

Application of SolTherm software for EN 12977-2 system simulations

1. General requirements

The following items are required:

1. Final report *Other_Model 25 09 2017.pdf* available through the vAConsult website ^[1].
2. SolTherm software can be downloaded from the vAConsult website ^[1] and applied according to the user-manual included in *Other_Model 25 09 2017.pdf*.
3. Solar Keymark datasheet for the collector applied
4. Solar Keymark datasheet for the tank applied
5. Supplier statements for:
 - a. the collector pump (if applied)
specifying: brand, type, nominal electrical pump motor power consumption and control type.
 - b. the collector pump controller (if applied)
specifying: brand, type and standby power consumption

Limiting conditions:

1. The procedure is limited to the thermal performance of the system under investigation.
2. Although the SolTherm method has proven to be valid for space and combi heating too, the procedure is currently limited to solar water heaters only.
3. The procedure is implemented with an evaluation period of one year, following the approval of this document by the Solar Keymark network. During the evaluation period:
 - the procedure can be applied by can be applied by Solar Keymark recognized test labs.
 - valid SolTherm software is the last available version available from the website of vAConsult ^[2].
 - the requirements on organizations allowed to perform the procedure will be further described (SCF project: 9C02.1 SK Scope vAC).
4. The procedure is limited to system designs currently described by the SolTherm software.

2. Data inputs describing the system

Component specifications:

- *Collector specifications:*
Extracted from the Solar Keymark datasheet.
- *Tank specifications:*
Extracted from the Solar Keymark datasheet.
Be aware: the tank height is the height of the inner water holding cylinder.
- *Pump specifications:*
Declared by the supplier with reference to the pump brand/type.
In case of a pump that is controlled in at least three steps or is continuously controlled, enter 50% of the nominal value.

¹ http://www.vaconsult.net/Software/SolTherm/SolTherm_UK.htm

² During the evaluation period the software will be transferred under management of the Solar Keymark network as is being developed in the 9C05 1-SK-SoftwareGroup_vAC SCF project.



- *Control specifications*
Declared by the supplier with reference to the pump brand/type.
Use the standby power consumption.

Backup water heater

According to EN 12976-2, annex B.

Only relevant for solar plus supplementary systems (Backup heater type to 'Tank heating').

System design

Settings for heat losses piping (length, diameter, insulation thickness), locations of solar loop and heat storage tank) and maximum tank temperature according to EN 12976-2, annex B.

Reference conditions

According to EN 12976-2, annex B

3. Reporting

The results are reported according to CEN EN 12976-2, annex A and optionally according to CEN EN 12976-2, annex G.

The results shall be reported stating the version number of the SolTherm software applied and with an additional page summarizing the supplier declared data.