



# QAiST

Quality Assurance in  
Solar Heating and  
Cooling Technology

## QAiST WP2 and 6 A status report

**ESTIF STD&C meeting December 2<sup>nd</sup> 2010**

Peter Kovács\* and Jan Erik Nielsen

\*)SP Technical Research Institute of Sweden

[peter.kovacs@sp.se](mailto:peter.kovacs@sp.se)

+46 706524802



SP Sveriges Tekniska Forskningsinstitut



# Summary of presentation

**Status in CEN/TC 312/WG1**

**Status in CEN/TC 312**

**Status in ISO/TC 180 SC5 “Collectors”**

**Status in QAIST WP2:2 (Guideline)**

**Status in QAIST WP2:3 (Energy output calculations)**



SP Sveriges Tekniska Forskningsinstitut



# Status of work in CEN/TC 312/WG1

- **“Final” input for the 2011 revision to be prepared in Stockholm 2011-01-26—27**
- Tracking concentrating collectors are now within the Scope of EN 12975 (amendment approved in UAP)
- Definitions have been jointly developed with the IEA SH&C Task 43
- Durability of tracking concentrating collectors: A draft annex for the EN 12975 was developed and discussed at the WG1 meeting in Graz in October. The intention is to include it in the draft standard to be finally edited in Stockholm.
- Mechanical load tests, impact resistance, and exposure tests will have “classes definitions” in the revised standard meaning that the requirements for these tests will be defined in terms of classes corresponding to increasing levels of stress.

The manufacturer decides on which class to test for



SP Sveriges Tekniska Forskningsinstitut



# Status of work in CEN/TC 312/WG1

- Rain and Exposure test will be revised in the draft in a way that will facilitate testing and make the evaluation of results more reliable.
- Air collector testing: A Canadian standard has recently been approved. It covers closed and open loop collectors and covered as well as uncovered. It describes durability as well as performance tests and the former are very close to the ones defined in EN12975 for liquid heating collectors. Fraunhofer ISE expect to have a draft covering performance and durability of covered closed- and open loop air collectors ready for inclusion in the EN 12975 in time for the Stockholm meeting.



SP Sveriges Tekniska Forskningsinstitut



# Status of work in CEN/TC 312/WG1

- Revision inputs on ETC:s are scheduled for the second half of Qaist and the partners are now planning common efforts in this field to provide input to the 2012/13 revision.
- CE-marking: The EC has eventually approved the proposal developed by ESTIF and CEN/TC 312. This means that the requirements for a CE marking of Solar thermal collectors now shall be developed. This will include structural load, fire resistance and weather tightness and our intention is to have this ready for the upcoming revision if possible, in terms of an annex ZA.



SP Sveriges Tekniska Forskningsinstitut



# Details related to CE-marking of collectors

Structural load	Equal to mechanical load and taken care of in EN12975 once collector fixings are in	We will try to include fixings in the next rev!
Fire resistance	Two EN standards exist. One for classification and one for testing. Not all collectors need to be tested and for those that do, it will cost appr. 2000 EUR	External ref. in 12975 means that SK≠CE
Weather tightness	Is the current rain penetration test enough to take care of this? Requirements on fixings and cover sheets?	The Qaist point of view is that the current test should be the only requirement on the collector manufacturer.

# Status of work in CEN/TC 312

- The Work item on the EN 12975-1,2 revision has now been activated
- A Preliminary Work item on EN 12975-3 “Solar Collector materials” has been registered. In a first instance the “Task X method” for testing absorber surfaces will be included in this standard
- Liaisons with TC128 (Roof covering products...) and TC 254 (Flexible sheets for waterproofing) has been established with Korbinian Kramer as link to CEN/TC 312. Furthermore liaisons to IEC/TC 82 (PV&PVT) and ISO/TC 180 (Solar Thermal components and systems) has been established and are managed by Peter Kovacs.



SP Sveriges Tekniska Forskningsinstitut



# Status of work in ISO/TC 180/SC5 Collectors

- There is an ongoing discussion between CEN/TC 312 and ISO/TC 180 regarding the development of a collector standard i.e. the revision of ISO 9806. We now have an agreement to have it follow the revision of EN 12975 so that eventually there will be an EN ISO 12975.
- Former Group on collector standards in ISO, SC5 has now been formally closed. A new ISO WG will be established for this work.
- CN initiative: According to the ISO chairman the standard proposed by China mainly deals with quality related to manufacturing , i.e. “how to manufacture high quality ETC”



SP Sveriges Tekniska Forskningsinstitut





# The Guide to EN 12975

- One document aimed for manufacturers (Introduction the standard, own testing etc)
- One document aimed at new test labs as a fast introduction to collector testing
- Distribution of work:
  - LNEG-Durability
  - ISFH- SS testing of unglazed collectors
  - DEM- SS testing of glazed collectors (not indoors)
  - AIT- Chapter 7 (except 7.1(SP) and 7.4 (ITW))
  - SP –The rest
- Work is ongoing, internal deadline moved to mid March



SP Sveriges Tekniska Forskningsinstitut



# Energy output calculation tool (SP- Due June 2011!)

- Generalization of the irradiance calculations and the collector model is ongoing --> Tracking and uncovered collectors to be included
- First version of uncertainty calculations available and presented at SKN meeting in Graz
- All this to be decided for inclusion in Solar Keymark Scheme rules in March 2011
- A generalized version is to be decided for inclusion in scheme rules at the March 2011 SKN meeting



SP Sveriges Tekniska Forskningsinstitut



**Thank you for your  
attention!**

