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## BASIS FOR ICC-SRCC INSPECTIONS

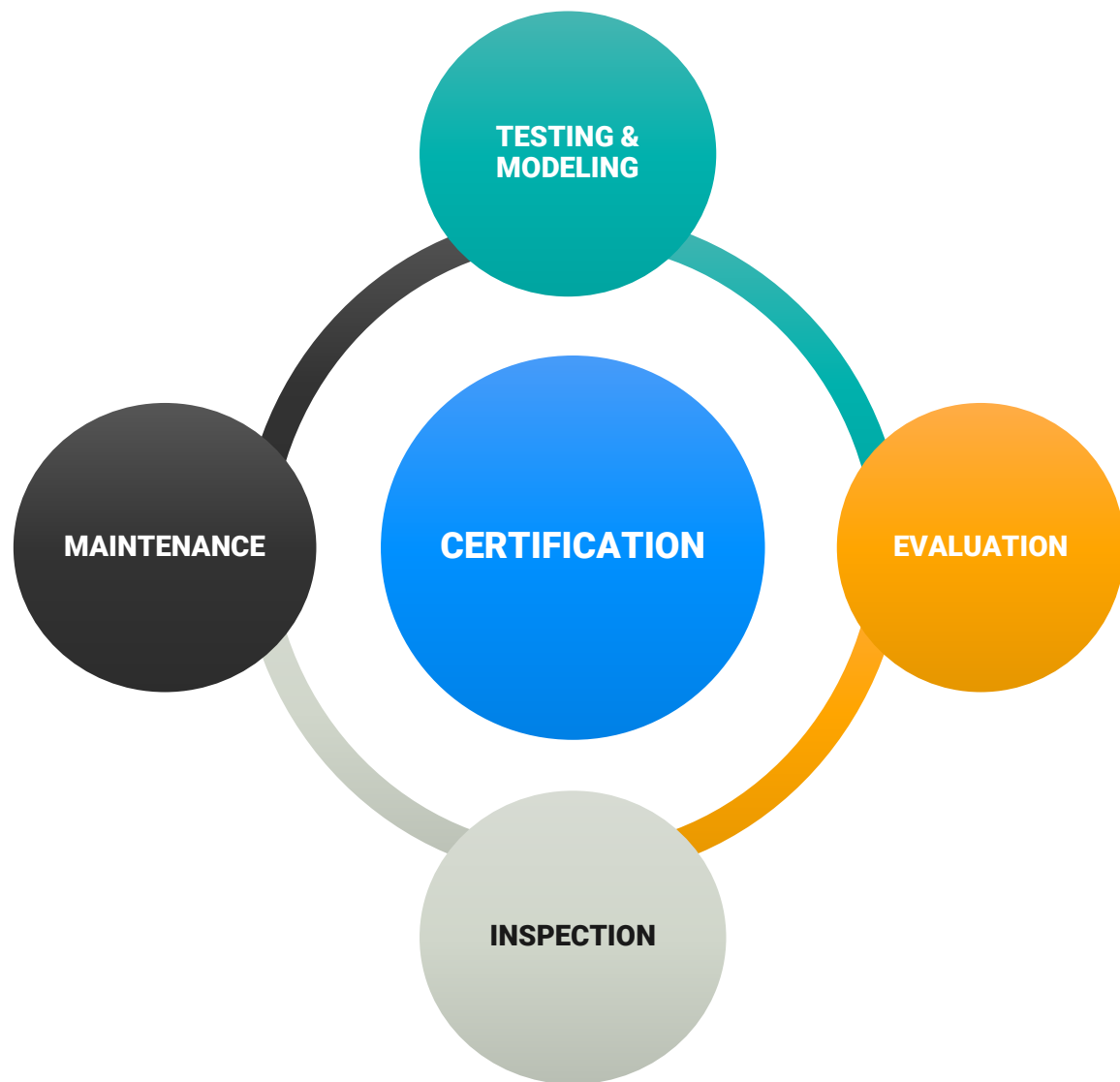
Why do we require inspections?



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## Key Elements of Certification

Programs Accredited to  
ISO/IEC 17065

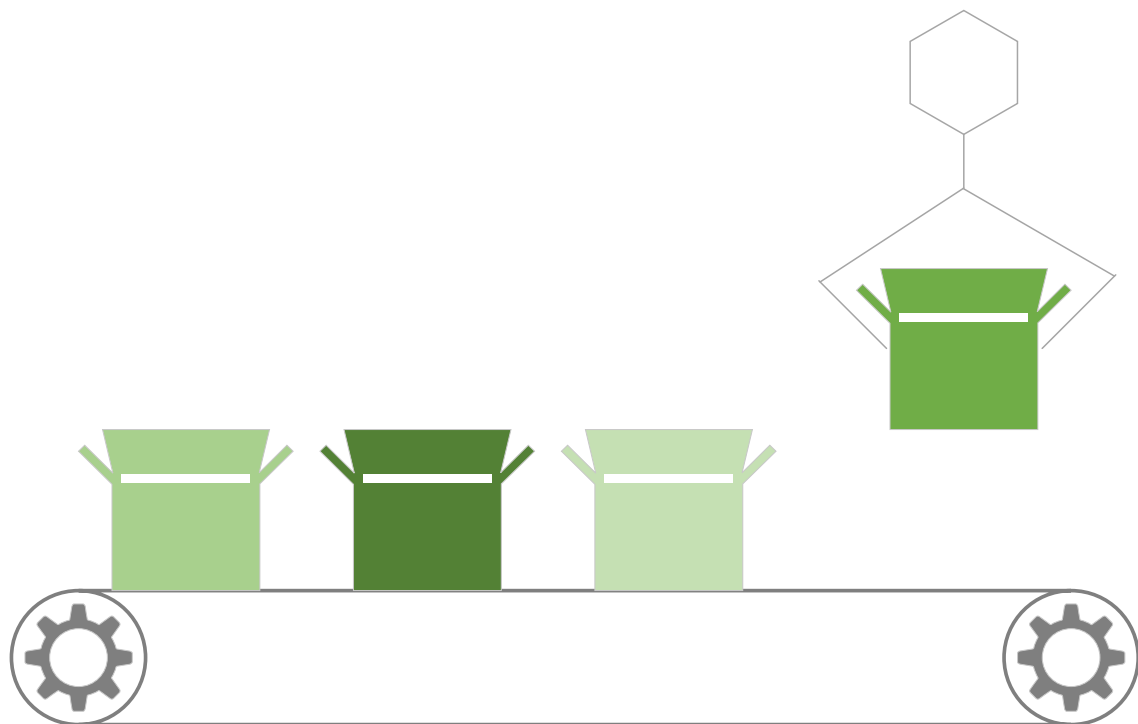




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## Objective of Inspections

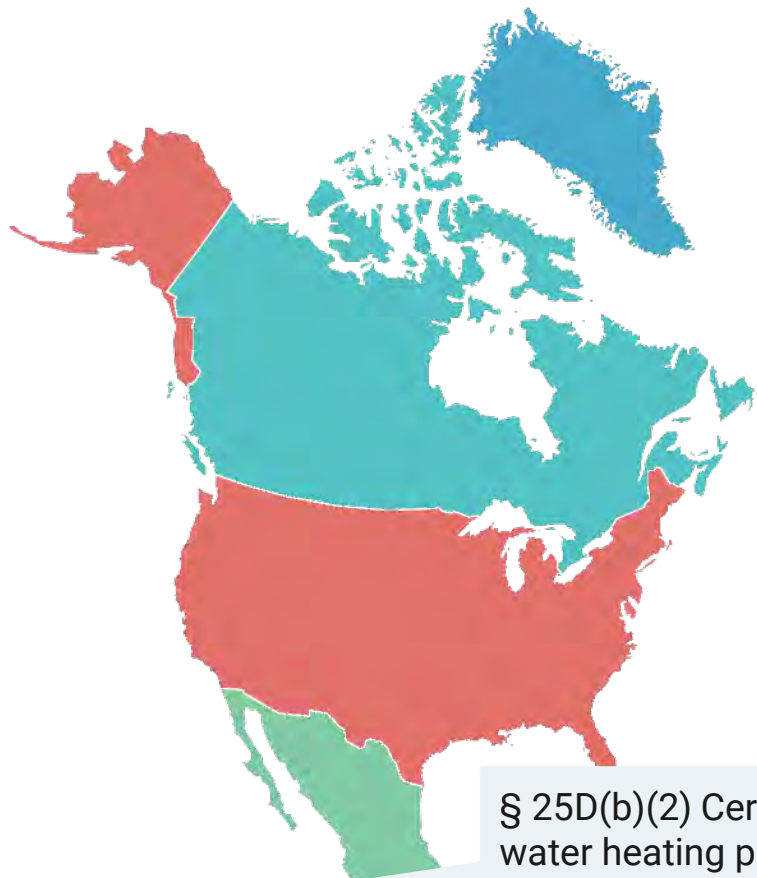
Confirm that the certified product is produced in such a way as to have performance, quality and function that is comparable or superior to the product submitted for testing and evaluation and compliant with certification program requirements.





## Where is Certification Required in North America?

- Construction codes (building, plumbing, mechanical, energy)
  - Model codes/standards (e.g. ICC, IAPMO, NFPA, ASHRAE)
  - State, local and city codes (e.g. City of Los Angeles)
- Tax rebates
  - Federal (IRA/ITC)
  - State/local
- ENERGY STAR® Program
- Utility incentive programs



§ 25D(b)(2) Certification of solar water heating property  
No credit shall be allowed under this section for an item of property described in subsection (d)(1) unless such property is certified for performance by the non-profit Solar Rating Certification Corporation, or a comparable entity endorsed by the government of the State in which such property is installed.



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## Basis for Certification in U.S. Codes

### **2024 International Plumbing Code (IPC)**

#### 303.4 Third-party certification.

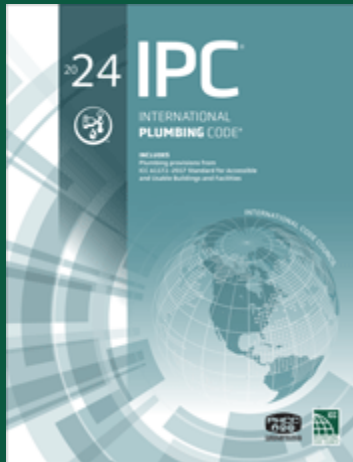
Plumbing products and materials required by the code to be in compliance with a referenced standard shall be listed by a third-party certification agency as complying with the referenced standards. Products and materials shall be identified in accordance with Section 303.1.

### **2024 Uniform Plumbing Code (UPC)**

#### 301.2 Minimum Standards.

Pipe, pipe fittings, traps, mixtures, materials and devices used in a plumbing system shall be listed (third-party certified) by a listing agency (accredited conformity assessment body) as complying with the approved applicable recognized standards in this code and shall be free from defects.

# Basis for Surveillance in Codes



2024 International  
Plumbing Code (IPC)

THIRD-PARTY CERTIFIED. Certification obtained by the manufacturer indicating that the function and performance characteristics of a product or material have been determined by testing and ongoing surveillance by an approved third-party certification agency. Assertion of certification is in the form of identification in accordance with the requirements of the third-party certification agency.

# ISO 17065 Accreditation

ICC-SRCC is accredited as a product certification body to ISO/IEC 17065 – Conformity Assessment – Requirements for bodies certifying products, processes and services by the American Association for Laboratory Accreditation (A2LA).

ISO 17065 addresses surveillance procedures to “maintain the validity” of the certification.



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Surveillance, which means systematic iteration of conformity assessment activities as a basis for maintaining the validity of the statement of conformity.

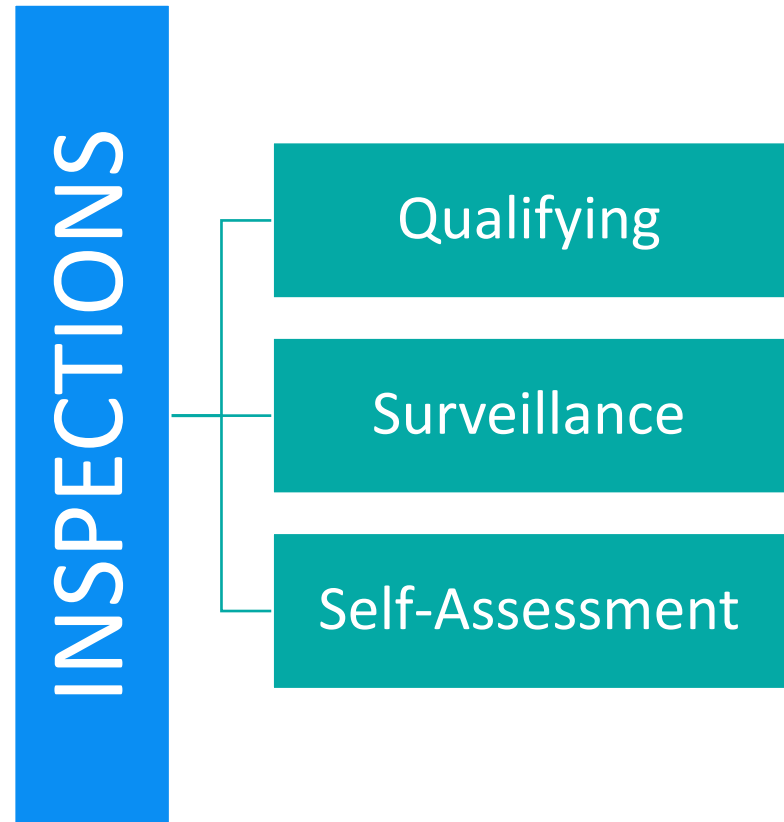
(ISO 17067 - Conformity assessment – Fundamentals of product certification and guidelines for product certification schemes)



# Types of Inspections

## Triggering Events

- New production facility and/or QMS
- Surveillance of existing production facility
- Review of significant changes to QMS or production facility
- Complaint investigation or confirmation of significant deficiency







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## INSPECTION TOPICS

What do inspections cover?

## What does an Inspection Check?



### **QUALITY MANAGEMENT SYSTEMS**

Confirm processes in place and carried out to produce products that are comparable to that submitted for initial evaluation.



### **DESIGN CONTINUITY**

Verify that the product design, materials and production methods have not changed.



### **SRCC PROGRAM COMPLIANCE**

Confirm ongoing compliance with certification program and standard requirements.



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## Quality Management Systems





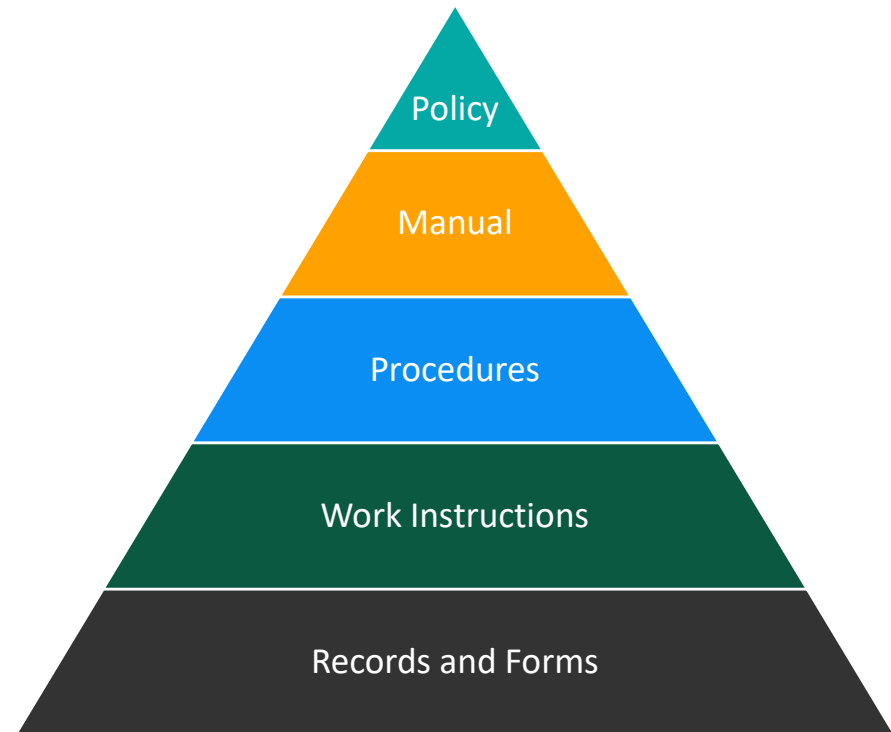
## QMS Assessment Topics

Based on the principles outlined in AC-10, Acceptance Criteria for Quality Documentation

- AC-10 is an Acceptance Criteria document published by ICC-ES
- Sets requirements for quality systems for building products
- Available to ICC-SRCC clients upon request
- Referenced directly in SRCC inspection forms

It addresses topics that include:

- Quality system documentation
- Design control
- Incoming goods and materials
- Product quality checks
- Calibrations





## Basic Elements of Quality System Documentation (AC-10 §2.0)

Commonly contained in a document  
known as a Quality Manual.

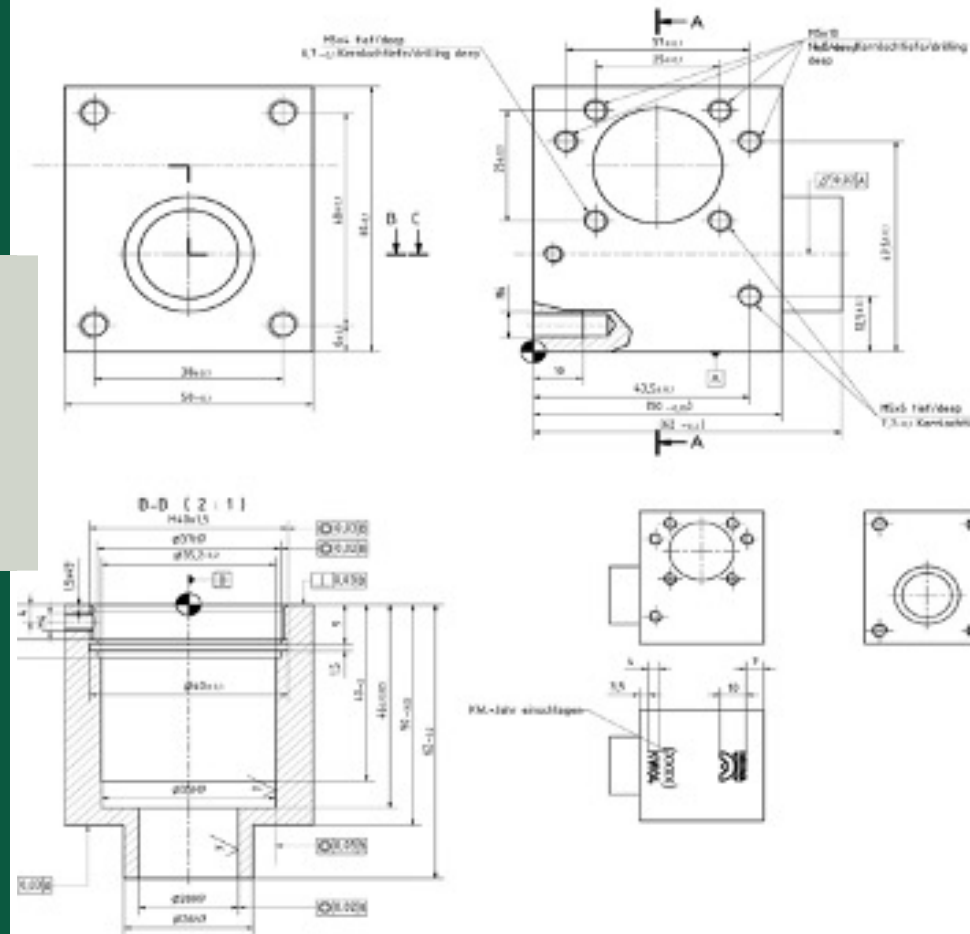
- Description of the manufacturing processes.
- Organization chart with key responsibilities in quality control program
- Procedures for processing and documenting complaints
- Records retention policies (min. 2 years)





# Design Control (AC-10 §1.4.4.1, §2.1.7)

- Documents maintained to control the design of the certified product
  - Drawings, parts lists, material specifications, etc.
  - Version control to track and document changes
- Conformity/Non-conformity criteria identified
- Design and material changes are documented and reported promptly to SRCC





## Incoming Goods Inspections (AC-10 §2.2)

- Procedures to inspect incoming goods and materials to design specifications
- Applies to incoming:
  - Materials
  - Components
  - Subassemblies
  - Assemblies
- Results of inspections are recorded.
- Instructions and calibrated tools are available for personnel.



## Quality in Production Processes (AC-10 §2.1.9)

- Instructions provided for proper production/assembly.
- Quality and conformity checks are conducted and recorded.
- Devices used for quality checks are readily available and calibrated.
- Non-conforming products are controlled.
- Finished products are handled, packaged and stored to prevent damage.







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## Calibration (AC-10 §2.6)

- Devices used for quality checks (incoming goods or production) are calibrated.
  - Calibrations are current and maintained.
- Records are maintained for calibrated devices noting calibration frequency and a means of providing traceability to national or global standards.
- Calibrated devices are labeled to link each to calibration records.



### CALIBRATION

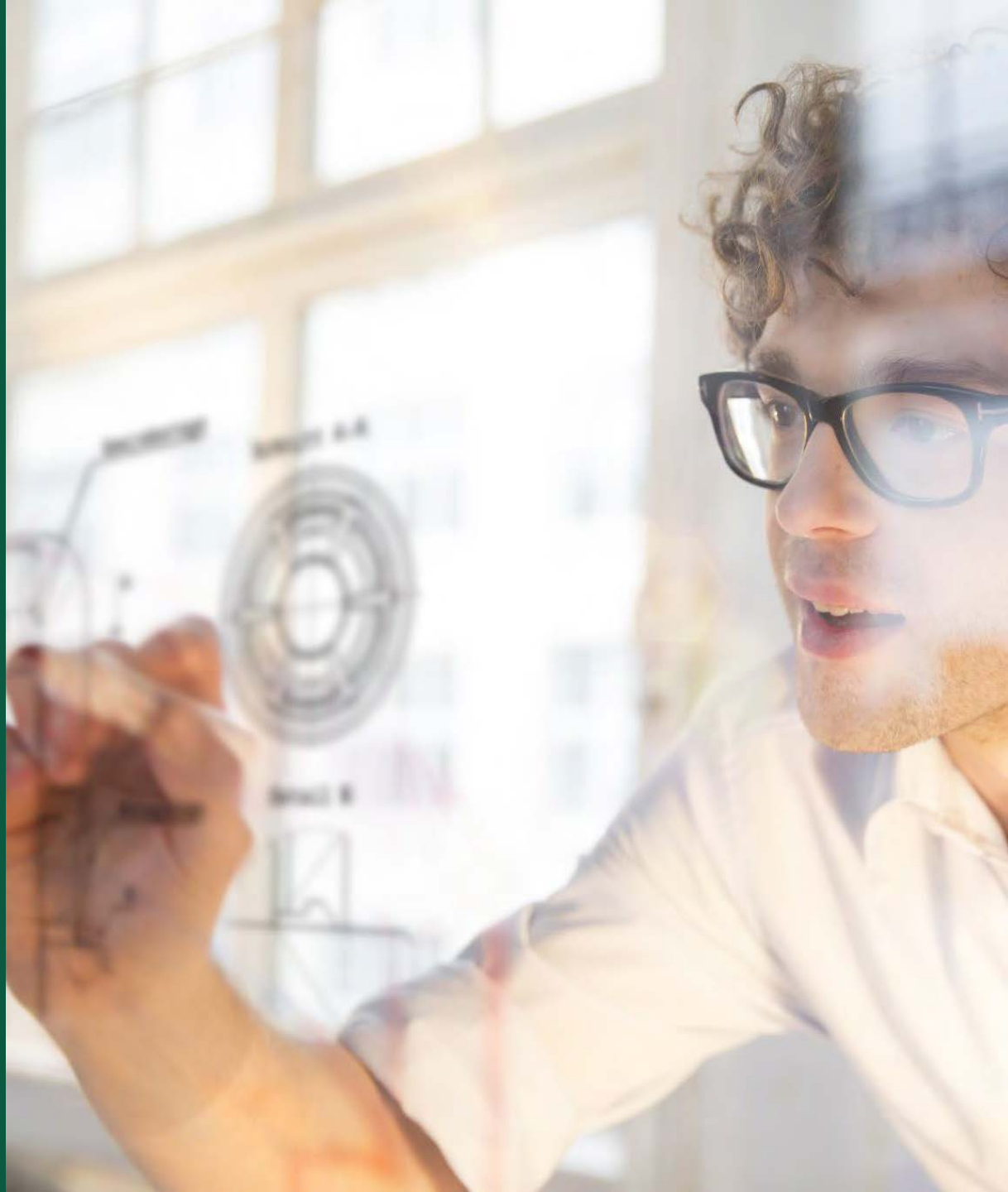
BY \_\_\_\_\_ DATE \_\_\_\_\_  
NEXT CAL. DUE \_\_\_\_\_  
INSTRUMENT # \_\_\_\_\_



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Design  
Continuity

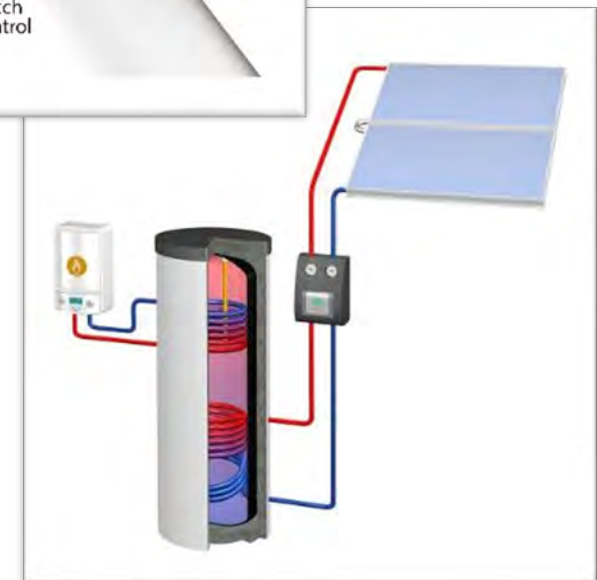
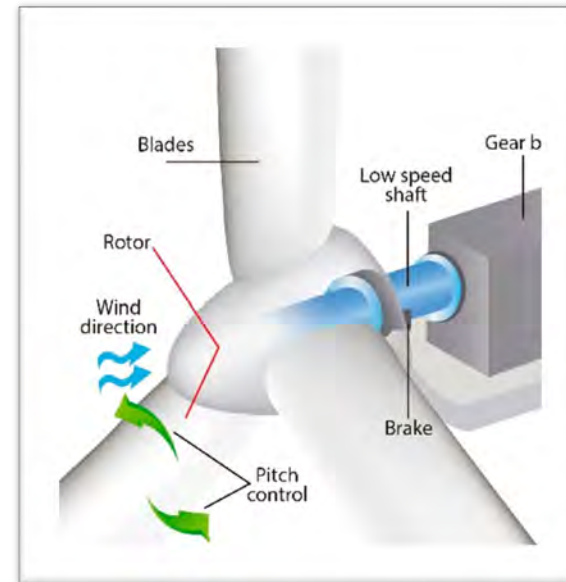




# Design Continuity

Design of certified products and systems are checked for changes.

- Inspectors may compare product design to drawings, manuals and test reports submitted to SRCC at the time of certification.
- At least one model will be selected by the inspector for more detailed design review during each surveillance inspection.
- **Change management**
  - Design, material and production changes must be declared to SRCC to assess the impact on the certification.
  - Listees should have a policy requiring prompt reporting of design, material & production changes.





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## ICC-SRCC Program Requirements





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# Product Labeling

Labeling is used to indicate that a particular product has been certified and meets the requirements of the certification body.

- Allows building code officials in the field to link a physical product to a certification.
- Provides key product information.
- Labeling is prescribed in the US model building codes.

**LABELED.** Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.



# Label Content

- Product marking and labeling must meet ICC-SRCC requirements, set by the relevant standard:
  - ICC 901/SRCC 100 - 2020, Section 502
  - ICC 900/SRCC 300 - 2020, Section 402
- Can be combined with other labels and marks



## IDENTIFICATION:

Certified systems must be identified with the OG-100 certification mark below in accordance with the [Rules for Certification and Certificate Use](#) and labeled in with the information below per [ICC 901/SRCC 100](#):



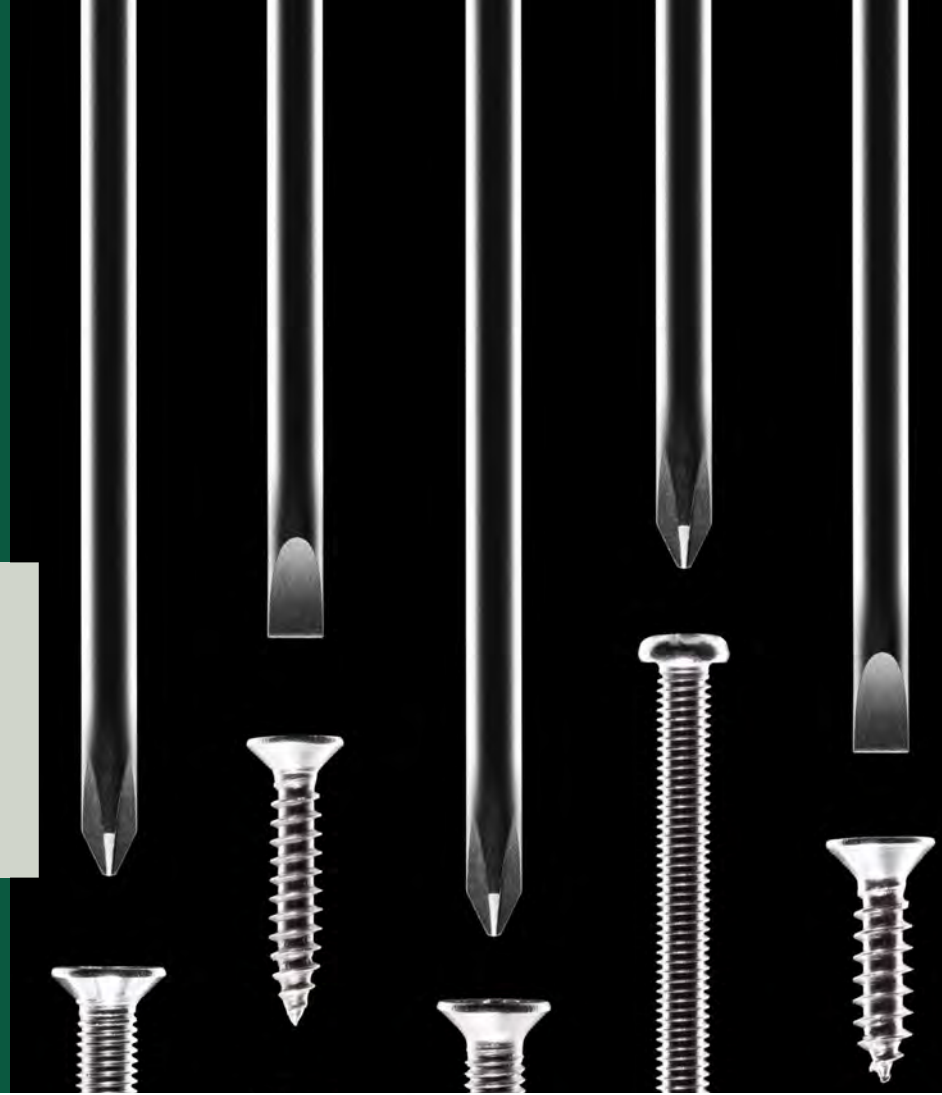
1. Manufacturer's name and model number.
2. OG-100 collector certification number
3. Maximum operating pressure
4. Dry weight
5. Fluid volume
6. Compatible heat transfer fluids
7. Standard stagnation temperature
8. Year of manufacture and/or serial number.





# ICC-SRCC Label Templates

- ICC-SRCC no longer requires the use of its specific label design. Instead, must have:
- SRCC certification mark
- Information required by standard. (see Identification section of certificate)
- Mark artwork provided at award of certification, renewal and upon request
- Compliant label template available upon request.
- May use QR codes to link to the certification.

For more details, see [SRCC Rules for Mark and Certificate Use](#)



	This product certified by the <b>Solar Rating &amp; Certification Corporation™</b> <a href="http://www.solar-rating.org">www.solar-rating.org</a>		
	Collector Type:	Glazed Flat Plate	
	OG-100 Certification Number:	10001234	
	Dimensions:	2440 x 1220 x 100 mm (96 x 48 x 4 in.)	
	Certification Standard:	ICC 901/SRCC 100-2020	
	Gross Area:	3.0 m <sup>2</sup> (32.3 ft <sup>2</sup> )	
Model:	Solar Collector ABC	Max Operating Pressure:	1000 kPa (145 psi)
Certification Holder:	Solar Thermal Collectors Inc.	Standard Stagnation Temperature:	200°C (93°F)
Manufactured in:	Country	Empty Weight:	20 kg (44 lbm)
Serial Number:	123456	Fluid Volume:	10 L (3 gal.)
		Fluid(s):	Water or Water-Glycol Mixture



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## ICC-SRCC Inspection Process

How are inspections conducted?



# Third-Party Inspection Providers

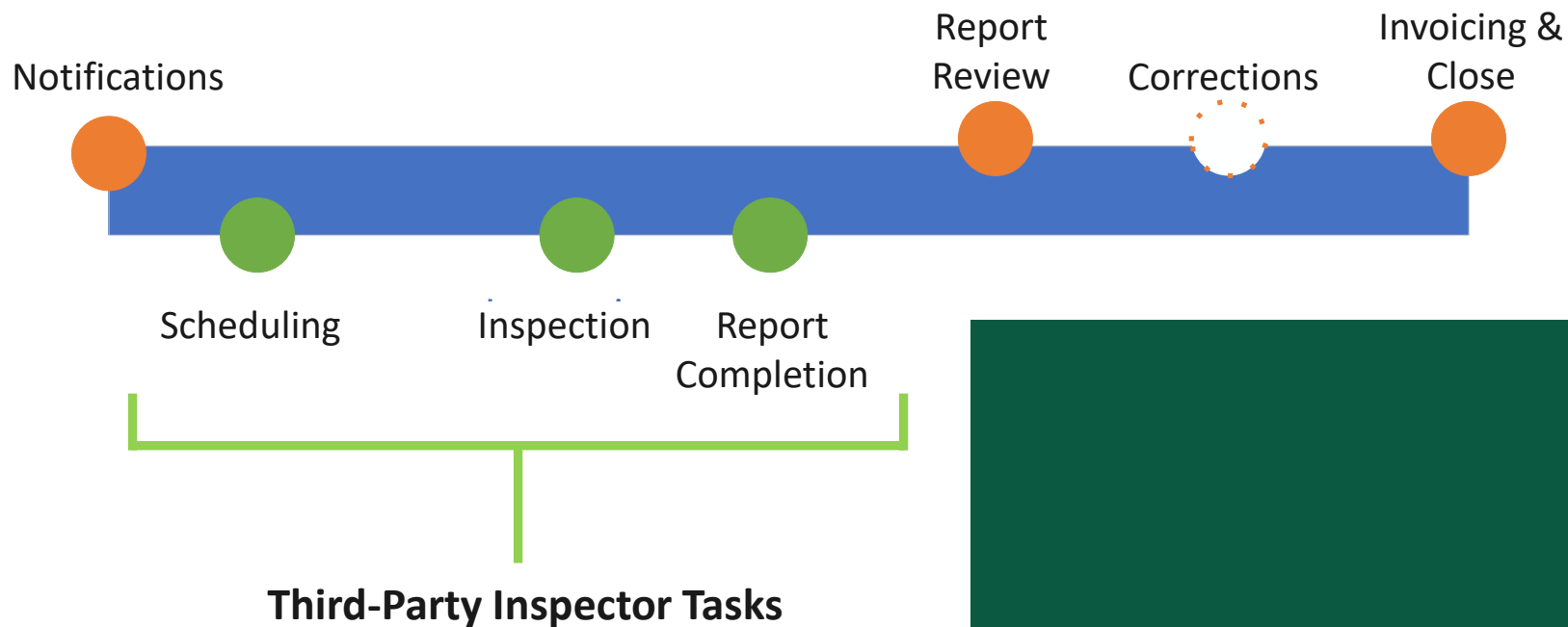
ICC-SRCC works with several accredited, approved inspection providers for global service.

- Domestic – ICC-NTA
- International
  - AENOR\*
  - DINCERTCO\*
  - DQS Hellas\*
  - ICC-ES
  - IGTE\*
  - Quality One
  - Shanghai Hongjun Science & Technology Co.
  - SPF\*
- Inspection agencies are under contract with ICC-SRCC
  - Required to adhere to strict confidentiality and impartiality rules

\*Provider of both Solar Keymark and SRCC inspection services



## SRCC Staff Tasks



ICC-SRCC  
Inspection Process

# Inspection Fees

- Inspection fees are assessed by ICC-SRCC. The listee will not receive an invoice from the inspector.
  - Domestic Fees – Flat rate includes travel
  - International Fees - Vary with location of facility and assigned inspector
- Inspection fees are **NOT** included in annual renewal fees
  - Exception: Self-assessment processing fees are included with renewals
  - Inspection fees are assessed after the inspection has been completed.

**NOTE:** If inspections for other certification programs are conducted at the same time (e.g. Solar Keymark) the fees and forms used for them must be kept separate.



# Corrections

- Deficiencies identified by the inspector will be described in the inspection report
  - Each will be reviewed and confirmed by SRCC staff.
- Listee is notified of any deficiencies that must be addressed (“corrections”).
- Listee must provide SRCC with their plan to address them within 30 days.
  - Severe deficiencies may require immediate action and follow-up
  - Less urgent corrections will be confirmed at the next inspection.
- Very minor corrections may be addressed while the inspector is present

**NOTE:** Inspector cannot provide any consulting or guidance on quality systems. But inspectors can answer questions on SRCC program requirements.



# Remote Inspections

- SRCC requires most inspections to be conducted in-person.
  - Exceptions are granted for remote surveillance inspections on a case-by-case basis.
  - Qualifying inspections must be conducted in-person.
- Remote inspections still involve an assigned third-party inspector, who conducts their assessment using tools such as MS Teams, FaceTime, Zoom or Webex.
- Fees are similar to in-person inspections due to the increased processing and review time required.





# Miscellaneous

- Location subject to inspection is determined by ICC-SRCC.
  - Consult ICC-SRCC for special cases like contract manufacturing, field assembly or multiple facilities.
  - In certain rare cases, more than one facility may be subject to inspection.
- Inspections must be completed by the end of the year assigned.
- Inspection providers are assigned based on location, language, other certifications, and inspector availability and qualifications.
  - Listees have the right to request a different inspector but additional fees may apply.
- Inspections for each SRCC certification program are conducted together (for a given location).
  - For Example: No separate inspection for OG-100 and OG-300 certifications produced at same facility.
- SRCC requires inspections every two years.
  - On years when no inspections are conducted, listees are required to complete and submit a Self-Assessment Form





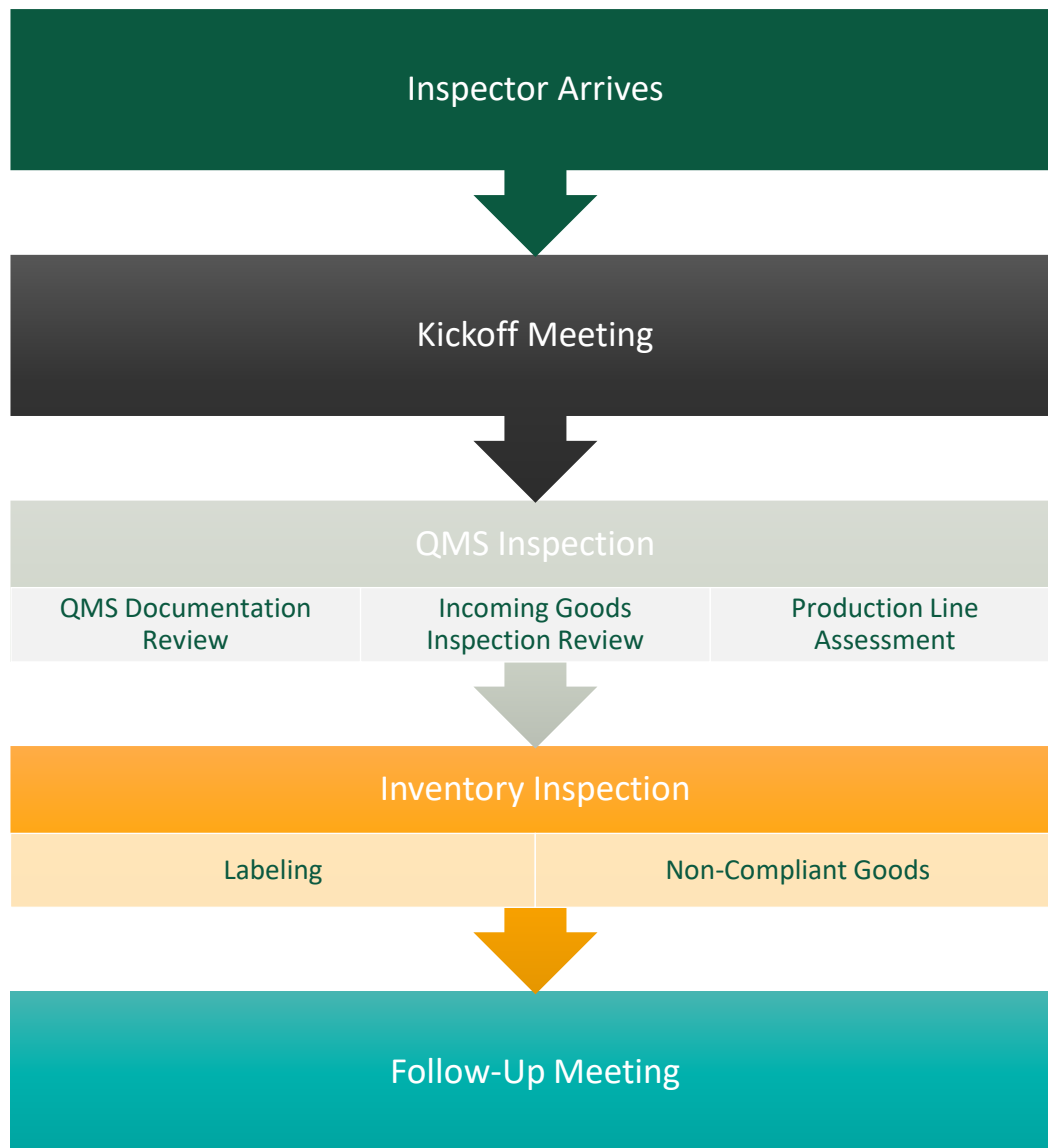
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## Day of Inspection

How are inspections conducted?



# Onsite Inspection Process







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Conclusion

## Key Takeaways

Inspections are required as a condition of certification for all programs: OG-100, 300, 400 Listings, ENERGY STAR.

Inspections check quality systems, design control, production systems, and SRCC program compliance.

Third-party inspectors conduct most inspections onsite using SRCC forms.

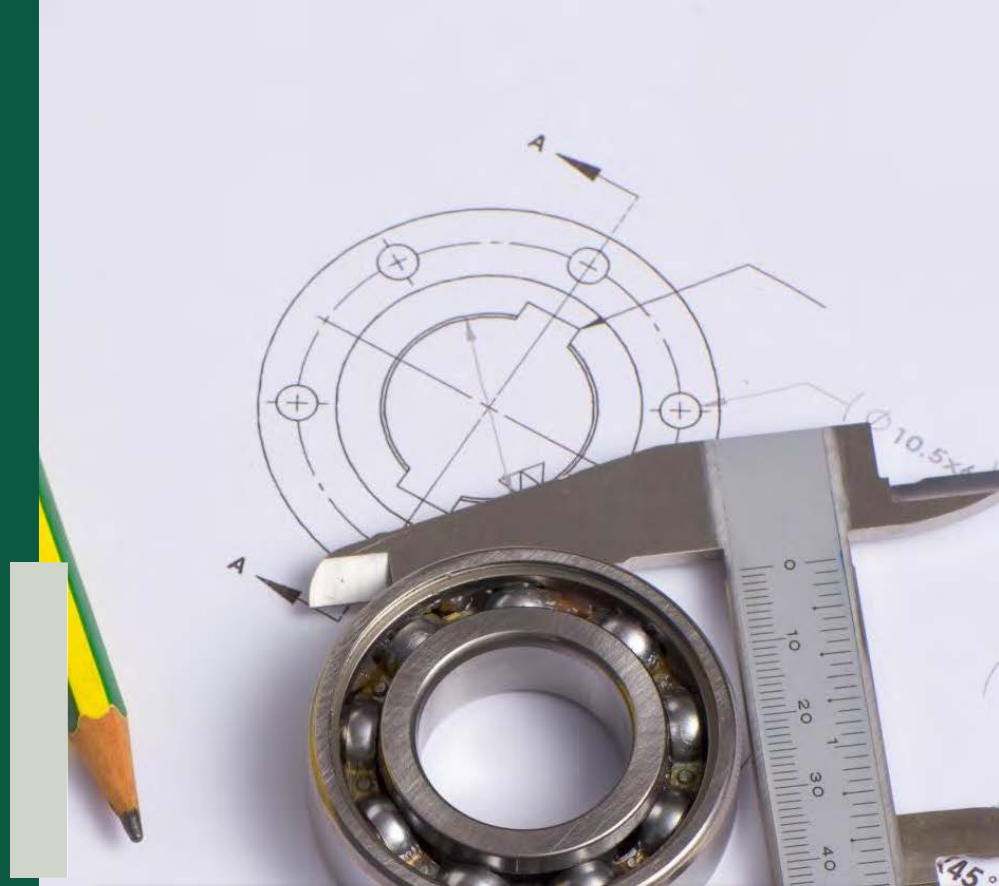
Corrections are processed by SRCC staff to address any deficiencies identified.



# Inspection Resources

- SRCC Website
  - Inspection webpage: <https://solar-rating.org/resources/inspections/>
  - Frequently Asked Questions (FAQ) webpage: <https://solar-rating.org/faqs/#Inspections>
  - SRCC Inspection Forms and Instructions (Qualification & Surveillance)
  - [Rules for Mark and Certificate Use](#)
- AC-10 document (available upon request)
- SRCC QCM Template (available upon request)
- Logos and label template graphic files (available upon request)

Send any requests to [srcc@solar-rating.org](mailto:srcc@solar-rating.org)



## Inspections

Inspections of factory production facilities and quality management systems is a key part of most product certification programs accredited to ISO/IEC 17065. While laboratory testing provides information on specific product samples at one point in time, it does not address the performance of products manufactured in the future. Inspections assess the quality systems put in place to produce products that are comparable to the tested samples.

ICC-SRCC requires periodic inspections for the OG-100, OG-300, OG-400 and listing programs for solar thermal products. Listees are notified early each year whether an inspection will be required on a given year. New listees must undergo an inspection within 6 months of the award of the first certification or listing.



During inspections the inspector will

- Review the quality documentation and confirm the effective implementation of the quality system.
- Verify any special requirements in the certification.
- Identify any discrepancies between conditions at the production facility and ICC-SRCC requirements.
- Document Corrective Actions to address non-conformities.

Have more questions about inspections?  
Check out our [Inspection FAQ](#), or [contact us](#).

## Qualifying Inspections

Initial inspection for new quality systems and production facilities. Must be

## Surveillance Inspections

Follow-up inspections for facilities and quality systems that have been subject to



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