



Quality Assurance in Solar Heating and Cooling Technology

1. Introduction

The Solar Keymark (SK) is the European wide Quality label for solar thermal products

The Keymark is the pan-European voluntary third-party certification mark, demonstrating to users and consumers that a product conforms to the relevant European Standard(s).

It is a CEN/CENELEC European Mark Scheme, also called a KEYMARK Scheme in particular for:

- Solar thermal collectors (EN12975)
- Factory made solar thermal systems (EN12976)

The SK is the reference for the industry; by 1 January 2011 the number of Solar Keymark licenses exceeded 1200, from over 500 manufacturers from 32 countries, including 18 EU member states.

2. The process of certification and issue of the quality mark

The SK is based on European standards and operated under the control of the European standardisation bodies

The Solar Keymark demonstrates the **conformity of products to European standards** adopted by CEN, entitling them to make use of the CEN European mark of conformity to the relevant European standards. This **voluntary European product certification system** is operated by the Solar Keymark network, which has been empowered by CEN.

The certification requirements meet highest standards

To ensure that every single product on the market is identical to the tested products the Solar Keymark network decided to use the third party certification procedure and thus testing is on products randomly selected, complemented by a quality management control of the production lines.



3. The Solar Keymark covers all product features and types

Current product features & types

The Solar Keymark covers the requirements of EN12975 (Solar Thermal Collectors) and EN 12976 (Factory Made Systems). This certification scheme has been developed to follow permanently the standards' developments and to adapt itself to the needs of the European market. Therefore, the Solar Keymark Network (in charge of managing the certification scheme) has, for instance, included in the scheme a flexible certification for collectors and system families or a compatibility listing for exchange of sub-components, that facilitate the introduction of new products into the market while ensuring their quality for the consumers.

Future product features & types

The Solar Keymark will follow the upcoming developments of the relevant standards, such as making Solar Keymark available for "Custom built systems" by including specific Solar Keymark scheme rules for the new EN 12977 series.

4. Future developments

Revision of EN12975 (Solar Thermal Collectors)

A revision of the EN12975 is being carried out and some of the proposals are being developed thanks to the support from the Intelligent Energy Europe programme to the project QAiST (Quality Assurance in Solar Heating and Cooling Technology: www.qaist.org), on topics such as:

- **Tracking concentrating collectors:** are now within the scope of EN12975 and the procedures for durability tests are being developed. This will facilitate the market deployment of this type of collectors, increasing the potential of high temperature applications in the European market;
- Introduction of "**classes definitions**": **mechanical load tests, impact resistance and exposure tests** will have definition for classes in the revised standard. This means that tests will be defined in terms of classes corresponding to increasing levels of stress and that manufacturers can decide on which class to test their products, allowing more flexibility also on defining requirements at national level;



- Improvement **of the description of test procedures** are under way, such as for the rain and exposure tests, and will not only facilitate testing but also make the results' evaluation more reliable;
- **Solar thermal air collectors**: addressing an urgent requirement in the European market and following developments beyond Europe for this type of collector, it is anticipated to have a new proposal covering performance and durability of closed and open loop air collectors,
- **Evacuated Tube Collectors**: attending to the needs for improved quality assurance for this type of collectors, common efforts are being planned in order to provide input to a revision in 2012 or 2013 of EN12975.

Strong cooperation at European and international level

A stronger cooperation is being established between CEN/TC312 (Solar Thermal products) and other relevant CEN/TCs in order to better reflect in the development of the EN12975 series, such as TC128 (Roof covering products) and TC 254 (Flexible sheets for waterproofing).

Also at international level, both due to the success of the Solar Keymark and the European edge in terms of quality assurance, the work being carried out in Europe is paving the way for improved international standards and even a possible global quality label.

Introduction of CE marking for Solar Thermal collectors

The European Commission, based on a proposal developed by ESTIF and CEN/TC 312, has approved a mandate for the development of a CE marking for Solar Thermal collectors. This means that the requirements for a CE marking of solar thermal collectors will now be developed. According to the mandate, it will include structural load, fire resistance and weather tightness tests. It is expected that this can already be introduced in the upcoming revision of EN12975. Therefore, already in 2012, EN12975 may include structural and fire safety plus weather tightness, setting the basis for the implementation of the CE marking and for harmonized standards with requirements originating, amongst others, from the construction products directive.

5. Quality Assurance around Europe

The QAiST project provides an overview of the current situation with regard to quality assurance in several European countries. This information can be accessed at www.qaist.org or www.solarkeymark.org.