



Research and Testing Centre for Thermal Solar Systems (TZS)

of the **Institute for Thermodynamics and Thermal Engineering**, University of Stuttgart. The TZS is amongst the world's largest testing centres for solar thermal products and a leading centre of solar research and competence.

The TZS is accredited for testing thermal solar systems and their components according to the following standards:

- EN 12975, EN 12976, EN 12977
- ISO 9806, ISO 9459-2, ISO 9459-5
- AS/NZ 2535.1, AS/NZ 2712
- ANSI/ASHRAE 93

Tests performed by the TZS provide the basis for the following certification programmes:

- European quality label "Solar Keymark"
- U.S. certification authority SRCC

The TZS performs R&D projects related to new system components, concepts for thermal energy stores, the development of advanced test methods for innovative products (e.g. solar + heat pump systems) and accelerated ageing tests.

Contact:

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in cooperation with



Institute for Thermodynamics
and Thermal Engineering
University of Stuttgart



THE SOLAR THERMAL EXPERTS IN EUROPE





Solar- und Wärmetechnik (SWT)

was founded in 2002 as the commercial branch of the **Institute for Thermodynamics and Thermal Engineering (ITW)** at the University of Stuttgart, Germany.

The main activities of **SWT** are:

- Development and construction of test facilities for solar thermal systems and components (e.g. collectors)
- Implementation of solar test labs
- Operation of the TZS (Research and Testing Centre for Thermal Solar Systems) in cooperation with ITW
- Simulation studies for solar thermal systems using TRNSYS
- CFD-simulation of fluid flow and heat transfer phenomena
- Acquisition and management of national, European and international projects
- Consultancy and expert advice to public and private bodies
- Organisation of conferences and events

Test Facilities

Design and construction of **mobile in- and outdoor test facilities** for solar thermal collectors and systems.

Due to its high expertise SWT is an internationally leading supplier of solar testing equipment and in setting up complete solar test facilities, e.g. at

- The South African Bureau of Standards (Pretoria, South Africa)
- The Hydro-Meteorological Service (Skopje, Macedonia)
- The Harry-Fultz-Institute (Tirana, Albania)
- The Tshwane University of Technology (Pretoria, South Africa)
- Sunrain (Lianyungang, China)
- Several other organisations and companies

For its latest development, a container based turn-key test facility for thermal solar collectors and systems, SWT holds an utility patent.



MOBILE SOLAR TEST FACILITY, SABS, SOUTH AFRICA

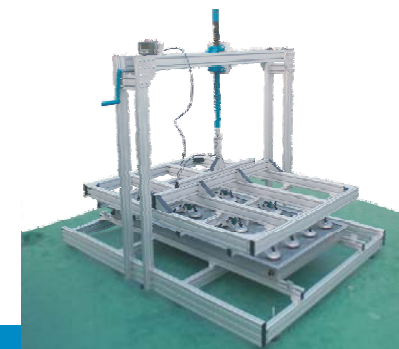
Consulting:

SWT staff act as advisors for national and international institutions and companies such as:

- The German Government (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, BMU),
- The Korean Energy Agency
- The Macedonian Ministry of Economy
- The Tunisian Energy Agency

Other services:

- Design and optimization of solar thermal systems
- Market and potential surveys related to solar thermal energies and heating / air conditioning technologies
- Special tests (ageing behaviour of solar collectors, in-situ measurements, investigations of interaction of store, gas/oil burner, heat pump, solar collector)



MECHANICAL LOAD TEST FACILITY