CERTIFICATION BASED ON IN-SITU MEASUREMENTS

Boundary conditions – open questions

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www.collectortest.de

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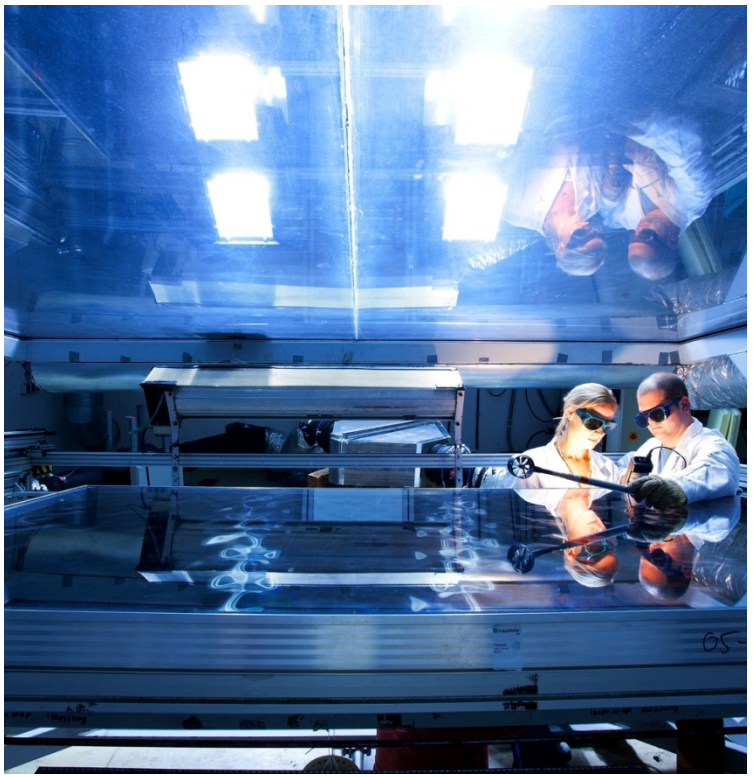
Focused Items

- Sampling
- Calibration
- Accreditation
- Documenting Results
- Certification
- Modifying the Product
- Substituting Parts
- Scaling Results
- Calculating Energy Output



Sampling

- The test sample shall be representative for the product planed to be certified
- Normaly a sample is taken from production/stock
- Using an existing collector can be possible but should be double checked with the respective certification body
- Later changes are possible, but can come with extra effort
- So it is reasonable to certify a product at a ready for market stage

Calibration

- Tests are based on measurements done using calibrated equipment
- Or the traceability of the calibration in the field is elsehow asured and documented
- It can be equipment from the manufacturer, if the test laboratory supervising/ performing the measurement can make sure within the scope of its accreditation that the equipment had the correct calibration status
- Measurement from older campaigns often can not be used for example because of such a shortcomming

Accreditation

- The certification of SolarKeymark, SRCC, GSC, ...are all based on an approach including external accredited laboratories and accredited certification bodies
- The accreditation for a test laboratory is based on ISO 17025, this declares that the results are traceable and the equipment used fulfils the requirements of the standards applied, et alt.
- The details of the test standards a test laboratory is accredited for is very important, as it lists the methods and standards, which are realy available

  e.g. Not every laboratory, accredited for applying EN ISO 9806, can really apply the whole standard.
- To do an in-situ measurement under the accreditations scope, the laboratory needs an extra status from ist accreditation body

Documenting Results

- The documentation of measurement boundary conditions and results is most essential.
- Basis is the required minmium documentation as it is given in the annex of the applied standard.
- More information surplus to this is often necessary to achive transparency.
- Especially in cases where deviations from the standard methods are necessary, a very clear documentation of those is required.
- Because, based on the test report;
  - The certification body decides pro/contra a certificate
  - Later technical changes are discussed
  - The product is identified and re-evaluated

Certification

- Certification of products is always based on a certification scheme, which is organized by (scheme) rules
- Product certification is valid for a defined product(s) (family)
- Certification is from the technical point of view based on the fulfilment of respective technical industry standards
- And it is based on an intial and on-going quality assurance system, assuring a stable product
- Certification is providing transparency, meaning there is a fixed way how and that some technical parameters are published

Modifying the Product

- Technical changes are normal from time to time
- A certificate has to be re-newed after 10 years
- Technical changes are okay within certification, but have to be properly deald with
- They are reported towards the certification body, discussed with the test laboratory
- And in case necessary documented in a gap-report
- Changes, which are „found“ just by re-evaluation can become a no-go for the certificate
- As changes generate effort, summarizing changes and doing next generation releases is more resonable, than having continously changing products

Substituting Parts

- So called A-Components, are normaly provided by at least two seperate suppliers
- From time to time new suppliers come to market and established vanish
- Having several suppliers, specifications of the component have to be technical sufficient and supplier neutral, if there is a clear brand name, those shall all be mentioned in the report, e.g. mirrotherm, etaplus,...
- Substituting within the originaly documented parts/suppliers (BoM) is then possible without any further notice
- Implementing a new supplier for an A-Component shall be reported (same way as explained for technical changes)

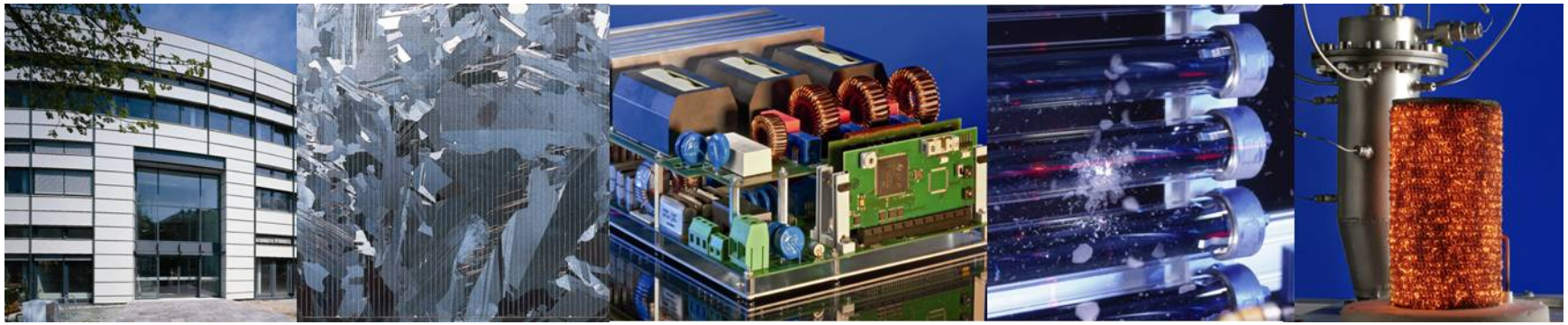
Scaling Results

- The test results of a test sample documented in the report are per defintion only valid for the sample tested
- For certification those values can be taken over or be taken as representative results for more then the single sample
- Scaling is allowing for variations in dimensions on basis of the results
- Scaling is not in all certification schemes and for all products covered in a test standard available, e.g. no scaling for ETC Thermosyphon, LFC

Calculating Energy Output

- Calculating the energy output is an accepted way of comparing the performance of collectors
- The yearly energy output calculation is not substituting any planing of an installation or dimensioning/engineering
- The calculation is often implemented into the certification scheme (rules)
- e.g. in SRCC there is a collector ranking, in SKM there is a collector output for four locations and three temperatures on the second page of the data sheet published online (based on SCEnOCalc)

Thank you for your kind attention!



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