



Solar Keymark in Europe

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What may have the following things in common?

- floor heating
 - waste water pipe
 - thermal insulation
 - cast iron pipes
 - sun glasses
 - ladders
- They may **fulfil** the requirements of the relevant **European Standards**
 - They may be produced in a factory where an **quality management** is implemented.
 - Both aspects are **controlled by an independent party** periodically.
 - So they can be granted are **Keymark**





KEYMARK

- The Keymark is the pan-European voluntary third-party certification mark, demonstrating to users and consumers that a product is in conformity with the relevant European Standard.
- At the moment **25 certification bodies** located in 15 different European countries already operate Keymark schemes on the basis of almost **150 European Standards** for 28 product groups.
- The Keymark should not be confused with CE marking.



European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung



.. the key to the
European market!



What is the “**SOLAR**” Keymark?

- CEN/CENELEC European Mark Scheme, called also a KEYMARK Scheme specially for
- Solar thermal collectors (EN12975)
- Factory made solar thermal systems (EN12976)
- Product certification
- independent factory inspection / QMS (periodically)
- independent testing according to EN standards (test samples to be sampled by independent inspector)
- biannual “surveillance test”, detailed inspection of products





The Solar Keymark History

- Before 2003: If you wanted to sell one collector to different countries in Europe, you had to undergo several different tests and gain additional certificates and approvals.
= very complicated, expensive and cumbersome
- → in 2003 the European Solar Thermal Industry and major testing institutes formulated the Solar Keymark Scheme rules
- **major goal:** to reduce the wild growth of testing requirements, establishment of certificates in order to reduce the trade barriers and open the European market for solar thermal products

Current standards

- **Collectors – EN 12975:**
 - Durability, reliability, safety, performance of liquid heating collectors, glazed & unglazed, “low” temperature
 - Not included: tracking concentrating collector, acc. ageing, air collectors
- **Factory made systems – EN 12976:**
 - Durability, reliability, safety, performance of “kits”
 - Not included: combisystems, air systems, cooling





EN 12975 – Scope of application

- liquid heating collectors
 - flat plate
 - evacuated tubes
 - uncovered absorbers (i.e. for swimming pools)
- validating the durability, reliability and safety requirements
- 3 test methods for the thermal performance characterisation
- not applicable to:
 - collectors in which the thermal storage unit is an integral part of the collector to such an extent that the collection process cannot be separated from the storage process. □ EN12976 – Premanufactured Systems
 - not applicable to tracking concentrating collectors



EN 12975 – Tests to be performed

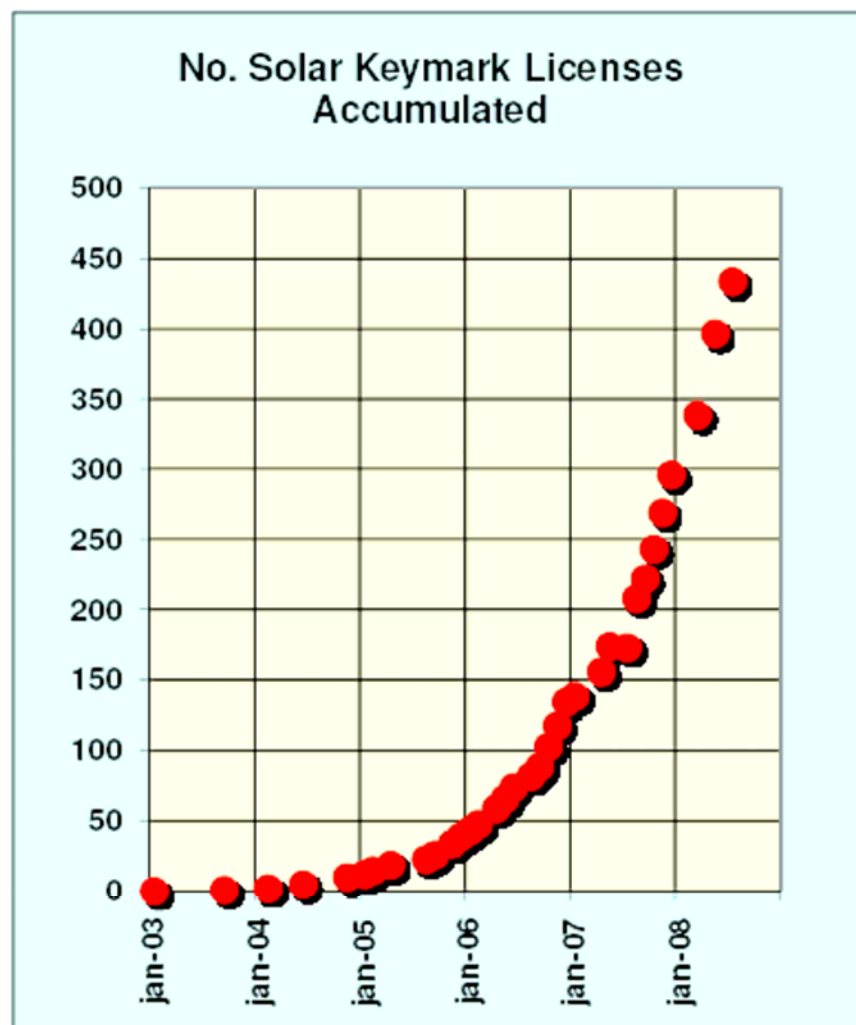
- Internal pressure
- High-temperature resistance / Stagnation temperature
- Exposure
- Internal & External thermal shock tests
- Rain penetration
- Freeze resistance (if freeze resistant collector)
- Mechanical load
- Thermal performance
- Impact resistance (optional)
- Final inspection
- Thermal performance test





The trend

- strong increase of certified products
 - over 500 products
- all national subsidy schemes and regulations in EU accept Solar KEYMARK
- only exceptions:
 - Spain: ISO 9001 certificate
 - Germany: „Blue Angel“ declaration (525 kWh/a)
 - France: some insurance companies ask for CSTBat)





How can I get one?

- apply for Solar Keymark at Certification Body
- factory inspection – quality management system at production site
 - ISO 9001 recommended but not strictly required
- sampling of items to be tested out of production or stock
- testing of items in independent laboratory according to EN standards
- Certification Body grants Keymark



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... and then?

- **start marketing**
the Solar Keymark states to the buyer:
 - reliable quality
 - reliable performance information
- **start exporting**
 - The Solar Keymark works almost all over Europe
 - No need for the doing the same tests in the different countries
- **regular inspection of product and factory**
- **paying annual certification fee**
- **report changes in product**





Resume of benefits

- **reduced testing for producers**
 - one test for all countries
 - freedom of choice with testing centres
 - type testing instead of testing of all possible collectors (different sizes,..)
 - **high quality products on the market**
 - e.g. no Chinese products have passed the testing so far at arsenal research
 - **improved quality**
 - through factory inspection the standard of production processes improves
 - **gives financing institutions confidence to support high quality**
- keeps financing schemes alive



Are there any problems?

- no valid EN standard → no Keymark
 - solar air collectors, collectors made of polymers, ..
- duration: 3-6 months
 - mostly due to long duration of durability testing which depends on the actual weather
- still some additional requirements
 - Germany, Spain, France
- Solar Keymark scheme rules and standard need rework to be more efficient and open for new developments



Solar Keymark Network

- to ensure a smooth process of Solar Keymark certification
- Updating the Solar Keymark certification scheme
- promotion to make it accepted in all national building regulations and renewable energy subsidy schemes
- quality assurance measures such as round robin tests are performed

Participants:

- empowered certification bodies
- accredited test labs
- inspection bodies
- solar Keymark secretariat (ESTIF)
- official representative from CEN
- chairman of TC 312
- chairman of ISO 180
- **One representative of each national trade association that is a member of ESTIF**
- **Industry participants raising issues being discussed at the meeting.**



Outlook

- Revision of standard series EN 12975 Part 1 & 2
- Solar Keymark for solar storages according to EN 12977-3
- IEA-SHC Task 43 on testing and certification
- IEE project on updating standards for solar thermal applications (QAiST – Quality assurance in solar thermal heating and cooling technology)

- more countries will make Solar Keymark a requirement for financial incentives
- nonEU countries (Australia, US,..) will accept the Solar Keymark



Further information

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www.solarkeymark.org

- list of certified products
- list of testing laboratories
- list of certification bodies
- download of brochures detailed country reports



www.estif.org





Keymark versus CE marking

The Keymark is very often confused with CE marking.

- The Keymark is a demonstration that the product is in conformity with the relevant European Standard.
- The Keymark can help to choose between products conforming to the legally required minimum characteristics in the European Economic Area, and products conforming to the complete European Standard.
- The Keymark is a Quality mark.
- The Keymark addresses users and consumers.
- The Keymark is a voluntary certification mark.
- The Keymark can only be granted by certification bodies, who are responsible to ensure continued compliance of the product with the requirements.
- **CE marking** is an indication that the product should be in conformity to the provisions of all applicable European Directives.
- **CE marking** can be based on compliance of the product with the characteristics mentioned in Annex ZA of the relevant harmonised European Standard. Some characteristics in that standard may not be included in Annex ZA.
- **CE marking** is a passport for the EU market.
- **CE marking** addresses the responsible market surveillance authorities.
- **CE marking** is mandatory.
- The affixing of **CE marking** may require the intervention of Notified Bodies, but always remains the responsibility of the manufacturer or his authorised representative.