



IEA SHC Task 57

Solar Standards and Certification

Jan Erik Nielsen, SolarKey Int., Operating Agent Task 57
IEA SHC – Solar Academy, December 2018

IEA SHC Task 57

Solar Standards and Certification

- ❑ **3 years: January 2016 – December 2018**
- ❑ Successor to Task 43 “Solar Rating and Certification” (2009 – 2015)
- ❑ **Website: <http://task57.iea-shc.org/>**

IEA SHC Task 57

Solar Standards and Certification

Operating agent: *Jan Erik Nielsen, SolarKey Int., Denmark*

- ❑ Subtask A: Kick-off of the operation of Global Solar Certification Network
Harald Drück , IGTE, Germany
- ❑ Subtask B : Improvement of test procedures – support and input to ISO
He Zenian, BSERI, China
- ❑ Subtask C : Promotion and capacity building with respect to ISO standards and state-of-the-art certification schemes
Ashraf Kraidy, RCREEE, Egypt

Subtask A

Global Solar Certification Network (GSCN)



The GSCN facilitates cross-border trading for manufacturers and other suppliers of solar thermal products; **its objective is to minimize the need for re-testing and re-certification in each new country where products are to be marketed and sold.**

The GSCN is made up by industry representatives and participating certification bodies, test labs and inspection bodies + supporting members – from all over the world.

The GSCN concept of re-using test and inspection reports in different certification schemes is now working for solar collectors. It has already been used by the first manufacturers – saving them a significant amount of money and time.

More information at the GSCN website: WWW.GSCN.SOLAR

Subtask B

Improvement of test procedures – support and input to ISO



❑ Three draft proposals from China for new ISO standards for solar thermal systems and components!

❑ Test methods for mechanical load on support of close-coupled solar water heating systems

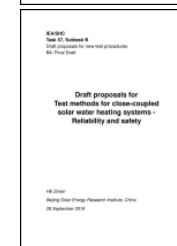
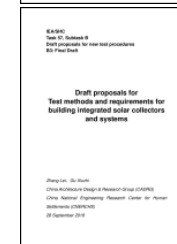
This is a final draft to be proposed to ISO/TC 180

❑ Test methods and requirements for building integrated collectors and systems

This is a final draft to be proposed to ISO/TC 180

❑ Test methods for close-coupled solar water heating systems - Reliability and safety

This is a final draft to be proposed to ISO/TC 180



Subtask B

Improvement of test procedures – support and input to ISO



- ❑ One draft proposals from Denmark for new ISO standards for solar thermal systems and components!
 - ❑ **Check of solar collector field performance**
Has been delivered as proposal for new Work Item to ISO/TC 180



Scope

*This document specifies a procedure to **verify the performance of large collector fields**. The collectors in the fields can be glazed flat plate collectors, evacuated tube collectors and/or tracking, focusing collectors.*

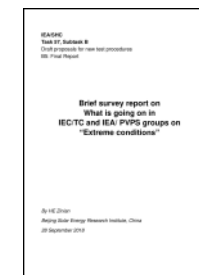
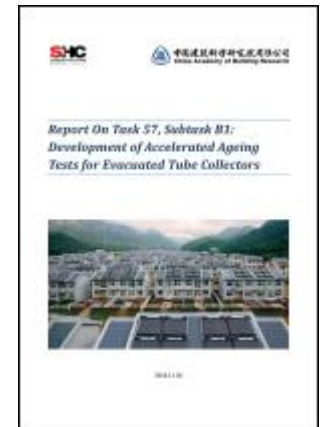
The check is done on the thermal power output of the collector field – the document specifies how to compare a measured output with a calculated one.

The document applies for all sizes of collector fields.

Subtask B

Improvement of test procedures – support and input to ISO

- ❑ Work on accelerated ageing testing of collectors
 - ❑ **Chinese project on evacuated tubular collectors:**
 - ❑ Report: Development of Accelerated Ageing Tests for Evacuated Tube Collectors
 - In some cases significant influence of ageing is seen on the heat loss coefficient
 - ❑ **German project on flat plate collectors:**
 - ❑ Speedcoll project: <http://www.speedcoll.de/en/home.html>
 - ❑ Speedcoll2 project: <https://www.speedcoll2.de/en.html>
 - In general little influence of ageing is seen
- ❑ Survey on IEC/TC & IEA/PVPS work on “Environmental extreme conditions”



Subtask C

Promotion and capacity building with respect to ISO standards and state-of-the-art certification schemes

❑ Guidelines on ISO 9806

Comprehensive guideline for use of the new solar collector testing standard ISO 9806:2017

❑ Guideline for establishing/implementing certification schemes

Guidelines targeting “new certification regions”

❑ Questionnaire / analysis on use of ISO 9806

*Looks at the global implementation of ISO 9806 – **good uptake!***

GUIDE TO STANDARD ISO 9806:2017

*A Resource for Manufacturers, Testing
Laboratories, Certification Bodies and
Regulatory Agencies*

Version 2.0
05th October 2018
DOI: 10.13140/RG.2.2.27725.08168



Task 57 Solar standards and certification

Version 1.1

Guideline for Implementing Certification Schemes
for
Solar Heating and Cooling Products



Jan Erik Nielsen
SolarKey Int.



UTILISATION OF ISO9806:2017 IN
GLOBAL SOLAR CERTIFICATION
A REPORT FOR IEA SHC TASK 57
SOLAR RATING AND
CERTIFICATION

K. Gutberlet, J. Parker and S. Guthrie
November 2018



IEA SHC Task 57

Solar Standards and Certification

Some perspectives for solar standards and certification – position paper

Solar Standards and Certification

Position Paper

Harmonizing - at international level - testing standards and certification schemes makes it possible to:

- ❑ save very significant resources for product testing and certification
- ❑ increase product quality

We have **international standards** for testing of solar thermal systems and components. The tasks/challenges are here:

- ❑ continuous updating and adaption to new technology, products and requirements
- ❑ promoting use of the standards

We have some well-established national/regional **certification schemes**. The tasks/challenges are here:

- ❑ harmonizing existing certification schemes
- ❑ establish new certification schemes where needed

Solar Standards and Certification

Position Paper

The barriers for developing/maintaining ISO standards are:

- lack of quality infrastructure in general in some countries
- lack of resources** for participating in national standardization work groups
- lack of resources** for participating in international standardization work
- lack of persons willing to take responsibility for convening international standardization work
- lack of industry participation** in standardization work
- lack of interest in harmonizing standards and certification (**protection of domestic industry**)
- country specific requirements for test procedures due to local specific conditions** (not considered in the international standard)

Solar Standards and Certification

Position Paper

The barriers for harmonizing certification schemes are:

- ❑ **lack of industry participation** – harmonization only interesting for manufacturers operation on several national markets
- ❑ **lack of interest in harmonizing certification schemes (protection of national certification bodies)**
- ❑ **country specific requirements in certification schemes due to local specific conditions**

Solar Standards and Certification

Position Paper

Actions are needed from several sides (I)

From industry side:

- organize at multinational/global level**
- participate** in ISO standardization
- participate** in the Global Solar certification Network
- put pressure** on test labs and certification bodies to use harmonized standards and certification schemes
- put pressure** on national authorities to harmonize requirements

From national authority side:

- harmonize** requirements (as far as possible) at international level
- adopt** international standards
- support** international standardization work
- support** international harmonization of certification schemes

Solar Standards and Certification

Position Paper

Actions are needed from several sides (II)



From test lab and certification body side:

- use and accept** international standards
- participate** in ISO standardization
- participate** in the Global Solar certification Network
- put pressure** on national authorities to harmonize requirements

From international funding side:

- support** international standardization work
- support** establishing standardisation and certification infrastructure in emerging markets
- support** international harmonization of certification schemes (GSCN)

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SHC Task 57
Solar Standards and Certification

Solar Standards and Certification

The task is supporting harmonized standardization and certification. The Global Solar Certification Network has been implemented and is now in operation. ISO standards have been promoted and new proposals for ISO standards have been developed. Guidelines for establishing certification schemes at different levels are given.

Global Solar Certification Network (GSCN)

The Global Solar Certification Network (GSCN) is now in operation.

The GSCN facilitates cross-border trading for manufacturers and other suppliers of solar thermal products; its objective is to minimize the need for re-testing and re-certification in each new country where products are to be marketed and sold.

GSCN gives the framework for cooperation between solar certification bodies/schemes around the world. When a product has been certified by one of the participating certification bodies/schemes, the product can obtain certification from other participating certification schemes without re-testing of the product and without re-inspection of production facilities. By the end of 2018, certification schemes from USA, Europe and China are represented in the GSCN.

The GSCN is made up by industry representatives and participating certification bodies, test labs and inspection bodies + supporting members.

The concept of re-use of test and inspection reports in different certification schemes is now working. It has already been used by the first manufacturers – saving them a significant amount of money and time.

More information at the GSCN website: WWW.GSCN.SOLAR.

Support to ISO standardization

Task Information

DURATION
January 2016 — December 2018

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What's New

NEWS | MEETINGS | PUBLICATIONS

On-site collector testing: new standard in development - Once a large solar field is set up at its designated location, what tests can be conducted to show that it performs as expected? Soon, the IEA Solar Heating & Cooling Programme may have an answer to this question, as it is working on internationalising Denmark's testing procedure. (Posted: 2018-06-06)

Global certification saves money and time - To enter new markets, solar thermal collector manufacturers need to have their products tested and certified as meeting local standards. Thanks to

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<http://task57.iea-shc.org/>



Global Solar Certification Network
A global network of certification bodies, inspectors, test labs and solar thermal industry representatives



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Introduction to the concept of "Global Solar Certification Network"

Aim

The aim of "Global Solar Certification Network" (GSCN) is to facilitate cross-border trading for manufacturers and other suppliers of solar thermal products; its objective is to minimize the need for re-testing and re-certification in each new country where products are to be marketed and sold.

Scope

The concept of "Global Solar Certification" is being implemented for solar thermal collectors and is based on the test procedures given ISO 9806. Other components as well as complete solar water heaters and solar heating/cooling systems could be included a later stage.

Concept

The "Global Solar Certification Network" is a cooperation between solar certification bodies/schemes around the world. When a product has been certified by one of the participating certification bodies/schemes, the product can obtain certification from other participating certification schemes without re-testing of the product and without re-inspection of production facilities.

Organisation

The "Global Solar Certification Network" is made up by industry representatives and representatives from participating certification bodies, test labs and inspection bodies. The Global Solar Certification Network is governed by a board of directors and managed by a manager; the Network operates under the "Global Solar Certification Network - Working Rules".

How does it work

News

November 2018
First manufacturer is using his Solar Keymark reports to get SRCC certification.

October 2018
Certification bodies from different certification schemes (SRCC in US and Solar Keymark in EU) have joined the network - the concept of re-using test and inspection reports for new certification is now ready to operate.

September 2018
IEA SHC Task 57 "Solar Standards and Certification" Expert meeting connected to EuroSun conference in Rapperswil, Switzerland.

March 2018
[GSCN meeting in Madrid March 7th, 2018.](#)

December 2017
[GLOBAL CERTIFICATION SAVES MONEY AND TIME. Video interview with GSCN Manager Jan Erik Nielsen at SWC 2017 in Abu Dhabi](#)

January 2017
Three of the worlds biggest solar collector manufacturers have join the Global Solar Certification Network

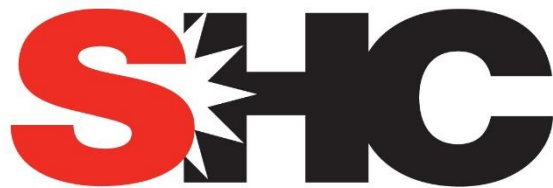
October 2016
IEA SHC Task 57 "Solar Standards and Certification" Expert meeting and workshop together with SHAMCI Network in Cairo.

July 2016
2016-07-07: Final complete version of approved GSCN working rules published - see: [Documents](#)

March 2016
2016-03-10: Main part of GSCN working rules approved

<http://gscn.solar/>

www.iea-shc.org



SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

Thank you for your attention

Jan Erik Nielsen

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