

Pre-qualification form for solar water heater manufacturers

1. Organisational aspects

a) Organisation:

Official name:	
Contact person:	
Address:	
City:	
Country:	
Telephone:	
Telefax:	
E-mail:	
Legal status:	
Number of employees:	

This entry form is filled in completely and truthfully and is accompanied by all documents mentioned, that are numbered accordingly.

Name:

Function:

Signature:

City:

Date:.....

Country:

- b) **International certificates:** list here the international (quality management) certificates your company has: (ISO 9000, EN 29000):

- c) **References:** Give one bank reference and two professional references in Table 1.

- d) **Tenders:** Mark the countries where your company wants to tender for projects:

Belgium, Denmark, Germany, The Netherlands, United Kingdom.

- e) **Delivery of systems:** Mark the countries where the solar systems of your company have been installed:

Belgium, Denmark, Germany,
 The Netherlands, United Kingdom.

- f) **Delivery capacity:** Give an indication of your monthly and yearly delivery capacity:

per month:	
per year:	

Indicate how you can fulfil this capacity (describe your production process):
Annex no.

- g) **Manuals:** Mark the languages your company can deliver installation and commissioning manuals: Danish, Dutch, English, French, German. Include a copy of your installation manual (at least an English version): Annex no.

Mark the languages your company can deliver maintenance manuals: Danish, Dutch, English, French, German.

Include a copy of your maintenance manual (at least an English version): Annex no.

- h) **Guarantee:**

The minimal guarantees required given by the supplier on the system are: 5 years on the functioning of the collector, 2 years on the boiler vessel, 1 year on the functioning of the other components. The guarantee is limited to the replacement and/or free repair of the part for which the defect is the responsibility of the supplier (in particular a manufacturing defect, or delivery of a defective part). However, the first two years, the guarantee will also cover the installation costs induced by the necessary replacement of a part covered by a guarantee on manufacturing defects. Excluded from guarantee is the damage caused by the freezing of the collectors, unless this damage results from an indisputable manufacturing error.

The guarantee also does not cover broken collector glazing.

Any work undertaken without the intervention of an approved installer and/or any use of not approved parts, makes immediately fall the complete guarantee. No guarantee will be assumed for the defects caused by negligence of the user or of the buyer, such as the lack of maintenance, defects resulting from improper, abnormal use and use without understanding of the parts delivered by the supplier, or defects resulting from installation not conform the directives of the supplier. The terms of guarantee offered are clearly described to the customers.

Is the guarantee offered according to requirements above: Yes No

State the proposed period of guarantee:

Include details of guarantee in an annex, split into components (at least an English version): Annex no.

- i) **Technical support:** Mark the countries where your company can offer technical support: Belgium, Denmark, Germany, The Netherlands, United Kingdom.
- j) **Training:** Mark the countries where your company can offer training to local installers: Belgium, Denmark, Germany, The Netherlands, United Kingdom.
- k) **Delivery and payment conditions:** Add in an annex your standard delivery and payment conditions (include at least an English translation): Annex no.
- l) **Project references:** State in Table 9 the projects realised in the last five years, with a maximum of *[number of projects]* projects a year and at least *[number of systems]* systems in *[period]*. Please give details of installations on the largest number of properties. The systems must have the same set of components as the systems you apply for in this application form.

2. Products and technical aspects

- a) **Type of products:** Your company can deliver
- Solar collectors
 - Complete solar water heaters (including vessels and control units)
 - Auxiliary heaters
 - Other:
- b) **List of systems:** State in Table 4 all the solar water heaters you would like to offer for tendering within this project.
- c) **Other components:** If your company only delivers solar collectors, state in an annex a full parts list with necessary components and recommended manufacturers (include full address and telephone/fax numbers):
Annex no.
- d) **Accessories:** Give in an annex the accessories you can deliver: Annex no.
- e) **System description:** Give a short description of the systems or system design (with diagram and photographs) in an annex: Annex no.
- f) **Product information:** Add your product information: Annex no.
- g) **(H)CFK's:** There are no materials with (H)CFK's: Yes No
- h) **Safety:** Do your systems fulfil the general safety requirements in EU Directives 89/392/EU and 73/23/EU¹ Yes No
- i) **Suitability:** Mark the countries for which your products are suitable:
 Belgium, Denmark, Germany, The Netherlands, United Kingdom.
- j) **Check of functioning:** Explain how a user can easily check the correct functioning of the system: Annex no.
- k) **Maintenance:** Are there any parts where maintenance or replacement is required in order to maintain the systems working order over a period of 10 years: Yes No
If yes, state them in an annex: Annex no.
- l) **Apartments:** Is it possible to use your systems for multi-storey buildings (individual boilers, collectors may be collective or not): Yes No
If yes, give a technical description: Annex no.
State references in Table 6.
State in Table 4 the systems that you can offer for apartments.

¹ European Directives and European standards can be obtained through your national normalisation institute.

m) **Auxiliary heating:** Give the maximum output temperature of the water out of the solar water heater:°C.
Are there any special requirements on auxiliary heaters if they are used in combination with your solar water heaters: Yes No
If yes, state them in an annex: Annex no.

n) **Auxiliary heaters:** Is it possible for you to deliver solar water heaters as well as auxiliary heaters that can be used in combination with the offered solar water heaters: Yes No
If yes, state them in Table 5.

o) **Outdoor parts:** Are all outdoor parts UV resistant: Yes No

p) **Minimum temperature:**

Give the minimum allowed ambient temperature:	..... °C
Give the minimum allowed indoor temperature:	..... °C

q) **Freezing protection:** antifreeze fluid
 drain-back (drain into a storage vessel, reuse of fluid)
 drain-down (drain and run to waste, no reuse)
 other:

r) **Overheating protection principle:** does it depend on electricity supply: Yes No
If it depends on draining water, give a detailed construction in an annex: Annex no.

s) **Electrical devices:** Do your systems include electrical devices: Yes No

t) **Performance test reports:** State in Table 7 the test reports made by official institutes, and add copies of main results (also on all parts that will come in contact with drinking water): Annex no.

u) **Field tests:** State in Table 8 and an annex the results of monitoring of performance on the systems you offer, with full technical details of the systems monitored: Annex no.

v) **Test procedures:** If pre-selected for a project, are you prepared to go through test procedures in any of the following countries: Belgium, Denmark, Germany, The Netherlands, United Kingdom.

2.1 Collector

- a) **Collector type:** (Make a copy of this pages if you have more than one product)
- flat plate
 - evacuated tube
 - ICS
 - other:

- b) **Inclination:**

Minimum angle of inclination (to the horizontal)	..... deg
Maximum angle of inclination (to the horizontal)	..... deg

- c) **Materials used:**

Cover	
Casing	
Absorber	
Insulation	

- c) **Maximum pressure:** Bar (10^5 Pa)

- d) **Connection to piping:** State connection type:
and diameter (mm):

- e) **Glazing:**

- single glass
- other:
- glass sealant:

- f) **Absorber coating:**

- black paint
- selective (name, type):
- ($\alpha = \dots\dots$, $\varepsilon = \dots\dots$)
- Surface treatments:

- g) **Collector Performance Characteristics:**

η_0	.....
Loss coefficient	..... $W/m^2.K$
Gross Area	..... m^2
Aperture Area	..... m^2
Absorber Area	..... m^2

- Data based on: Collector mean temperature
 Collector inlet temperature

State test reports in Table 7. Include copies of the main results.

i) **Heat transfer fluid:**

- water
- water+antifreeze
- other:

If water+ antifreeze, give productname:

Add the data sheet as an annex: Annex no.

j) **Collector fluid circulation:**

- pump (pump rating =W)

Collector circuit control:

- Differential temperature controller, $\Delta T_{on} = \dots\dots\dots^\circ\text{C}$, $\Delta T_{off} = \dots\dots\dots^\circ\text{C}$
- Solar sensor (I_{in}): W/m^2
- other:.....

- thermosiphon

- other:

k) **Sloped roof mounting:** Add a technical description of the mounting method:

Annex no.

l) **Sloped roof integration:** Can your collector be roof integrated Yes No

Add a technical description of the mounting method: Annex no.

m) **Flat roof constructions:** Can you deliver a frame to install a collector on a flat roof: Yes No

If yes, add a description in an annex: Annex no.

n) **Collectorsizes:** State in Table 2 the possible collectorsizes you can deliver.o) **Casing colours:** What is the standard colour of your casing:

Can you deliver frames in other colours: Yes No

If yes, state the possible colours here:

2.2 Storage (Make a copy of this pages if you have more than one product)

a) **Tank:**

- Separate tank
- Integrated with auxiliary heating storage tank
- Integrated with collector

b) **Maximum pressure:** Bar (10^5 Pa)

c) **Heat exchanger:**

- None
 - External
 - Internal to preheating tank
- If internal, location in tank: Top
 Bottom
 All Around
- Type of heat exchanger: single wall
 double wall
 spiral
 mantle

Does the heat exchanger comply with EN TC 110 Yes No

d) **Materials used:**

Tank	
Heat exchanger	
Casing	
Insulation	
Thickness of insulation	..... mm
Heat transfer coefficient of insulation	..... W/m.K

a) **Surface area:** State the surface area of the solar heat exchanger: m².

b) **Connection to piping:** State connection type:
 and diameter (mm):

c) **Storage sizes:** State in Table 3 the sizes and weights of the storages you would like to offer within this project.

d) **Expansion vessel:** Do your systems have an expansion vessel: Yes No
 If yes, do they meet with the requirements in EU directive 87/404/EWG: Yes No

REFERENCES

Table 1: Bank reference:

Company name:	
Contactperson:	
Address:	
Postal code	
City:	
Country	
Telephone:	
Telefax:	
Email	

Professional reference 1:

Company name:	
Contactperson:	
Address:	
Postal code	
City:	
Telephone:	
Telefax:	
Email	

Professional reference 2:

Company name:	
Contactperson:	
Address:	
Postal code	
City:	
Telephone:	
Telefax:	
Email	

TABLES

Table 2: List of collector sizes

Collector name/type (type = flat plate, evacuated tube, ICS, other)	Outer dimensions of collector				Area (m ²)			Weight (kg)		Distance above roof when mounted (mm)
	length (mm)	width (mm)	thickness (mm)	Gross	Aperture	Absorber	empty	filled		

Table 3: List of storage sizes and weights

Storage name/type	Outer dimensions of storage			Weight (kg)		Volume (litres)	Heat loss coefficient (W/K)
	diameter (mm)	width (mm)	height (mm)	empty	filled		

Table 5: Possible auxiliary heaters.

Manufacturer of auxiliary heater	Type	Power (kW)	Certificates

Table 6: List of systems realised in multiple storey apartment buildings (individual boilers, collectors may be collective or not)

Year of realisation	Name of project	City, Country	Type of solar water heater	Number of systems	Reference		
					Organisation	Contact person	Telephone number

Table 7: List of official testreports.

Organisation and authors	Title	Date	Copy enclosed in annex no.

Table 8: List of monitoring of performance in practice.

Organisation and authors	Title	Date	Copy enclosed in annex no.

Table 9: List of projects realised (with reference)

Year	Name of project	City	Country ²	Principal reference (give full address in Table 10)	Number of homes	Number of systems	Type of system
1997							
1997							
1997							
1997							
1997							
1997							
1997							
1997							
1997							
1997							
1996							
1996							
1996							
1996							
1996							
1996							
1996							
1996							

² Use country code: B (Belgium), DK (Denmark), G (Germany), NL (the Netherlands), UK (United Kingdom), etc.

Table 9, continuing: List of projects realised (with reference)

Year	Name of project	City	Country	Principal reference (give full address in Table 10)	Number of homes	Number of systems	Type of system
1996							
1996							
1996							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1995							
1994							
1994							
1994							
1994							



Name of project	Principal reference						
	Organisation	Contactperson	Address	Postal code	City + country code	Telephone	Telefax

Make a copy of this page if you have more references than will fit on this page.