



QAiST - Quality Assurance in Solar Thermal heating and cooling technology - keeping track with recent and upcoming developments

Contract N°: IEE/08/593/SI2.529236

Contributions to revision of EN 12976/CEN TS 12977

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Overview of WP3: Solar Thermal Systems

WP focusing the following main aspects for Solar Thermal Systems:

- i. **Improvement of the standards for Factory Made Systems (EN 12976 Part 1 and 2 [2])** focusing on aspects that need clarification in order that certification of these products takes into account **the different aspects of thermosyphon and forced circulation systems**, as well as, **uniform interpretation of criteria** when performed by different Certification Bodies and Test Laboratories;
 - Clear separation of REQUIREMENTS and TEST METHODS;
 - Clarification of applicable reliability tests (DIFFERENT TYPES of SYSTEMS); Need of additional reliability tests?;
 - Clarification of the aspects related to documentation (USER; INSTALLER)
- ii. **Improvement of the standards for Custom Built Systems (CEN/TS 12977 Part 1,2,4 and 5 and EN 12977 Part 3 [3])** considering the possibility of future certification of Storage tanks and complete systems according to improved standards;

Overview of WP3: Solar Thermal Systems

- iii. **Development of an extrapolation procedure** that proves to be valid for different types of systems allowing for flexibility in the definition of families of systems and reducing test costs for the manufacturers;
 - Two different methodologies now available;
 - Application of these methodologies by Labs;
 - Proposals for future revision;
 - Proposal of introduction of these methodologies in the standard?
- iv. **Development of a procedure for converting the test results** of the existing test method, into results valid for the “**EU reference tapping cycles**”, necessary for Labelling of systems according to future European Directive;
 - How to apply this procedure to tests performed with DST/CSTG test methodologies?;
 - First application with DST for Factory Made and Custom Built.
- v. **Definition of the concept of Hot Water Comfort for Solar Thermal Systems**

T3.1 Factory made solar thermal systems. (EN 12976)

- T3.1.1 **Clarification** of the methodologies adopted for reliability tests of different system types and preparation of **checklists** for the vague criteria related to requirements of EN 12976 (Part 1).
- T3.1.2 **Extrapolation procedure** allowing for flexibility in the definition of families of systems and reducing test costs for the manufacturers
- T3.1.3 Development of a procedure for **converting the test results** of the existing test method, into results valid for the “**EU reference tapping cycles**”, necessary for Labelling of systems according to future European Directive
- T3.1.4 Definition of a procedure for the **assessment of the hot water comfort** provided by the store being part of the factory made system.

T3.2 Custom built solar thermal systems. (CEN/TS 12977)

T3.2.1 Preparation of checklists for the vague criteria related to requirements of CEN/TS 12977 (Part 1). The work to be developed can eventually guide to a proposal of revision of the standard CEN/TS 12977.

T3.2.2 Development of a procedure for converting the test results of the existing test method, into results valid for the “EU reference tapping cycles”, necessary for Labelling of systems according to future European Directive

T3.2.3 Definition of a procedure for the assessment of the hot water comfort provided by the store being part of the custom built system

Deliverable(s) of this work package:

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|------|--|----------|
| D3.1 | Establishment of a clear checklist for support of decision on verification of reliability requirements of Factory Made Systems/Custom built systems. | Month 18 |
| D3.2 | Preparation of a Guide of procedures adopted for the reliability tests of factory made systems | Month 32 |
| D3.3 | Improved extrapolation procedure for the determination of the performance of factory made systems | Month 24 |
| D3.4 | Proposal for Energy Labelling of factory made systems | Month 24 |
| D3.5 | Proposal for Energy Labelling of custom built systems | Month 34 |
| D3.6 | Proposal for determination of Hot Water Comfort of factory made systems | Month 24 |
| D3.7 | Proposal for determination of Hot Water Comfort of custom built systems | Month 34 |



WP3 - Institutions participating

Participant No.	Participant Country Code	Participant short name
1	BE	ESTIF
2	ES	CENER
3	FR	CSTB
4	EL	Demokritos
6	PT	INETI
8	DE	ISE
9	DE	ISFH
10	ES	ITC
11	DE	IZES
12	DK	PlanEnergi
14	DE	TÜV
15	DE	USTUTT-ITW

PROJECT DURATION:
36 MONTH

From 1st June 2009
to 31st May 2012

Thank you!

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