall state the effective withdrawal date and reason for termination.

8.3.2. SRCC Initiated

The SRCC may withdraw or suspend certification of a solar collector or may terminate the Program Agreement in the event of:

- A. Misrepresentation of material fact in an application for certification.
- B. Misrepresentation that a certification of a particular model applies to other models which have not been officially certified. This includes the use of components other than those listed with the original certification application.
- C. Component changes not approved by the SRCC.
- D. Claiming continued certification for a solar collector which, after certification, has been changed or modified without the written approval of the SRCC.
- E. Failure to comply with a condition of certification or labeling.
- F. Test results indicate failure of the solar collector to meet minimum standards for certification.
- G. Failure to comply with the conditions and terms of the *SRCC OG-100 Certification Program Agreement* Failure to pay fees as established by SRCC.

The Executive Director shall determine if suspension or revocation of a previously granted certification or the termination of a participant's Program Agreement is warranted. If so, the Executive Director shall give the program participant confidential written notice containing a statement of reasons for the proposed action and those steps, if any, available to the program participant to avoid the proposed action. Where applicable, specific instructions of steps which must be taken to correct the cause(s) for revoking or suspending certification shall also be contained in the notice.

The program participant may contest the reason(s) for the proposed revocation, suspension or termination by filing with the Executive Director a written appeal in accordance with the SRCC appeal policy within thirty (30) days of receipt of the written notice. In the event of a request for review, the SRCC shall follow the procedures defined in the SRCC appeal policy. If a written request for review is not received by

SRCC within thirty (30) days of the program participant's receipt of the written notice, the proposed action of the SRCC Executive Director shall become final and conclusive.

In the event of revocation, suspension, or termination in accordance with the preceding paragraph, notice to such effect shall be made pursuant to the *SRCC OG-100 Certification Program Agreement*. In the event of revocation, suspension, or termination, the right to the use of the Official Seal and SRCC ratings by the program participant shall, consistent with the action to be taken, cease and be concluded immediately. If the program participant fails to discontinue use of the Official Seal and all references to SRCC certification and/or ratings, SRCC shall have the right to an immediate temporary and/or permanent injunction restraining the program participant from any and all further use of, or reference to, the Official Seal, certification and/or ratings.

ANNEX A: COLLECTOR TESTING SUMMARY

Testing for basic collector certification under the OG-100 program is summarized in Tables A-2 for liquid heating collectors and A-2 for air heating collectors. The collector must be tested in the exact order specified in Table A-1 or A-2. Any unauthorized variations to the testing sequence and specifications will void the test results' acceptability for purposes of SRCC certification and rating.

TABLE A-1: OG-100 LIQUID HEATING SOLAR COLLECTOR TEST REQUIREMENTS¹

TEST	ICC 901/ SRCC 100 SECTION	LIQUID HEATING COLLECTOR TYPE															
		UNGLAZED			GLAZED (FLAT PLATE, TUBULAR)			PROTECTED BY CONTROLS ²			NONSEPARABLE STORAGE (ICS)			PHOTOVOLTAIC- THERMAL (PVT)			PV WATER HEATER ⁴
		1	2 Q	2 P	1	2 Q	2 P	1	2 Q	2 P	1	2 Q	2 P	1	2 Q	2 P	
Test Specimen Selection	401.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	NO TESTING PER ICC 901/SRCC 100 STANDARD. SEE SRCC TM-1 DOCUMENT FOR REQUIREMENTS.
Baseline Inspection	401.4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
High-Temperature Resistance	401.5	X	X		X	X		X	X		X	X		X	X		
Stagnation Temperature	401.6	X	X		X	X					X	X		X	X		
Exposure	401.7	X	X		X	X		X	X		X	X		X	X		
External Thermal Shock	401.8.1	X	X		X	X		X	X		X	X		X	X		
Internal Thermal Shock	401.8.2	X	X		X	X					X	X		X	X		
Internal Pressure	401.9	X	X		X	X		X	X		X	X		X	X		
Freeze Resistance ³	401.12	X	X		X	X		X	X		X	X		X	X		
Thermal Capacity/Time Constant	401.13	X		X	X		X	X		X	X		X	X		X	
Thermal Performance	401.14	X		X	X		X	X		X	X		X	X		X	
Incident Angle Modifier (IAM)	401.15	X		X	X		X	X		X				X		X	
Pressure Drop	401.16	X	O	O	X	O	O	X	O	O				X	O	O	
Rain Penetration	401.17																
Mechanical Load	401.18				X	X		X	X		X	X					
Impact Resistance	302.1	X	X		X	X		X	X		X	X					
Final Inspection	401.19	X	X		X	X		X	X		X	X		X	X		

1: Table derived from Table 401.2 in the ICC 901/SRCC 100-2015 standard, but differs where the OG-100 program calls for testing varying from the standard. Differences from Table 401.2 in ICC 901/SRCC 100 are highlighted with gray fill.

2: Liquid heating collectors unable to withstand dry stagnation.

3: Applies only when freeze tolerance claimed.

4: PV water heaters consist of a PV module(s), wiring, any conditioning electronics (e.g. inverter), and heating element.

TABLE A-2: OG-100 AIR HEATING SOLAR COLLECTOR TEST REQUIREMENTS¹

TEST	ICC 901/SRCC 100 SECTION	AIR HEATING COLLECTOR TYPE					
		CLOSED LOOP			TRANSPIRED		
		1	2	2 P	1	2 Q	2 P
Test Specimen Selection	401.3	X	X	X	X	X	X
Baseline Inspection	401.4	X	X	X	X	X	X
High-Temperature Resistance	401.5	X	X		X	X	
Stagnation Temperature	401.6	X	X		X	X	
Exposure	401.7	X	X		X	X	
External Thermal Shock	401.8.1	X	X		X	X	
Internal Thermal Shock	401.8.2	X	X		X	X	
Leakage	401.10	X	X				
Rupture & Collapse	401.11	X	X		X	X	
Thermal Capacity/Time Constant	401.13	X		X	X		X
Thermal Performance	401.14.1	X		X	X		X
Incident Angle Modifier (IAM)	401.15	X		X	X		X
Pressure Drop	401.16	X	O	O			
Rain Penetration	401.17						
Mechanical Load	401.18	X	X		X	X	
Impact Resistance	302.1	X	X		X	X	
Final Inspection	401.19	X	X		X	X	

1: This table is derived from Table 401.2 in the ICC 901/SRCC 100-2015 standard, but differs where the OG-100 program calls for testing varying from the standard. Differences from Table 401.2 in ICC 901/SRCC 100 are highlighted with gray fill.

ANNEX B: IMPACT RESISTANCE RATING

The results of the test specified in Section 302.1.2 of ICC 901/SRCC 100 are used to rate the impact resistance of the cover using the following scale. Tempered glass covers are given a scale rating of 11 as testing is not required per Section 302.1.1 of ICC 901/SRCC 100.

TABLE B SRCC IMPACT RESISTANCE RATING SCALE

SRCC Impact Resistance Rating	Minimum height at which the cover sustains damage
0	No rating provided
1	0.4 m (1.3 ft)
2	0.6 m (2.0 ft)
3	0.8 m (2.6 ft)
4	1.0 m (3.3 ft)
5	1.2 m (3.9 ft)
6	1.4 m (4.6 ft)
7	1.6 m (5.3 ft)
8	1.8 m (5.9 ft)
9	2.0 m (6.6 ft)
10	> 2.0 m (6.6 ft)
11	Tempered glass cover (no testing required)

ANNEX C: ANNUAL CERTIFICATION REPORT FORM

This template is for informational purposes only. The current version will be sent to OG-100 program participants.

SRCC Annual Certification Report Form

According to Section 7.2 of the SRCC OG-100 Operating Guidelines, the participant shall prepare and submit this Annual Certification Report to SRCC at apply@solar-rating.org each year in the anniversary month of the participant's first OG-100 certification.

Section 7.2.1 of the SRCC OG-100 Operating Guidelines states that in the event the information reported in the Annual Certification Report requires additional SRCC work or review, the Certification Holder will be charged separately for such SRCC costs and expenses, consistent with the current applicable SRCC fee schedule.

Date (mm/dd/yyyy): _____

Participant: _____

Collector Model (s): _____

SRCC Certification Number(s): _____

Issue date of SRCC Certification (mm/dd/yyyy): _____

Renewal date (mm/dd/yyyy): _____



SOLAR RATING
& CERTIFICATION
CORPORATION™

Report all abnormal operating experiences, equipment failures, and other problems related to the certified collector during the last 12 months.
Report all complaints made known to the manufacturer relating to the collector compliance with the OG-100 Operating Guidelines during the last 12 months.
All modifications to the design of the certified collector during the last 12 months.
All significant changes to the manufacturing processes used to produce the collector(s) during the last 12 months.