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. The 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.

<table>
<thead>
<tr>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ System layout (functional principle)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Collector</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ all specifications according to &quot;SKN_N0120R0 Annex A&quot;</td>
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<table>
<thead>
<tr>
<th>Heat transfer fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Type of liquid</td>
</tr>
<tr>
<td>☐ Water mixing percent</td>
</tr>
<tr>
<td>☐ Density</td>
</tr>
<tr>
<td>☐ Heat capacity</td>
</tr>
<tr>
<td>☐ Freeze protection</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Pipes/piping and pipe insulation</th>
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</thead>
<tbody>
<tr>
<td>☐ Type of pipes and insulation</td>
</tr>
<tr>
<td>☐ Material of pipes and insulation</td>
</tr>
<tr>
<td>☐ Dimensions of pipes and insulation</td>
</tr>
<tr>
<td>☐ Heat conductivity of insulation</td>
</tr>
</tbody>
</table>
### 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
- Pressure limits
- Settings (power level,...)
- Specifications of power supply (operating voltage and frequency)
## Supplementary heating

- Type
- Dimensions
- Settings
- Temperature limits
- Pressure limits
- Specifications of power supply (operating voltage and frequency)
- Power consumption (Min./Max. power consumption)
- Certifications

## Hydraulics/safety equipment

- Parts list of all pipes, valves, safety equipment
- Dimensions
- Temperature limits of all parts
- Pressure limits of all parts
- Settings (if applicable)
- Specifications of power supply (if applicable)
- Power consumption (if applicable)
- Certifications (if applicable)

## Mounting frame

- Type of Installation / angle of inclination
- Dimensions
- Basic schedule
- Material of frame
- Surface treatment of frame
- 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.