

ANNEX A4. Parts list, drawings and specifications, Solar Keymark Systems

Normative annex.

Version of 2010-09-22.

Parts list

For each of the systems of a certification series parts list (bill of materials) must be made available to the inspector / test institute. The parts list shall include all parts of the systems, any changes done to the systems initially tested and the date of revision.

Engineering drawings

Each of the systems of a certification series must be accompanied by a set of engineering drawings of the collectors and storage tanks. They have to be fully dimensioned, including sectional views. Drawings shall have a number, date of issue and possible revision date. The drawings of the collectors have to fulfill the requirements of "SKN_N0120R0 Annex A".

Specifications

The components listed below must be described and specified using data sheets (alternatively the specification can be documented in the corresponding drawings or manuals) that contain at least the following information.

<p>System</p> <p><input type="checkbox"/> System layout (functional principle)</p>
<p>Collector</p> <p><input type="checkbox"/> all specifications according to "SKN_N0120R0 Annex A"</p>
<p>Heat transfer fluid</p> <p><input type="checkbox"/> Type of liquid</p> <p><input type="checkbox"/> Water mixing percent</p> <p><input type="checkbox"/> Density</p> <p><input type="checkbox"/> Heat capacity</p> <p><input type="checkbox"/> Freeze protection</p>
<p>Pipes/piping and pipe insulation</p> <p><input type="checkbox"/> Type of pipes and insulation</p> <p><input type="checkbox"/> Material of pipes and insulation</p> <p><input type="checkbox"/> Dimensions of pipes and insulation</p> <p><input type="checkbox"/> Heat conductivity of insulation</p>

Storage tank and tank insulation

- Type and tank orientation
- Tank material
- Tank dimensions
- Location of all tank connections
- Total tank volume
- Supplementary heated tank volume
- Tank height
- Inside coating
- Type of corrosion protection
- Heat loss coefficient of storage tank
- Insulation material
- Thickness of insulation
- Heat conductivity of insulation
- Heat loss coefficient of storage tank

Heat exchanger(s)

- Type (mantel, spiral, external)
- Material
- Dimensions
- Heat transfer coefficient (or at least heat exchanger surface)

Controller(s) and sensor(s)

- Type of controller(s)
- Dimensions
- Number and type of inputs and outputs
- Settings (control algorithm, overheating protection, flow-rate control,...)
- Specifications of power supply (operating voltage and frequency)
- Type of fuse(s)
- Power consumption (with/without activated display)
- Firmware version
- Type of sensor(s)
- Dimensions of sensor(s)
- Location(s) of sensor(s)
- Certifications

Pump(s)

- Type
- Drawings with dimensions
- Materials (housing, shaft, impeller, bearing,...)
- Pump characteristic curve(s) (flow rate/head/power input)
- Type of fluid(s)
- Temperature limits of fluid
- Pessure limits
- Settings (power level,...)
- Specifications of power supply (operating voltage and frequency)

<input type="checkbox"/> Power consumption (Min./Max. power consumption) <input type="checkbox"/> Certifications
<p>Supplementary heating</p> <input type="checkbox"/> Type <input type="checkbox"/> Dimensions <input type="checkbox"/> Settings <input type="checkbox"/> Temperature limits <input type="checkbox"/> Pressure limits <input type="checkbox"/> Specifications of power supply (operating voltage and frequency) <input type="checkbox"/> Power consumption (Min./Max. power consumption) <input type="checkbox"/> Certifications
<p>Hydraulics/safety equipment</p> <input type="checkbox"/> Parts list of all pipes, valves, safety equipment <input type="checkbox"/> Dimensions <input type="checkbox"/> Temperature limits of all parts <input type="checkbox"/> Pressure limits of all parts <input type="checkbox"/> Settings (if applicable) <input type="checkbox"/> Specifications of power supply (if applicable) <input type="checkbox"/> Power consumption (if applicable) <input type="checkbox"/> Certifications (if applicable)
<p>Mounting frame</p> <input type="checkbox"/> Type of Installation / angle of inclination <input type="checkbox"/> Dimensions <input type="checkbox"/> Basic schedule <input type="checkbox"/> Material of frame <input type="checkbox"/> surface treatment of frame <input type="checkbox"/> static calculation documented evidence of conformity according to EN1993-1-1 (steel) or to prEN1999-1-1 (aluminium)

Remarks:

- If several sizes of the same system are certified, all documents have to be submitted for all the individual systems.
- In case of special system designs the delivery of additional documents might be required.
- The documents are kept strictly confidential by the inspector / test institute. If possible we ask you to submit these drawings by email in pdf format and as hard copy by mail.
- The documents must be supplied to the inspector / test institute either in the language of the country that the inspector / test institute is located or in English.