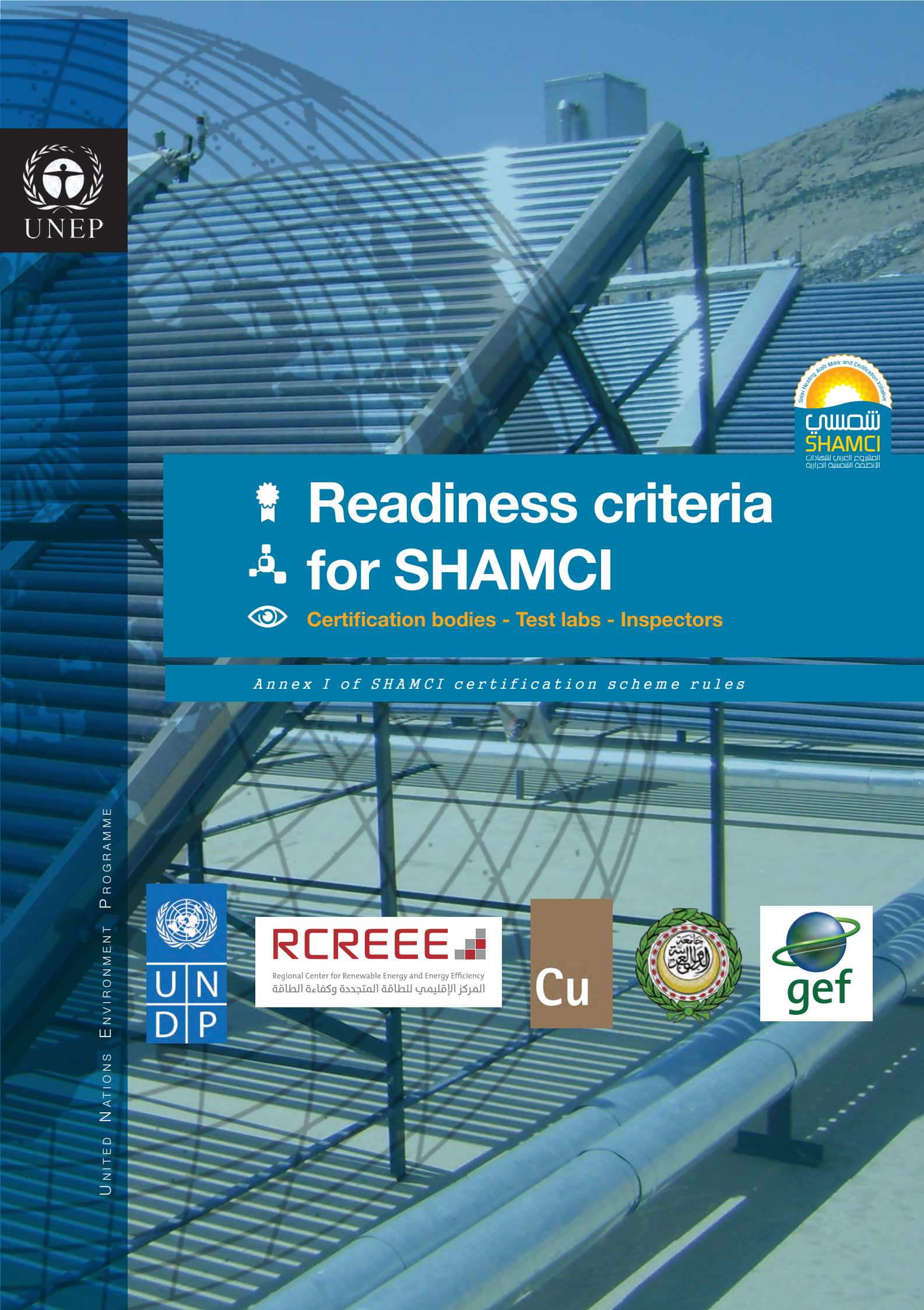

UNEP

UNITED NATIONS ENVIRONMENT PROGRAMME

Readiness criteria for SHAMCI

Certification bodies - Test labs - Inspectors

Annex I of SHAMCI certification scheme rules

UNDP

RCREEE
Regional Center for Renewable Energy and Energy Efficiency
المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة

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Readiness criteria for SHAMCI

Certification bodies - Test labs - Inspectors

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Content

Part 1 | Readiness criteria for SHAMCI Certification bodies

List of abbreviations

IEC: International Electrotechnical Commission

ISO: International Organization for Standardization

SHAMCI: Solar Heating Arab Mark and Certification Initiative

IAF: International Accreditation Form

1 Requirements for quality management system and staff qualifications at certification bodies:

Requirements from 2021

From 1st of January 2021 requirements for the quality management system and staff will be according to: ISO/IEC 17065 [1]. Accreditation by accreditation body member of IAF will be necessary.

Interim requirements for quality management system – until 1st of January 2017

The certification body shall declare by signature that requirements and procedures from ISO/IEC 17065 [1] will be fulfilled and followed **– but accreditation is not required**.

The main requirements/procedures in ISO/IEC 17065 [1] are given in section 3 below.

2 Personnel

In the interim period until 1st of January 2012, it is a requirement that the person in charge of certification (signature on certificate/license) shall document at **least 5 years of experience** with accredited product certification.

The documentation of experience is done by filling in table 1.

Period	Certification Body	Function	Products
yyyy-mm-dd to yyyy-mm-dd	Name of certification body	Name and description of function	Product 1, Product 2, ..

Table 1. Documentation of experience with certification for the person in charge of certification

The person in charge is responsible for the competence of other staff involved in the certification process.

3 Certification process

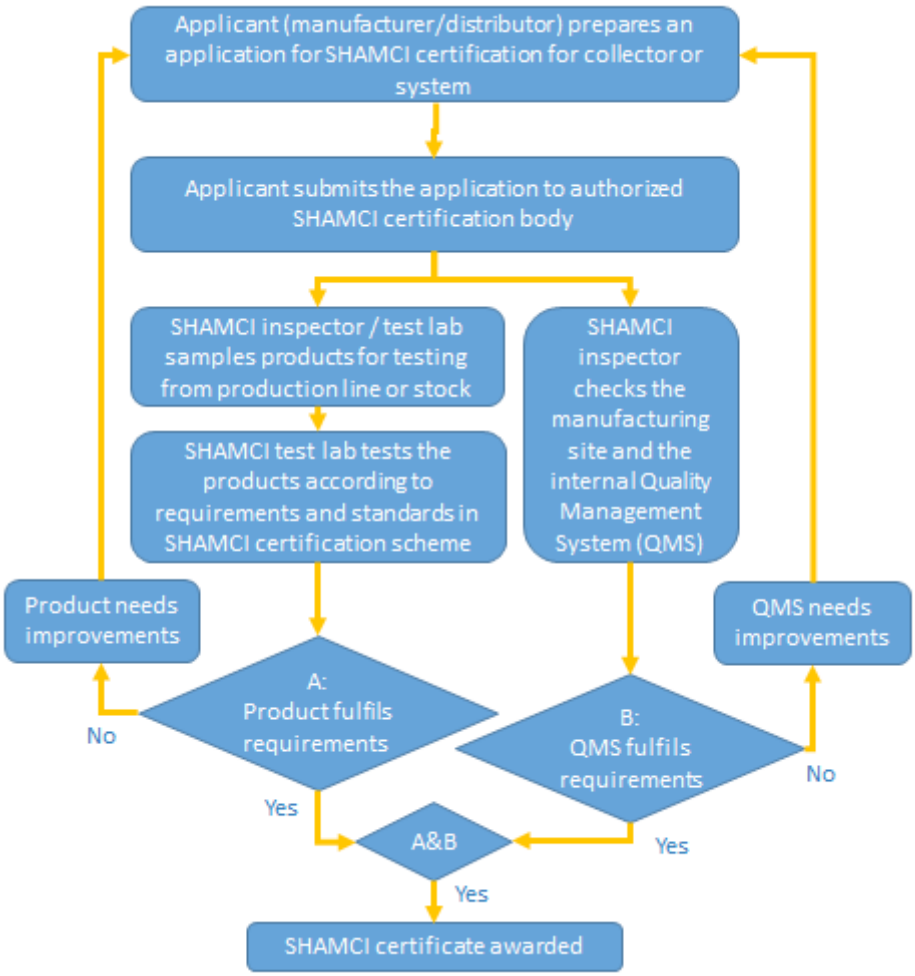
According to ISO/IEC 17065 [1] the certification process involves the following steps:

- Application
- Application review
- Evaluation
- Review
- Certification decision
- Certification documentation
- Directory of certified products
- Surveillance
- Changes affecting certification
- Termination, reduction, suspension or withdrawal of certification
- Records
- Complaints and appeals

A full description is given in ISO/IEC 17065 [1] – below is given the main requirements.

3.1 Application

Below is a flow chart representing the process for applying for SHAMCI certification.



To start the certification process the following information should be available for the certification body:

- the product(s) to be certified
- the standards and/or other normative documents for which the client is seeking certification
- the general features of the client, including its name and the address(es) of its physical location(s), and any relevant legal obligations
- general information concerning the client, relevant to the field of certification for which the application is made, such as the client's activities, its human and technical resources, including laboratories and/or inspection facilities, and its functions and relationship in a larger corporation, if any;
- information concerning all outsourced processes used by the client that will affect conformity to requirements; if the client has identified a legal entity/entities for producing the certified product(s) that is different from the client, then the certification body can establish appropriate contractual controls over the legal entity/entities concerned, if necessary for effective surveillance; if such contractual controls are needed, they can be established prior to providing formal certification documentation
- all other information needed in accordance with the relevant certification requirements, such as information for initial evaluation and surveillance activities, e.g. the locations where the certified product(s) are produced and contact personnel at these locations.

Such information should be asked for in an application form. Examples of application forms used for Solar Keymark) can be seen in Annex 1.

3.1.1 Certification agreement

At the same time the certification body and the client could sign the certification agreement. The detailed requirements for this agreement is given in ISO/IEC 17065 [1] section 4.1.2:

4.1.2 Certification agreement

4.1.2.1 The certification body shall have a legally enforceable agreement for the provision of certification activities to its clients. Certification agreements shall take into account the responsibilities of the certification body and its clients.

4.1.2.2 The certification body shall ensure its certification agreement requires that the client comply at least, with the following:

a) *the client always fulfills the certification requirements (see 3.7), including implementing appropriate changes when they are communicated by the certification body (see 7.10);*

b) *if the certification applies to ongoing production, the certified product continues to fulfill the product requirements (see 3.8);*

c) *the client makes all necessary arrangements for*

   1) *the conduct of the evaluation (see 3.3) and surveillance (if required), including provision for examining documentation and records, and access to the relevant equipment, location(s), area(s), personnel, and client's subcontractors;*

   2) *investigation of complaints;*

   3) *the participation of observers, if applicable;*

d) *the client makes claims regarding certification consistent with the scope of certification (see 3.10);*

e) *the client does not use its product certification in such a manner as to bring the certification body into disrepute and does not make any statement regarding its product certification that the certification body may consider misleading or unauthorized;*

f) *upon suspension, withdrawal, or termination of certification, the client discontinues its use of all advertising matter that contains*

any reference thereto and takes action as required by the certification scheme (e.g. the return of certification documents) and takes any other required measure;

g) *if the client provides copies of the certification documents to others, the documents shall be reproduced in their entirety or as specified in the certification scheme;*

h) *in making reference to its product certification in communication media such as documents, brochures or advertising, the client complies with the requirements of the certification body or as specified by the certification scheme;*

i) *the client complies with any requirements that may be prescribed in the certification scheme relating to the use of marks of conformity, and on information related to the product;*

NOTE See also ISO/IEC 17030, ISO/IEC Guide 23 and ISO Guide 27.

j) *the client keeps a record of all complaints made known to it relating to compliance with certification requirements and makes these records available to the certification body when requested, and*

1) takes appropriate action with respect to such complaints and any deficiencies found in products that affect compliance with the requirements for certification;

2) documents the actions taken;

NOTE Verification of item j) by the certification body can be specified in the certification scheme.

k) *the client informs the certification body, without delay, of changes that may affect its ability to conform with the certification requirements.*

NOTE Examples of changes can include the following:

- *the legal, commercial, organizational status or ownership,*
- *organization and management (e.g. key managerial, decision-making or technical staff),*
- *modifications to the product or the production method,*
- *contact address and production sites,*
- *major changes to the quality management system.*

3.2 Application review

The certification body shall do a review of the application to ensure that:

a) the information about the client and the product is sufficient for the conduct of the certification process;

b) any known difference in understanding between the certification body and the client is resolved, including

c) agreement regarding standards or other normative documents;

d) the scope of certification (see 3.10) sought is defined;

e) the means are available to perform all evaluation activities;

f) the certification body has the competence and capability to perform the certification activity.

3.3 Evaluation

The evaluation consists of the initial type testing (done by recognized test lab) and the initial inspection of the factory production control (done by internal inspector or external recognized inspection body).

3.4 Review

At least one person (not involved in the evaluation) shall review all information and results related to the evaluation.

3.5 Certification decision

At least one person to make the certification decision based on all information related to the evaluation, its review, and any other relevant information. The certification decision shall be carried out by person(s) that has not been involved in the process for evaluation.

3.6 Certification documentation

The certification body shall provide the client with formal certification documentation that clearly conveys, or permits identification of the following:

- the name and address of the certification body;
- the date certification is granted (the date shall not precede the date on which the certification decision was completed);
- the name and address of the client;
- the scope of certification;
- the term or expiry date of certification;
- data sheet for solar collector or solar water heater (according to SHAMCI annex C1 or C2.

3.7 Directory of certified products

The certification body shall inform SHAMCI Network on new certificates and provide data sheet to the SHAMCI Network product database available from www.shamci.net.

3.8 Surveillance

The certification body shall initiate surveillance activities (annual inspection of factory production control and bi-annual physical inspection) in due time.

3.9 Other processes

Please look up in ISO/IEC 17065 [1] section 7.10-13 to have information on the last four processes described:

- Changes affecting certification
- Termination, reduction, suspension or withdrawal of certification
- Records
- Complaints and appeals

4 Report format for certification reports

Results from type testing shall be given in the format specified in the SHAMCI annexes C1 (Collector datasheet) and C2 Solar Water Heater datasheet).

5 Other relevent requested issues (e.g. authorization of the entity)

Until 1st January 2021 the SHAMCI Network, based on the signed declaration from the certification body (see section 1.2), finally authorizes the certification body for SHAMCI certification.

After 1st January 2021 the SHAMCI Network, based on the accreditation certificate (see section 1.1), finally authorizes the certification body for SHAMCI certification. The accreditation certificate shall be published at the SHAMCI website.

6 References

1. ISO/IEC 17065:2012. Conformity assessment -- Requirements for bodies certifying products, processes and services

7 Annex 1.1 CERTIF Solar Keymark Application Form and Evaluation Questionnaire

IM.25, Ed. 5 / Dez. 2009

A preencher pela CERTIF:
To be fulfilled by CERTIF:

Processo(s) nº(s):

FORMULÁRIO PARA O PEDIDO DE CERTIFICAÇÃO DE PRODUTOS

APPLICATION FORM FOR PRODUCT CERTIFICATION REQUEST

Nota: Antes de preencher este formulário leia com atenção as instruções para o seu preenchimento, na página 7.
Note: Before completing this form read carefully the instructions for its completion, on page 7.

1. REQUERENTE DA CERTIFICAÇÃO

CERTIFICATION APPLICANT

1.1. REQUERENTE

APPLICANT

Identificação:
Company name:

Morada:
Address:

Responsável pela assinatura do contrato:
Responsible for contract signature:

Pessoa de contacto:
Contact person:

Contribuinte nº
Vat no.

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

ou/or

1.2. REPRESENTANTE (SE EXISTIR)

REPRESENTATIVE (IF ANY)

Identificação:
Company name:

Morada:
Address:

Pessoa de contacto:
Contact person:

Contribuinte nº
Vat no.

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

2. TITULAR DA LICENÇA/DO CERTIFICADO (SE DIFERENTE DO REQUERENTE)

LICENSEE/LICENCE HOLDER/CERTIFICATE HOLDER (IF OTHER THAN APPLICANT)

Identificação:
Company name:

Morada:
Address:

Responsável pela assinatura do contrato:
Responsible for contract signature:

Contribuinte nº
Vat no.

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

3. RESPONSÁVEL PELOS PAGAMENTOS (SE DIFERENTE DO REQUERENTE)

RESPONSIBLE BY PAYMENTS (IF OTHER THAN THE APPLICANT)

Identificação:
Company name:

Morada:
Address:

Contribuinte nº
Vat no.

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

4. FABRICANTE (SE DIFERENTE DO REQUERENTE)

MANUFACTURER (IF OTHER THAN THE APPLICANT)

Identificação:
Company name:

Morada:
Address:

Pessoa de contacto:
Contact person:

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

4.1. OUTRAS LOCALIZAÇÕES DE FABRICO (SE EXISTIREM)

OTHER MANUFACTURING PREMISES (IF ANY)

Identificação:
Company name:

Morada:
Address:

Pessoa de contacto:
Contact person:

Telefone:
Telephone:

Faxe:
Fax:

e-mail:

Nota: Se necessário utilize a página suplementar, por ex. no caso do(s) produto(s) ser(em) fabricado(s) em mais do que um local
Note: Use supplementary page if necessary, for e.g. in the case of product(s) is(are) being manufactured in more than one place

5. ÂMBITO DA CERTIFICAÇÃO REQUERIDA (ASSINALE COM ☒)

SCOPE OF REQUESTED CERTIFICATION (MARK WITH ☒)

Certificados de conformidade *Conformity Certificates*		**Marcas de conformidade (Sistema nº 5) [4]** *Conformity Marks (System no. 5) [2]*	
Sistema nº 1 [1] *System no. 1*	☐		☐
Sistema nº 3 [2] *System no. 3*	☐		☐
Sistema nº 4 [3] *System no. 4*	☐		

[1] *Sistema nº 1 – ensaios de tipo em amostra do produto.*
System no. 1 – type-tests on samples of the product.

[2] *Sistema nº 3 – ensaios de tipo em amostras do produto e inspecção inicial ao processo de produção, seguido de posterior acompanhamento através de ensaios de amostras colhidas na fábrica e inspecção do processo de produção.*
System no. 3 – type-tests on samples of the product and initial inspection of the production process, followed by continuous surveillance that includes tests on samples selected on factory and inspection of the production process.

[3] *Sistema nº 4 – ensaios de tipo em amostras do produto e inspecção inicial ao processo de produção, seguido de posterior acompanhamento através de ensaios de amostras colhidas no comércio e / ou na fábrica e inspecção do processo de produção.*
System no. 4 – type-tests on samples of the product and initial inspection of the production process, followed by continuous surveillance that includes tests on samples selected on the market and / or at the factory and inspection of the production process.

[4] *Sistema nº 5 – ensaios de tipo em amostras do produto e avaliação do sistema da qualidade da fábrica, seguido de acompanhamento que inclui ensaios de amostras colhidas no comércio e / ou na fábrica e auditorias ao sistema da qualidade.*
System no. 5 – type-tests on samples of the product and assessment of the quality system involved, followed by continuous surveillance that includes tests on samples selected on the market and / or at the factory as well as assessment of the quality.

6. PRODUTO(S)

PRODUCT(S)

Designação do produto:
Product designation:

Modelo/referência(s)/código(s):
Model/reference(s)/type code(s):

Características principais:
Main characteristics:

Marca(s) comercial(ais):
Trademark(s):

Norma de certificação:
Certification standard:

Nota: Se necessário utilize a página suplementar / Note: Use supplementary page if necessary

7. ENSAIOS

TESTS

7.1. DESTINO A DAR AO(S) PRODUTO(S) APÓS O(S) ENSAIO(S) (ASSINALE COM ☒)

HANDLING OF TEST SPECIMEN(S) AFTER TESTING (MARK WITH ☒)

"Todas as amostras serão recolhidas, nas instalações do laboratório de ensaios, no prazo de **30 dias**, após a recepção dos relatórios de ensaios, pelo:
"All samples will be collected, on the laboratory premises, within 30 days, after reception of test reports, by:

☐ Requerente
Requiring

☐ Representante
Representative

☐ Fabricante "
Manufacturer"

Findo esse prazo o laboratório tomará as medidas adequadas, podendo haver lugar a uma facturação se a destruição as amostras implicar a tomada de medidas de protecção do meio ambiental.
After that the laboratory take all necessary measures, and an invoice may be made if samples destruction implies cares to protect the environment.

8. DECLARAÇÃO E ASSINATURA DO REQUERENTE

DECLARATION AND SIGNATURE OF THE APPLICANT

"Declaramos que somos o (ou que estamos formalmente mandatados para actuar em nome do [1]) proprietário legal do(s) produto(s) abrangidos por este pedido de certificação e que temos completo conhecimento da(s) norma(s) aplicável(eis) ao(s) produto(s) e dos procedimentos gerais CERTIF aplicáveis à certificação, e que aceitamos cumprir.

Declaramos igualmente que os produtos para os quais é requerida a certificação, e enviados para o laboratório de ensaios, correspondem aos produtos fabricados em série e que não resultam de nenhum processo de fabrico especial."

"We declare that we are (or that we are formally mandated to act in behalf of [1]) legal owner of the product(s) covered by this certification request and that we have total knowledge of the standards applicable to product(s) and CERTIF's general procedures applicable to certification, which we commit to comply. We also declare that the products for which certification is required and that have been sent to test laboratory, are result of mass production and do not result from any special production""

[1] Assinale com ☒ no caso de ter preenchido a secção 1.2 deste formulário e ser o representante legal do requerente.
[1] Mark with ☒ in case of had fulfilled section 1.2 of this form and being legal representative of the applicant.

☐ Junto se anexa a devida autorização legal do requerente para tratar de todos os aspectos relacionados com a certificação do produto.
We send enclosed the applicant legal authorization for dealing with all matters related to product certification.

Nome:
Name:

Função:
Function:

Assinatura:
Signature:

Data:
Date:

9. DOCUMENTAÇÃO EM ANEXO E EM DUPLICADO. (ASSINALE COM ☒ A DOCUMENTAÇÃO ENVIADA)

DOCUMENTATION ENCLOSED AND IN DUPLICATE. (MARK WITH ☒ THE DOCUMENTATION SENT)

9.1. DOCUMENTAÇÃO RELATIVA AO SISTEMA DA QUALIDADE

DOCUMENTATION CONCERNING QUALITY SYSTEM

☐ Questionário IM.04 – Questionário de avaliação
Questionnaire IM.04 – Evaluation Questionnaire

☐ Organograma da empresa e organograma da função qualidade
Company flowchart and quality function flowchart

☐ Fluxograma das principais fases de fabrico, com indicação dos pontos onde são efectuadas acções de controlo, documentos aí utilizados e identificação dos responsáveis
Flowchart of main production phases, with indication of where control action are performed, documents used and responsible identification

☐ Lista do equipamento utilizado para inspecção, medição e ensaio, suas características e fases em que é utilizado
List of equipment used for inspection, measurement and test, their characteristics and phases where it is used

☐ Lista de procedimentos relativos aos requisitos definidos no documento DO.03 – Requisitos do Sistema de Qualidade do Fabricante
List of procedures concerning requirements defined on DO.03 – Requirements of Manufacturer's Quality System

☐ Outra:
Other:

9.2. DOCUMENTAÇÃO RELATIVA AO PRODUTO

DOCUMENTATION CONCERNING PRODUCT

☐ Memória descritiva do(s) produto(s), incluindo, quando aplicável:
Descriptive memory of product(s), including, when applicable:

- ☐ Características / Especificações técnicas
  Characteristics / Technical specifications
- ☐ Características construtivas e materiais aplicáveis
  Constructive characteristics and used materials
- ☐ Planos, esquemas e cortes à escala, mostrando a construção do produto e as suas partes essenciais para o seu funcionamento
  Plans, schemes and cuts up to scale, showing equipment construction and essential parts for its functioning
- ☐ Fotografias e/ou catálogo dos produtos
  Photography and/or product catalogues
- ☐ Livro de instruções em português
  Instruction book in Portuguese
- ☐ Lista de componentes e/ou matéria-prima por cada referência, preenchendo o Quadro I, e respectivos certificados de conformidade dos componentes e/ou matéria-prima
  List of components and/or raw material for each reference, fulfilling Table I and respective components and/or raw material certificates of conformity
- ☐ Outros:
  Others:

☐ Volume de produção (em Un/Ton/Km/l), por cada referência, prevista para o ano em curso (**apenas para pedidos de certificação no âmbito dos Sistemas 3 e 4**)
*Production volume (in Un/Ton/Km/l), for each reference, foreseen for the current year (**only to certification requests in the scope of System 3 and 4**)*

☐ Documento comprovativo do registo, nacional ou internacional, da(s) marca(s) comercial(ais) e/ou autorização de uso por parte de terceiros
Document proofing national or international registration of commercial marks, authorization for use of other commercial mark(s)

☐ Outra:
Other:

QUADRO I - LISTA DE COMPONENTES E/OU MATÉRIAS PRIMAS

TABLE I – LIST OF COMPONENTS AND/OR RAW MATERIALS

Produto:
Product:

Modelo/Refª/Códigos:
Model/Ref./Codes:

Componente / Matéria prima *Component / Raw material*	**Refª** *Ref.*	**Características** *Characteristics*	**Fabricante** *Manufacturer*	**Nº certificado** *Certificate no.*	**Marca de conformidade** *Conformity mark*	**Norma** *Standard*

PÁGINA SUPLEMENTAR

SUPPLEMENTARY PAGE

INSTRUÇÕES DE PREENCHIMENTO

INSTRUCTIONS

Nota: Este formulário deve ser usado apenas pelos novos clientes da CERTIF (primeiro pedido de certificação)

Note: This form shall be used only by CERTIF's new clients (first certification request)

1. requerente da certificação	*Certification applicant*
1.1. requerente	*applicant*
Identificar a entidade que requer a certificação e em nome da qual irá ser emitida a licença ou certificado (normalmente o proprietário legal do(s) produto(s)). Identificar a pessoa designada para assinar o contrato relativo à certificação (nome completo). Identificar a pessoa de contacto (pode ser alguém exterior a esta entidade, desde que mandatada para tal).	*Identify the certification applicant and in the name of which the licence or certificate must be issued (usually the legal owner of product(s)). Identify the person named to sign certification contract (complete name). Identify the contact person (may be someone external to this entity, but he must be mandated to that).*
1.2. representante	*representative*
A ser preenchido no caso do titular da licença ou certificado designar outra entidade para requerer a certificação. Neste caso, preencher, obrigatoriamente, a secção 2 deste formulário.	*To be fulfilled if the licensee or certificate named other entity to apply for the certification. In this case section 2 of this application form must always be fulfilled.*
2. titular da licença	*Licensee/license holder*
No caso da certificação ser requerida por um representante, identificar a entidade em nome da qual irá ser emitida a licença ou certificado (normalmente o proprietário legal do(s) produto(s)), bem como a pessoa designada para assinar o contrato relativo à certificação (nome completo).	*If the certification is required by a representative, identify the certification applicant, in the name of which the licence or certificate will be issued (usually the legal owner of product(s)), as well as the person named to sign certification contract (complete name).*
3. Responsável pelos pagamentos	*Responsible by payments*
Identificar a entidade responsável por efectuar os pagamentos relativos à certificação. Inclui, pelo menos, a instrução do processo, auditorias, recolha de amostras, ensaios, gestão e uso das Marcas. No caso de existirem entidades diferentes responsáveis pelo pagamento de algumas destas acções, devem ser identificadas na página suplementar.	*Identify the entity responsible for certification payments. It includes, at least, process instruction, inspections, sample collecting, tests and management and use of Marks. In the case of different entities responsible for payment of some of those actions, they must be identified on the supplementary page.*
4. fabricante	*Manufacturer*
Identificar a entidade responsável pelo fabrico do(s) produto(s). Pode ser diferente do titular da licença e ser, neste caso, o proprietário legal do(s) produto(s).	*Identify the entity responsible by product(s) manufacture. It may be different from the licensee and, in this case, be the legal owner of product(s).*
4.1. outras localizações de fabrico	*other manufacturing premises*
Deve ser preenchido no caso do(s) produto(s) ser(em) fabricado(s) por mais do que um fabricante ou em locais diferentes da sede do fabricante.	*It must be fulfilled if product(s) is(are) manufactured by more than one manufacturer or in places different from manufacturer siege.*
5. âmbito da certificação requerida	*scope of the requested certification*
Assinalar, em apenas uma opção, o âmbito da certificação requerida.	*Mark, in just one option, the scope of the requested certification.*
6. produto(s)	*Product(s)*
Identificação do(s) produto(s) através da sua designação; dos modelos, referências ou códigos; descrição das suas características principais; marcas comerciais e a norma de certificação aplicável.	*Product(s)' identification through its designation, its models, references or codes; main characteristics description; trade marks and applicable certification standard.*
7. ensaios	*Tests*
7.1. destino a dar ao(s) produto(s) após o(s) ensaio(s)	*handling of test specimen(s) after testing*
Identificar a entidade responsável pela recolha das amostras ensaiadas.	*Identify the responsible entity for handling tested samples.*
8. declaração e assinatura do requerente	*declaration and signature of the applicant*
Identificar o requerente (nome completo e legivel), bem como a sua função na empresa.	*Identify the applicant (complete and legible name), as well as it function in the company.*
9. documentação em anexo e em duplicado	*Documentation enclosed and in duplicate*
9.1. documentação relativa ao sistema da qualidade	*documentation concerning quality system*
A ser preenchido **apenas** por requerentes que solicitam a certificação no âmbito da Marca Produto Certificado ou Sistema nº 5.	*To be fulfilled **only** by applicants that request certification on the scope of Certified Product Mark or System 5.*
9.2. documentação relativa ao produto	*documentation concerning product*
Assinalar as opções referentes ao produto a certificar.	*Sign the options concerning the product to be certified.*

QUESTIONÁRIO DE AVALIAÇÃO
EVALUATION QUESTIONNAIRE

PARTE A:

A ser preenchido pelo titular da licença / to be completed by the licence holder

1. Identificação e morada do titular da licença / certificado

Registered name and address of licence/certificate holder

Identificação: Registered name:		Contribuinte nº Vat nº	
Morada: Address:			
Pessoa de contacto: Contact person:			
Telefone: Telephone:		Fax:	e-mail:

2. Identificação do(s) produto(s) para o(s) qual(ais) foi solicitada a marca de conformidade / avaliação da conformidade (se necessário utilize a página suplementar)

Products identification for which the conformity mark / attestation of conformity was requested (if necessary use the supplementary page)

Identificação do(s) produto(s): Product(s) identification:	
Modelo/referência(s)/código(s): Model/type code(s):	
Características técnicas: Technical characteristics:	
Marca(s) comercial(ais): Trademark(s):	

3. Normas e/ou especificações técnicas segundo as quais pretende certificar o(s) produto(s)

Standards and/or technical specifications according to which you intend to certify the products

Norma / especificação técnica de certificação:
Certification standard / technical specification:

4. Sistema da qualidade do fabricante / controlo da produção na fábrica

Manufacturer's quality system / factory production control

(Qualquer resposta "não" deve ser justificada / any "no" answer must be justified)

	Sim Yes	Não No
4.1. O titular da licença/certificado é o responsável pela concepção do produto? Are you the owner of the product design	☐	☐
4.2. O titular da licença/certificado mantém um controlo completo sobre as alterações construtivas ao produto? Are you keeping control of design modifications?	☐	☐
4.3. O titular da licença / certificado é o responsável pelo sistema da qualidade do fabricante / controlo da produção na fábrica? Do you control the manufacturer's quality system / factory production control?	☐	☐
4.4. O titular da licença estabeleceu um contrato escrito com o fabricante relativamente às questões 4.1, 4.2 e 4.3? Does your contract with the manufacturer site cover questions 4.1, 4.2 and 4.3?	☐	☐

Descreva por favor, em página suplementar, como o contrato contempla estas questões, ou envie uma cópia
Please describe, on supplementary page, briefly how the contract covers these questions, or attach a copy

O representante da direcção do titular:
The licence holder's management representative:

Nome:
Name: _____

Função:
Function: _____

Assinatura:
Signature: _____

Local:
Place: _____

Data:
Date: _____

Em nome do titular da licença / certificado, o signatário deste questionário de avaliação declara que toda a informação fornecida é verdadeira.

On behalf of the licence/certificate holder, the signatory to this form declares the accuracy of the information provided.

PARTE B:

A ser preenchido pelo fabricante / to be completed by the manufacturer

5. Identificação e morada do fabricante

Manufacturer registered name and factory location

Identificação: Registered name:	Contribuinte nº Vat nº
Morada: Address:	
Pessoa de contacto: Contact person:	
Telefone: Telephone: ____ Fax: ____ e-mail: ____	

Por favor, forneça indicações para chegar à fábrica na página suplementar (estação ferroviária mais próxima, aeroporto). Anexe cópia do mapa local (se possível).
Please give directions for reaching the factory on the supplementary page (nearest railway station, airport). Attach copy of local map (if possible).

6. Morada da sede do fabricante (se diferente da fábrica)

Manufacturer's office address (if different form the factory)

Identificação: Registered name:	Contribuinte nº Vat nº
Morada: Address:	
Pessoa de contacto: Contact person:	
Telefone: Telephone: ____ Fax: ____ e-mail: ____	

Nota: Se necessário utilize folhas adicionais / Use additional sheet if necessary

7. Nome e funções dos principais responsáveis pela certificação do produto na fábrica, incluindo o responsável pelo sistema da qualidade

Name and functions of the main responsible for product certification in the factory, including the responsible for the quality system

Pessoa a contactar na fábrica: Contact person in the factory:	Função: Function:
Substituto da pessoa a contactar na fábrica: Deputy contact person in factory:	Função: Function:
Representante da direcção: Management representative:	Função: Function:

Nota: *este representante da direcção pode estar localizado fora da fábrica, por exemplo, na sede / This management representative may be located outside the factory, for i.e. on the head-office.*

8. Número aproximado de empregados na fábrica

Approximate total number of employees in the factory

9. Previsão do volume de exportação para o mercado português por cada categoria de produto que pretende certificar (só para fabricantes não nacionais no âmbito da certificação obrigatória)

Forecast of exportation volume for the portuguese market for each product category that intends to certify (only for non national manufacturers in the scope of the regulatory certification)

10. Especifique quais os componentes e/ou matérias-primas adquiridos a fornecedores externos

Specify which components and/or raw materials are purchased from outside suppliers

11. Descreva em detalhe ou faça referência à documentação (podem ser anexadas cópias dos procedimentos), relativamente à realização das seguintes acções, por forma a assegurar a conformidade do produto final com as normas aplicáveis (se necessário utilize a página suplementar)

Describe in detail and make reference to documentation (copies may be attached) concerning the performance of the following actions, in order to ensure conformity of the end product with the applicable standards (use supplementary sheet if necessary)

Inspecção de recepção:
Receiving inspection:

Controlo da produção e ensaios de rotina:
In-process control and routine tests:

Ensaios de verificação do produto:
Product verification tests:

Produto não-conforme:
Non-conforming products:

Acções correctivas e preventivas, incluindo o tratamento de reclamações:
Preventive and corrective actions, including customer complaints:

12. Para os produtos para os quais o fabricante pretende obter a Marca de Conformidade já foram concedidas outras marcas de conformidade por outros Organismos de Certificação? Em caso afirmativo, quais as marcas e os Organismos que as concederam?

Have been already granted other conformity marks by other certification body to the products for which the manufacturer intends to request the certified product mark? If yes, what are the marks and which certification bodies granted them?

13. O fabricante possui um Sistema da Qualidade avaliado e certificado de acordo com a norma ISO 9001: 2000? Em caso afirmativo, por que Organismo de Certificação e qual a norma?

Has the manufacturer's quality system been assessed and certificated in accordance to the ISO 9001: 2000? If yes, by what certification body and which standard?

14. O fabricante possui um Sistema HACCP (Hazard Analysis and Critical Control Points) implementado, de acordo com a DS 3027 E: 1997 e o Codex Alimentarius vol.1b, de 1997? Em caso negativo, está em fase de implementação? (só aplicável em empresas do sector alimentar)

Does the manufacturer have an implemented HACCP system (hazard analysis and critical control points) according with DS 3027 E: 1997 and Codex Alimentarius vol. 1b, by 1997? If no, is it in implementation phase? (Applicable only for alimentary sector companies)

A empresa, após ser consultada pela CERTIF, aceita e autoriza a equipa auditora nomeada a visitar todos os locais do processo de produção relevantes para assegurarem os requisitos essenciais de conformidade do produto acabado com as normas aplicáveis, durante o horário normal de trabalho.

We agree, after being consulted by CERTIF, that the inspection team named, may enter all relevant locations of manufacturing process which are essential for conformity requirements of the complete product with the relevant standards, during normal working hours.

O representante da direcção do fabricante:
The manufacturer's management representative:

Nome:
Name: _____

Função:
Function: _____

Assinatura:
Signature: _____

Local:
Place: _____

Data:
Date: _____

Em nome do fabricante, o signatário deste questionário de avaliação declara que toda a informação fornecida é verdadeira.

On behalf of the manufacturer, the signatory to this form declares the accuracy of the information provide.

PÁGINA SUPLEMENTAR

SUPPLEMENTARY PAGE

TÜVRheinland®
DIN CERTCO

ANTRAG
APPLICATION

auf KEYMARK-Produktzertifizierung
for KEYMARK Product Certification

DIN CERTCO Gesellschaft für
Konformitätsbewertung mbH
Alboinstraße 56
D-12103 Berlin

- ☐ Erstzertifikat
  First certificate
- ☐ Verlängerung
  Renewal
- ☐ Erweiterung/Änderung
  Extension/alteration
- ☐ Unterzertifikat
  Sublicence

Bisherige Registernummer Hersteller
Previous Registration No. manufacturer

_____

Antragsteller Applicant		**Ansprechpartner** Contact person	
Straße Street		**Telefon** Telephone	
Postfach PO Box		**E-Mail** E-mail	
PLZ/Ort Postal Code/City/Country		**Lieferanschrift** Delivery address	
Telefon Telephone		**Straße** Street	
Telefax Telefax		**PLZ/Ort** Postal Code/City/Country	
E-Mail E-mail		**Rechnungsanschrift** Invoice address	
Internet Website		**Straße** Street	
Ident.-Nr. VAT-No.		**PLZ/Ort** Postal Code/City/Country	
		Bestell-/Auftragsnr. Reference/order No.	

Hiermit beantragen wir (bitte zutreffendes ankreuzen) We herewith apply (please tick if applicable):

☐ **die Ausstellung eines oder mehrerer Zertifikate** einschließlich der Nutzungslizenz für die KEYMARK zum Nachweis der Konformität des folgenden Produktes:
For the issue of (a) certificate(s) including the license for the use of the KEYMARK to prove the conformity of the following product:

Zertifikatsprachen Certificate languages

- ☒ Deutsch, German
- ☐ Englisch, English
- ☐ Französisch, French
- ☐ andere, others _____
- ☐ Druckfähige Datei (300 dpi) der Zertifikate
  printable file (300 dpi) of the certificates

Produkt Product	
Typ/Modell Type/model	
Prüfgrundlage (EN-Norm) Basis of test/inspection (EN-standard)	
Hersteller/Fertigungsstätte Manufacturer/production site (sofern vom Antragsteller abweichend, where not the applicant)	
Straße Street	
PLZ/Ort/Land Postal Code/place/country	

☐ **das/die folgende Prüflaboratorium/Überwachungsstelle,** wenn möglich, mit den notwendigen Prüfungen und Inspektionen **zu beauftragen**
to entrust the following testing laboratory/inspection body with the necessary tests and inspections, if possible:

Name
Name _____

Ansprechpartner
Contact person _____

Straße
Street _____

PLZ/Ort/Land
Postal Code/place/country _____

Telefon/Fax
Telephone/fax _____

E-Mail/Internet
E-mail/website _____

☐ **ein Angebot des/der Prüflaboratoriums/Überwachungsstelle einzuholen:**
for a call for tenders of testing laboratories/inspection bodies:

Name
Name _____

PLZ/Ort/Land
Postal Code/place/country _____

☐ **ein entsprechende(s) Prüflaboratorium/eine Überwachungsstelle zu benennen**
to appoint a testing laboratory/inspection body:

Zusätzliche Informationen (bitte zutreffendes ankreuzen):
Additional data for the product certification (please tick, if applicable):

Die Herstellung des Produktes und das Produkt selbst unterliegen einer produktbezogenen Herstellungskontrolle (QS-System) unter Berücksichtigung der betreffenden Produktnormen und der Elemente der Normenreihe EN ISO 9000:
The production of the product and the product itself are subject to a factory production control (FPC) in consideration of the relevant product standards and the elements of EN ISO 9000 serie:

☐ Ja
Yes

☐ Nein
No

Diese produktbezogene Herstellungskontrolle wird von einem Qualitätsmanagementsystem nach der Normenreihe EN ISO 9000 unterstützt:
This factory production control is supported by a quality management system according to EN ISO 9000 serie:

☐ Ja
Yes

☐ Nein
No

☐ Das QM-System wurde zertifiziert durch:
The QM-system has been certified by:

Zertifizierungsstelle
Certification body _____

Datum der Zertifizierung
Date of certification _____

Die folgenden Unterlagen sind diesem Antrag beigefügt (bitte zutreffendes ankreuzen):
The following enclosures are attached to this application (please tick if applicable):

- ☐ Zeichnungen
  Drawings
- ☐ Konstruktionszeichnungen
  Manufacturing drawings
- ☐ Stückliste
  Lists of items
- ☐ Prüfergebnisse
  Test results
- ☐ Prüfbericht(e)
  Test report(s)
- ☐ Nachweis über ein zertifiziertes QM-System (Kopie des Zertifikats)
  Detection of a certified quality management system (copy of the certificate)
- ☐ Erklärung zu Leistungskriterien
  Declarations on performance criteria
- ☐ Bedienungsanleitung
  Instructions for use
- ☐ Bilder
  Pictures
- ☐ Modell des Produkts
  Model of the product
- ☐ Produkt oder Muster
  Product or specimen
- ☐ _____

Der Antragssteller erklärt sich damit einverstanden, alle Anforderungen der CEN/CENELEC Geschäftsordnung, Teil 4 sowie ggf. produktspezifische KEYMARK-Zertifizierungsprogramme zu erfüllen und verpflichtet sich ferner, alle Informationen bereitzustellen, die für die Bewertung des zu zertifizierenden Produktes erforderlich sind.
The applicant agrees to comply with the requirements for certification of the CEN/CENELEC Internal Regulations, part 4 and where required, the specific KEYMARK certification schemes. Furthermore he supplies any information needed for the assessment of products to be certified.

Folgende Dokumente liegen uns vor und werden von uns vorbehaltlos anerkannt:
- das jeweilige Zertifizierungsprogramm
- die jeweilige Gebührenordnung von DIN CERTCO in ihrer jeweils gültigen Fassung
- Allgemeine Geschäftsbedingungen von DIN CERTCO

We received the following documents and we acknowledge these without reservation:
- the respective certification scheme
- the respective schedule of fees in their current version
- the general terms and conditions of DIN CERTCO

Ihre personenbezogenen Daten werden bei DIN CERTCO gemäß § 28 Bundesdatenschutzgesetz (BDSG) gespeichert und in automatisierten Verfahren bearbeitet. Der Nutzung Ihrer Daten zum Zwecke der Werbung oder der Markt- und Meinungsforschung können Sie jederzeit widersprechen.
All personal data is saved and processed in automated procedures according to § 28 (BDSG, German Data Protection Act). The right to use this data for the purpose of advertising or market and opinion research can be revoked at any time.

Gemäß unserer Allgemeinen Geschäftsbedingungen behalten wir uns vor, für die beantragte Dienstleistung eine Vorauszahlung in angemessener Höhe zu fordern.
Pursuant to article 7.9 of our General Terms and Conditions, we reserve the right to request a reasonable payment in advance for the requested service.

Für Kunden mit Sitz in einem Drittland gemäß EG-Richtlinie 2008/8/EG benötigen wir einen Nachweis über den Unternehmensstatus in Form einer Unternehmensbescheinigung von der Finanzbehörde des Staates, in dem das Unternehmen in das Handelsregister eingetragen ist. Liegt uns diese Bescheinigung zum Zeitpunkt der Rechnungsstellung nicht vor, berechnen wir den in Ihrem Land gültigen Mehrwertsteuersatz.
In the case of customers with headquarters in a third country, as defined in EC Directive 2008/8/EC, we require verification of the status of the company in the form of a corporate taxpayer certificate from the tax authority in the country in whose Commercial Register the company is entered. If we have not received this certificate by the time our invoice is issued, we will charge the prevailing rate of value-added tax in your country.

Ort/Datum Place/Date	Firmenstempel/rechtsverbindliche Unterschrift Company stamp/legally binding signature

INSTITUTE FOR TESTING AND CERTIFICATION, Inc
Notified Body No 1023 * Product Certification Body No 3020

APPLICATION FOR PRODUCT TESTING / CERTIFICATION

The application form starts on Page 3.

READING OF THE FOLLOWING EXPLANATIONS IS NOT OBLIGATORY.
But it can save your money and speed up the processing of your application.

If you send off the application to ITC, it is not necessary
to send the first two page(s) with explanations. Please delete them.

Point	Explanation
General 1	**This application should preferably be used for products where relevant requirements (implied by EU directives or regulations, harmonized standards, or by other specifications) are not known or not quite clear to the applicant.** **Otherwise, more specific application forms from www.itczlin.cz should be used.**
General 2	**Please fill out yellow fields only.**
General 3	**If you send the application electronically please rename this file** using the company name (and your order number and also the product name if you send more applications at the same time), e.g. *Apl-prod-cert_ABC-Electric_Switch-GX029.doc*
General 4	**The company name and product/model name(s) in the application shall respond to the names on the product marking plate and in the whole documentation (user guide, product specification, marking plate, all test reports).** These names will also be used in the final report and the certificate. **Differences in names in the whole documentation submitted may be a reason for refusal of the application.**
General 5	The company representative's signature must be on the same page as the declaration. If your application exceeds one page, make a new page starting with the beginning of Section 4 (Applicant's Declaration). The signature must be an authentic one – not an "electronic stamp".
General 6	The fields marked with * are not obligatory. Nevertheless, if you know the required data, fill them out: this can eliminate misunderstandings and additional questioning, and thus speed up your application.

1.5	Write down the name and position of the company representative He/she must be entitled to act on behalf of the company and, if needed, this authorization must be proved (by a nomination decree, record in the Trade Register, or similar). The representative must be the person signing this application.
1.6	The contact person is a person entitled to negotiate with ITC, competent enough to answer questions regarding your application.
1.7–9	The banking data is not obligatory but is recommended, especially if you are going to pay directly to ITC (not relevant for clients being mediated by ITC foreign representatives). Banking data helps us to identify your payment in a better way and, if the assessment/certification process is not completed, the money paid in advance is returned to the specified account.
1.8–9	Example of IBAN (ITC): CZ88 0100 0000 8621 1333 0267 / Example of SWIFT (ITC): KOMB CZPP XXX

2.2 Use the model name, especially if you
• want to distinguish a general name of the type/group of product from a representative of this group or from its brand name (e.g. *Electric switch, Model: GX-029-7A*)
• want us to assess/certify more models of one product
The model name is not obligatory if the product name by itself is sufficiently specific (e.g. *Thermal massager TM-650* is sufficient while *Thermal Massager 650 Watt* or even *Handheld Thermal Massagers* are not!)

More models in one application are acceptable
provided all of them are identical or very similar in all aspects to be assessed.

Then, either all models are tested separately, or testing of the product representative(s) may be accepted (usually the models with the strongest and weakest parameters, or a representative RoHS testing if all models utilize the same parts or suppliers.) Use of representative testing should be previously discussed with ITC.

2.3 Fill out this field if the manufacturer of the assessed product is different from the applicant (the applicant can be a representative/agent/distributor/reseller or similar)

2.4 CPA means Classification of Products by Activity as introduced by Regulation (EC) No 451/2008. See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:145:0065:0226:EN:PDF

2.5 This description of the product or its usage is useful if no relevant legal documents for certification (standards etc.) are known to the applicant and no explanatory materials are enclosed (e.g. because the User Manual has not been translated into English so far).
Description of usage may also be important as sometimes the same product can declared for various usages with very different requirements to meet (e.g. as electric device for domestic use or as medical device)

3.1 Test Report only: Only testing, no assessment of conformity will be done.
Type certificate: Certificate about conformity of the product sample/prototype with relevant standards; usually 3-year validity.
Product certificate: Certification of type + yearly audits of Factory Production Control (i.e. certification of production conformity with the tested sample/prototype); usually unlimited validity but conditioned by positive results of FPC audits

3.2 Implicit language of issued documentation is English (not necessary to fill out).
English or Czech language: no special charge
If any other language(s) are required, an extra fee for translation(s) is charged (minimum EUR 50).

3.3 If you know any standard (can be a national one), regulation or specification of requirements relevant for assessment/certification of the product, write it down. Provided these documents are national, regional or proprietary ones (company internal technical standards are also possible), please attach them in English.

3.5 Write down the specifications from Point 3.4 here (if needed) or any other requirements (e.g. assessment of a special aspect).

3.6 The list of documentation attached to this application is not obligatory but it is recommended since it eliminates any chance that some part(s) of your documentation will not be taken into consideration – especially if you ask for more products/models to be assessed/certified.
Write down either the descriptions of documents attached to each product/model, or their filenames, or at least the number of files attached.

Usually this documentation is required:

- Technical specification (including photos and drawings)
- Photo/copy of the marking plate (version intended to be used for EU markets)
- User guide
- Test reports (if no or part testing is required)
- Audit reports (if product certification is required)
- Declaration of Conformity (if any: it is not important for assessment/certification, but we can check its form and contents)
- Other relevant documents (e.g. No-hazardous-substances declarations from suppliers, certificates of product parts)

These test/audit reports must be issued by accredited certification bodies.

All documentation must be submitted in English (or possibly in another EU-member-country language, if the product is intended to be sold in one or in some EU countries). Other languages are accepted only with previous approval by ITC.

4.1 This point must be explicitly filled out (checked) by applicants from countries outside EU.
If not, they will be charged by 20% VAT to the price.

INSTITUTE FOR TESTING AND CERTIFICATION, Inc
Notified Body No 1023 * Product Certification Body No 3020

APPLICATION FOR PRODUCT TESTING / CERTIFICATION

Applicant's order number (not obligatory)	
ITC Order number (do not fill out please)	

1 – APPLICANT

1–Company name			
2–(VAT) Registration number			
3– Address			
4–ZIP / Country			
5–Company representative (name, position)			
6–Contact person (name, position, phone)			
7–E-mail of the contact person	@		
8–Bank name and address*			
9–SWIFT code		10–IBAN	

2 – PRODUCT DESCRIPTION

1–Product name	
2–Model name(s)*	
3–Manufacturer*	
4–CPA code*	
5–Product description*	

3 – SERVICE DESCRIPTION

1–Document required to be issued	☐ Type Certificate ☐ Product Certificate	☐ Test Report only ☐ Re-certification	☐ Other (specify in 3.5)
2–Language of issued documentation*			
3–Standards used / required*			
4–Testing	☐ Required	☐ Not required	☐ Partially required
5–Other requirements / specifications*			
6–List of documentation attached*			

4 – APPLICANT'S DECLARATION

1. (Only for countries outside EU:)
   ☐ We declare that we have no workplace, business premises or establishment in the Czech Republic (CZ) and thus we meet all conditions for billing without VAT .
   ☐ We have a workplace, business premises or establishment in the CZ and thus we do not meet conditions for billing without VAT.
2. We agree with ITC Obligatory Business Conditions.
3. We declare that all data written in this application and attached documentation are true.

Signature of the company representative + stamp	
Date	

APPLICATION FORM

Solar Keymark

Solar Collectors acc. to EN 12975-1

Application form to SP for
Product Certification License
for use of the Solar Keymark

Company (full name)	
Postal address	
Postal code, town	
Country	
Org.No/ Vat.No	
Visiting address	
Company phone	
Company website	
Company e-mail	
Company fax No	
Contact person	
Phone/s	
E-mail	
Other	
information	

The applicant agrees to comply with the requirements for certification (Solar Keymark rules) and to supply any information needed for evaluation of products to be certified.

Place and date:	
Name and signature of the applicant:	

APPLICATION FORM

Solar Keymark

Description of the products to be included in the certification

Product/model name	
Type (flat plate/vacuum tube/other)	
Size/s (m^2)	
Max. oper. Pressure [1)]	
Max. mechanical load [2)]	
To be roof integrated [3)]	
Other	
collector	
information:	

Product/model name	
Type (flat plate/vacuum tube/other)	
Size/s (m^2)	
Max. oper. Pressure [1)]	
Max. mechanical load [2)]	
To be roof integrated [3)]	
Other	
collector	
information:	

Product/model name	
Type (flat plate/vacuum tube/other)	
Size/s (m^2)	
Max. oper. Pressure [1)]	
Max. mechanical load [2)]	
To be roof integrated [3)]	
Other	
collector	
information:	

[1)] The collector will be tested for a maximum pressure of 1.5 times the maximum operating pressure

[2)] According to the standard the load is increased until failure occurs or up to the value specified by the manufacturer. The test pressure shall be at least 1000 Pa.

[3)] To be roof integrated? Fill in yes or no. Roof integrated collector will not be sprayed from all sides in the rain penetration test.

APPLICATION FORM

Solar Keymark

Additional data for the product certification and the production of the products

Manufacturing places and circumstances

The collectors are produced at location of applicant (yes/no):	
If no, describe production locations:	
-	
-	
-	
-	
The applicant is certified acc. to ISO 9001 (yes/no):	
If yes, certification organization and Certificate No:	

Other relevant information

-	
-	
-	
-	
-	
-	
-	
-	

The following enclosures are attached to this application (please tick if applicable):

☐ instructions for installation and use (mandatory for certification)

☐ drawings

☐ test report(s)

☐ other(s):

Part 2 | Readiness criteria for SHAMCI Test labs

1. Lists of required tests

1.1 List of required testing of solar collectors

ISO 9806:2013				Comments
6	Internal pressure test for fluid channels f, g 6.1 Inorganic fluid channels 6.2 Fluid channels made of organic materials	●	● (6.1 only)	Inorganic → metal Organic → plastics/rubber
7	Leakage test h			Only relevant for air collectors
8	Rupture and collapse test h			Only relevant for air collectors
9	High-temperature resistance a, b	●	●	
10	Standard stagnation temperature of liquid heating collectors	●	●	Can be done by calculation based on measurements in 9. High temperature resistance or 20. Thermal performance
11	Exposure (and pre-exposure) test b	●	●	
12	External thermal shock test c	●	●	
13	Internal thermal shock test c	●	●	
14	Rain penetration test d, h	●	●	
15	Freeze resistance test e, h	●	●	Only relevant for collectors marketed in areas with risk of freezing AND claimed to be freeze resistant without use of anti-freeze fluid
16	Mechanical load test h	●	●	
17	Impact resistance test i Ice balls Steel balls	●	●	
20	Thermal performance test j	●	●	
26	Determination of the effective thermal capacity and the time constant of a collector	●		Normally only minor influence on performance
27	Determination of incident angle modifier	●		Normally only minor influence on performance
28	Pressure drop measurement h, l	Only obligatory for air collectors		Not considered relevant for SHAMCI so far due to very limited market of air collectors
18	Final inspection k	●	●	

- For organic absorbers, the high-temperature resistance test shall be performed before internal pressure test in order to determine the collector standard stagnation temperature needed for the internal pressure test.
- The high temperature and exposure test shall be carried out on the same collector.
- The external and internal thermal shock tests may be combined with the exposure test or the high-temperature resistance test.
- The rain penetration test shall be carried out only for glazed collectors.
- The freeze resistance test shall be carried out only for collectors claimed to be freeze resistant.
- Applicable only for liquid heating collectors.
- For polymeric collectors, a full exposure is required before the test, see Clause 11 in [1].
- Pre-exposure or full exposure is required before the test, see Clause 11 [1].
- Pre-exposure or full exposure is required before the test if polymer cover, see Clause 11 in [1].
- Full exposure is required before the performance testing of heat pipe collectors.
- Every collector tested needs to undergo the final inspection.
- Mandatory only for air heating collectors.

1.2 List of required testing of solar water heaters

Numbers in left column below refers to EN 12976-2				Comments
5.1	Freeze resistance • Systems using anti-freeze fluid • Drain-back systems • Drain-down systems • Protection by control function • Other	●	●	
5.2	Over temperature protection	●	●	
5.3	Pressure resistance	●	●	
5.4	Water contamination	●	●	
5.5	Lightning protection	●	●	
5.6	Safety equipment	●	●	
5.8	Complete test of performance including prediction of long-term performance according to: ISO 9459-2 (I/O) [3] ISO 9459-5 (DST) [4]	●	●	The test lab only needs to be able to perform testing according to one of the standards 9459-2 and 9459-5
5.9	Ability to cover the load	●	●	
5.10	Reverse flow protection	●	●	
5.11	Electrical safety	●	●	

2 Technical equipment required

2.1 Technical equipment required for testing solar collectors – listed for each test

2.1.1 6 Internal pressure tests for fluid channels

2.1.1.1 6.1 Inorganic fluid channels

The test equipment shall fulfil the requirements in ISO 9806:2013 “6.1.2 Apparatus and procedure”.

Recommended specific requirements:

- Hydraulic pressure source: 0-25 bar
- Safety valve(s): 0-25 bar
- Pressure gauge(s) (internal pressure): 0-25 bar, standard uncertainty <5%
- Temperature sensor (air temperature): 10-50°C, standard uncertainty < 1K
- Data acquisition system and software for sampling/recording values of internal pressure and surrounding air temperature – sampling and recording at least every minute

2.1.1.2 6.2 Fluid channels made of organic materials (plastics or elastomers)

The test equipment shall fulfil the requirements in ISO 9806:2013 “6.3 Apparatus and procedure”.

Recommended specific requirements:

- Hydraulic/pneumatic pressure source: 0-10 bar
- Safety valve(s): 0-10 bar
- Pressure gauge(s) (internal pressure): 0-25 bar, standard uncertainty <5%
- Temperature sensors (air temperature): 10-50°C, standard uncertainty < 1K
- Temperature sensors (collector/fluid temperature): 10-200°C, standard uncertainty < 1K
- Data acquisition system
  and software for sampling/recording values of internal pressure and surrounding air temperature – sampling and recording at least every minute

For safety reasons, the collector shall be encased in a transparent box to protect personnel in the event of explosive failure during this test !

2.1.2 9 High-temperature resistance test

The test equipment shall fulfil the requirements in ISO 9806:2013 “9.2 Apparatus and procedure”.

Recommended specific requirements:

- Pyranometer (solar irradiance on collector plane): Class I in accordance with ISO 9060
- Temperature sensor (surrounding air temperature): -10 – 60°C, standard uncertainty < 1K
- Temperature sensors (absorber temperatures): -10 – 300°C, standard uncertainty < 5K
- Anemometer (surrounding air velocity): 0 – 10 m/s, standard uncertainty < 0,5 m/s
- Data acquisition system and software for sampling/recording values of irradiance, surrounding air temperature, wind velocity and absorber temperatures – sampling all data at least every 10 minutes; recording all data at least every 30 minutes
- Test rig for mounting collectors, adjustable inclination 10-60°

Note: Should/could be combined with 2.1.3., 2.1.4, 2.1.5., 2.1.6, 2.1.7

2.1.3 10.2 Measurement and extrapolation of standard stagnation temperature

Testing can be done with same equipment as in 2.1.2 above.

Note: Should/could be combined with 2.1.2., 2.1.4, 2.1.5., 2.1.6, 2.1.7

2.1.4 11 Exposure and pre-exposure test

The test equipment shall fulfil the requirements in ISO 9806:2013 “11.2 Apparatus and procedure”.
Recommended specific requirements:

- Pyranometer (solar irradiance on collector plane): Class I in accordance with ISO 9060
- Temperature sensor (surrounding air temperature): -10 – 60°C, standard uncertainty < 1K
- Rain gauge: standard uncertainty < 20%
- Data acquisition system and software for sampling/recording values of irradiance, surrounding air temperature, wind velocity and absorber temperatures – sampling all data at least every 10 minutes; recording all data at least every 30 minutes
- Test rig for mounting collectors, adjustable inclination 10-60°

Note: Should/could be combined with 2.1.2., 2.1.3, 2.1.5., 2.1.6, 2.1.7

2.1.5 12 External thermal shock test

The test equipment shall fulfil the requirements in ISO 9806:2013 “12.2 Apparatus and procedure”.
Recommended specific requirements:

- Pyranometer (solar irradiance on collector plane): Class I in accordance with ISO 9060
- Temperature sensor (surrounding air temperature): -10 – 60°C, standard uncertainty < 1K
- Temperature sensor (water temperature): 0 – 60°C, standard uncertainty < 1K
- Flow meter: 0 – 0.2 kg/s, standard uncertainty < 10%
- Array of water jets to provide a uniform spray of water over the front of the collector, flow rate: 0.03 – 0.05 kg/s per m^2 collector gross area
- Data acquisition system and software for sampling/recording values of irradiance, surrounding air temperature, water temperature and flow rate – sampling/recording all data at least every 10 minutes
- Test rig for mounting collectors, adjustable inclination 10-60°

Note: Should/could be combined with 2.1.2., 2.1.3, 2.1.4., 2.1.6, 2.1.7

2.1.6 13 Internal thermal shock test

The test equipment shall fulfil the requirements in ISO 9806:2013 “13.2 Apparatus and procedure”.
Recommended specific requirements:

- Pyranometer (solar irradiance on collector plane): Class I in accordance with ISO 9060
- Temperature sensor (surrounding air temperature): -10 – 60°C, standard uncertainty < 1K
- Temperature sensor (water temperature): 0 – 60°C, standard uncertainty < 1K
- Temperature sensors (absorber temperatures): -10 – 300°C, standard uncertainty < 5K
- Flow meter: 0 – 0.1 kg/s, standard uncertainty < 10%
- Data acquisition system and software for sampling/recording values of irradiance, surrounding air temperature, water temperature and flow rate – sampling/recording all data at least every minute.
- Test rig for mounting collectors, adjustable inclination 10-60°

Note: Should/could be combined with 2.1.2., 2.1.3, 2.1.4, 2.1.5, 2.1.7

2.1.7 14 Rain penetration test

The test equipment shall fulfil the requirements in ISO 9806:2013 “14.2 Apparatus and procedure”.
Recommended specific requirements:

- Temperature sensor (water temperature): 0 – 60°C, standard uncertainty < 1K
- Flow meter: 0 – 0.2 kg/s, standard uncertainty < 10%
- Array of water jets (30° angle of spray nozzle with respect to the collector surface see fig. 2 in section 14.3 in ISO 9806:2013); mass flow of 2 kg/min (±0,5 kg/min) per nozzle
- Scales for weighing the collector, standard uncertainty < 5 g per m^2 collector gross area
- Data acquisition system and software for sampling/recording values of, water temperature and flow rate – sampling/recording all data at least every 30 minutes
- Test rig for mounting collectors, adjustable inclination 10-60°

2.1.8 15 Freeze resistance test

This test is not relevant for collectors marketed in climates with no risk of freezing.

This test is not relevant for collectorsfor which it is clearly stated in the installation manual that they may only be used with an antifreeze fluid or air.

marketed in climates with no risk of freezing.

The test equipment shall fulfil the requirements in ISO 9806:2013 “15.2 Apparatus and procedure”.
Recommended specific requirements:

- Cold chamber (-25° - ambient)
- Temperature sensor (absorber temperature): -25 – 60°C, standard uncertainty < 1K

2.1.9 16 Mechanical load test with positive or negative pressure

The test equipment shall fulfil the requirements in ISO 9806:2013 “16.2 Apparatus and procedure”.
Recommended specific requirements:

- Newton meter: 0 – 9000 N, standard uncertainty < 5%
- Arrangement with suction cups apple to push and pull the collector cover +/- 3000 Pa on 3 m^2 (9000 N = 900 kg)
- Test rig for mounting collectors and arrangement of suction cups to be uniformly distributed over the collector cover area

Note: Optionally/recommended: Data acquisition system and software for sampling/recording measured values

2.1.10 17 Impact resistance test

The test equipment shall fulfil the requirements in ISO 9806:2013 “17 Impact resistance test”. Two methods are proposed: “Ice ball method” and “Steel ball method”. Here is given recommended specific requirements for the steel ball method:

- Steel ball 150 g +/- 10 g
- Device/ruler to measure height of falling distance +/- 1 mm

2.1.11 20 Performance testing of fluid heating collectors

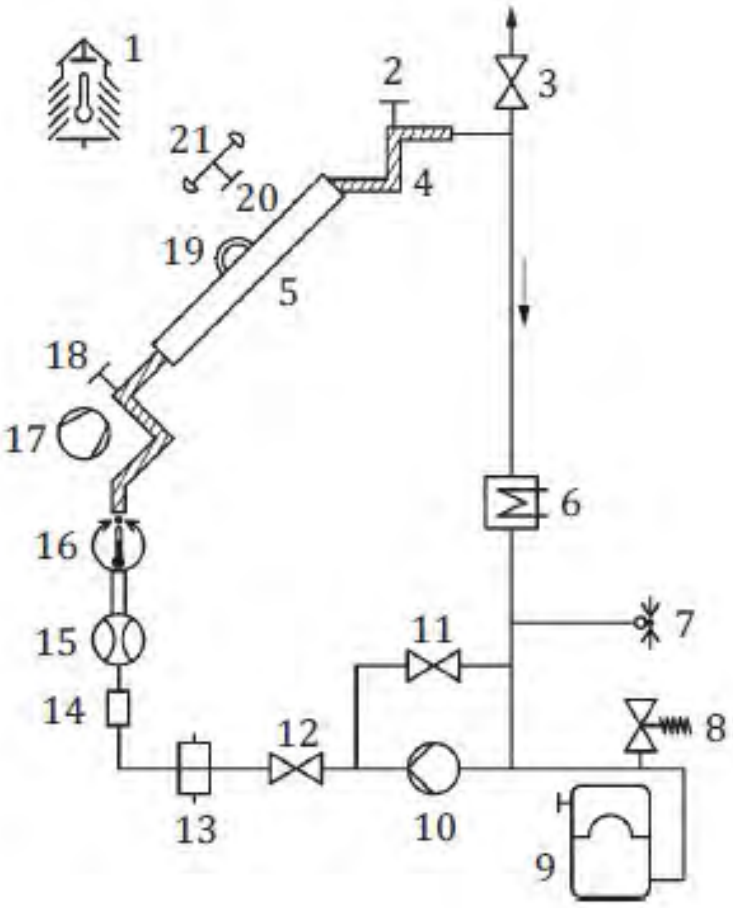
The test equipment shall fulfil the requirements in ISO 9806:2013 “20Performance testing of fluid collectors”, 21 Collector mounting and location”, “22 Instrumentation”, “23 Test installation” and “24 Performance test procedures”.

There are several ways to do the performance testing: in a simulator / outdoor; steady state / quasi dynamic. Given here are the recommended specific requirements for related to steady state outdoor testing (of one collector), which is considered the most simple option.

- Outdoor mounting rig, having a capacity and strength to host the collector(s) being tested, adjustable inclination 10-60°, **supplied with fans** (wind generators) at the bottom in the whole length.
- Cooling equipment having the capacity to cool the collectors being tested. Note: As water resources are scarce in many places, water should be re-circulated and a cooling arrangement including buffer tank(s) is recommended.
- Computer(s) with all necessary software installed and all hardware needed for controlling operation, taking measurements and sampling/recording/analyzing data
- Simple device for measuring incidence angle (e.g. as specified in ISO 9806, 22.1.1.7)
- Pyranometer (total solar irradiance on collector plane): Class I in accordance with ISO 9060
- Pyranometer with shadow ring (diffuse solar irradiance on collector plane): Class I in accordance with ISO 9060
- Electronic temperature sensors (outdoor air temperature): 0 – 50°C, standard uncertainty < 0,5 K
- Anemometer with mounting arrangement according to ISO 9806 22.5.2.1: 0 – 10 m/s, standard uncertainty < 0,5 m/s
- Hand held anemometer (for check of uniformity of wind speed): 0 – 10 m/s, standard uncertainty < 0,5 m/s
- Flow meter: 0 – 0.1 l/s, standard uncertainty better than +/- 1% of measured value
- Temperature sensor (collector inlet) with mixing/mounting devices according to ISO 9806 22.3.2.2: 0-100°, standard uncertainty < 0,1 K (resolution 0,02K, 12-bit representation)
- Temperature difference sensors (temperature difference across the collector) with mixing/mounting devices according to ISO 9806 22.3.2.2: 0-100°, standard uncertainty < 0,05 K
- Data recorders shall have a sample rate between 1 and 10 s and give the elapsed time better than 0,2%
- Pipe work and fittings in the test loops (and the insulation) shall fulfill specifications in ISO 9806 23.1.3 “Pipe work and fittings” – especially:
    - resistance to corrosion
    - resistance to withstand temperatures up to 95°C
    - collector inlet section (from temperature regulator to collector) shall be insulated to less than 0,15 W/K
- Pumps and flow control devices according to ISO 9806 23.1.4 “Pump and flow control devices”, flow stability: +/- 1%.
- Temperature regulation of the heat transfer fluid according to ISO 9806 23.1.5 “Temperature regulation of the heat transfer fluid”, inlet temperature stability 0,1K.

Examples of test loops; fig 5 and 6 from ISO 9806, see next pages:

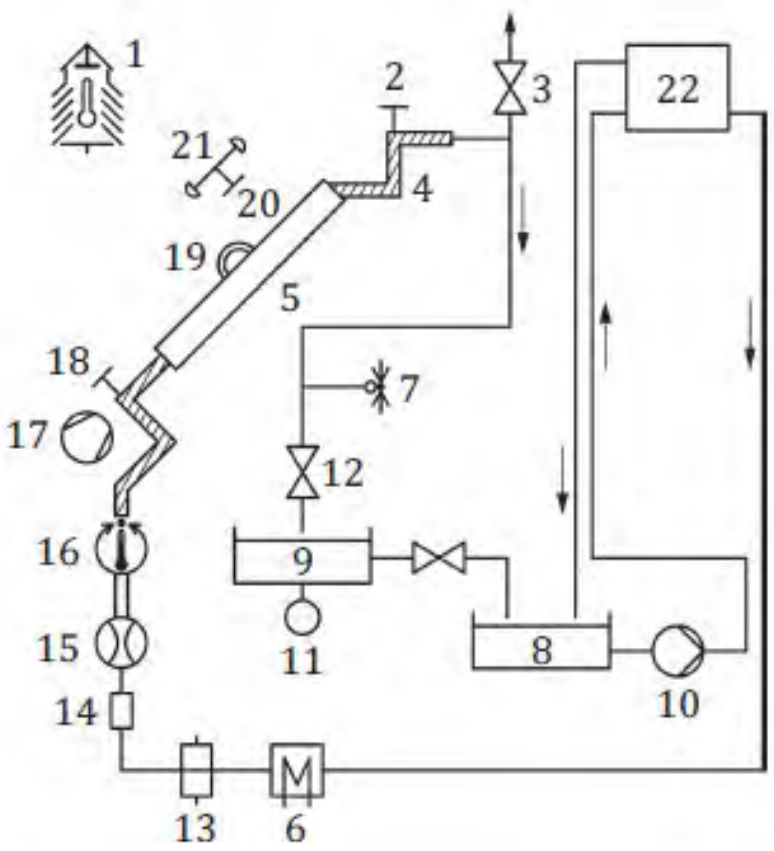
Figure 1 Example of a closed test loop. Fig 5 from ISO 9806 [1]



Key

1	Ambient temperature sensor	12	Flow control valve
2	Temperature sensor (θ_e)	13	Filter (200 µm)
3	Air vent	14	Sight glass
4	Insulated pipe	15	Flow meter
5	Solar collector	16	Secondary temperature regulator
6	Heater/cooler for primary temperature control	17	Artificial wind generator
7	Pressure gauge	18	Temperature sensor (θ_{in})
8	Safety valve	19	Pyrgeometer
9	Expansion tank	20	Pyranometer
10	Pump	21	Anemometer
11	Bypass valve		

Figure 2. Example of an open test loop. Fig 6 from ISO 9806 [1]



Key

1	Ambient temperature sensor	12	Flow control valve
2	Temperature sensor (θ_e)	13	Filter (200 µm)
3	Air vent	14	Sight glass
4	Insulated pipe	15	Flow meter
5	Solar collector	16	Secondary temperature regulator
6	Heater/cooler for primary temperature control	17	Artificial wind generator
7	Pressure gauge	18	Temperature sensor (θ_{in})
8	Reservoir	19	Pyrgeometer
9	Weighing vessel	20	Pyranometer
10	Pump	21	Anemometer
11	Balance	22	Constant head tank

2.2 Technical equipment required for testing solar water heaters – listed for each test

2.2.1 5.1Freeeze resistance

The test equipment shall fulfil the requirements in EN 12976-2 [2] “5.1 Freeze resistance”.
Recommended specific requirements:

- Systems using anti freeze fluid: Portable refractometer for checking freezing point of fluid
- Any other systems: No requirements for equipment

2.2.2 5.2 Over temperature protection

The test equipment shall fulfil the requirements in EN 12976-2 “5.2.2 Apparatus”.
Recommended specific requirements:

- Test rig for mounting the system
- Pyranometer (total solar irradiance on collector plane): Class I in accordance with ISO 9060
- Flow meter: 0 – 0.3 l/s, standard uncertainty better than +/- 2% of measured value
- Temperature sensor (hot water outlet): 0-150°, standard uncertainty <0.5 K
- Water supply with controlled temperature (5° - 25°C), controlled pressure (200 - 600 kPa) and flow rate (10 l/min ± 1 l/min)

2.2.3 5.3 Pressure resistance

The test equipment shall fulfil the requirements in EN 12976-2 “5.3.2 Apparatus”.
Recommended specific requirements:

- Test rig for mounting the system
- Pressure regulated hydraulic pressure source
- Pressure gauge, standard uncertainty <5 %
- Bleed valve
- Isolation valve

2.2.4 5.4 Water contamination

The test equipment shall fulfil the requirements in EN 1717 [5].

2.2.5 5.5 Lightning protection

The test equipment shall fulfil the requirements in EN 12976-2 “Annex E Lightning protection test for solar heating systems”.
Recommended specific requirements:

- Test rig for mounting the system
- Measuring instrument for distances 0.3 mm to several meters …

2.2.6 5.6 Safety equipment

The test equipment shall fulfil the requirements in EN 12976-2 “5.6 Safety equipment”.
Only recommended specific requirement:

- Test rig for mounting the system
- Vernier caliper for measuring internal diameter of safety valve blow-off line.

2.2.7 5.8 Thermal performance characterisation

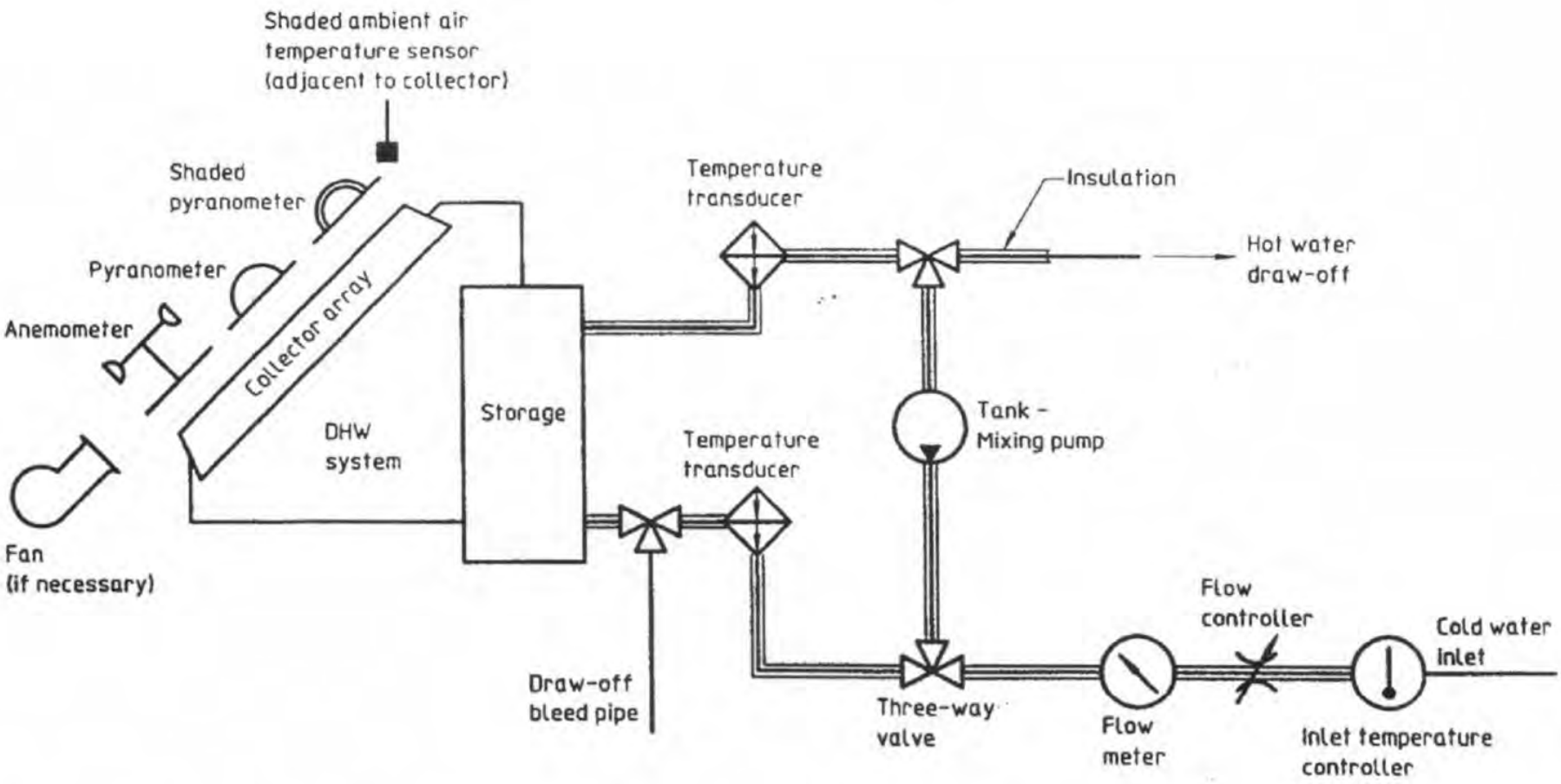
The test equipment shall fulfil the requirements in ISO 9459-2 [3] "Outdoor test methods for system performance characterisation and yearly performance prediction of solar only systems"

There are two ways to do the performance testing and long-term performance prediction: ISO 9459-2 and ISO 9459-5 [4]. ISO 9459-2 is limited to "solar only systems", but as this type is the most common type in the SHAMCI countries. Given here are the recommended specific requirements for related to ISO 9459-2 (of one system), which is considered the most simple option.

- Outdoor mounting rig, adjustable inclination 10-60°, supplied with fans (wind generators) at the bottom in the whole length.
- Cooling/heating equipment having the capacity to cool a typical solar domestic hot water system: approx. 2-3 kW cooling power and being able keep the required constant inlet temperature. Note: As water resources are scarce in many places, water should be re-circulated and a cooling arrangement including buffer tank(s) is recommended.
- Computer(s) with all necessary software installed and all hardware needed for controlling operation, taking measurements and sampling/recording data according to ISO9459-2
- Computer(s) with all necessary software installed for performing data analysis and treatment of data including long-term performance prediction
- Pyranometer (total solar irradiance on collector plane): Class I in accordance with ISO 9060
- Pyranometer with shadow ring (diffuse solar irradiance on collector plane): Class I in accordance with ISO 9060
- Electronic temperature sensor(s) (outdoor air temperature + (if indoor tank) indoor air temperature): 0 – 50°C, standard uncertainty < 0,5 K
- Hand held anemometer (for check of uniformity of wind speed): 0 – 10 m/s, standard uncertainty < 0,5 m/s
- Flow meter: 0 – 0.2 l/s, standard uncertainty better than +/- 1% of measured value
- Flow meter: 0 – 0.1 l/s, standard uncertainty better than +/- 5% of measured value (only for checking flow in solar loop of pumped systems)
- Temperature sensors (mains water – cold water into system), standard uncertainty < 0,1 K
- Temperature difference sensor (temperature difference in/out of tank), standard uncertainty < 0,1 K
- Pipe work and fittings in the test loop (see figure below) shall fulfill specifications in ISO 9459-2 6.1.4 "Liquid flow system" – especially:
    - resistance to corrosion
    - resistance to withstand temperatures up to 95°C
    - collector inlet section (from temperature regulator to store inlet) shall be insulated to less than 0,2 W/K
    - Short distances between temperature sensor and inlet/outlet of tank (temperature difference due to heat loss shall be < 0.01K
- Instrumentation/data recorders shall have accuracy better than +/- 0.5 % of full scale reading. Time constant < 1 s. Recorders input impedance > 10 MΩ AND > 1 000 x sensor impedance.
- Temperature regulation of the heat transfer fluid, inlet temperature stability +/- 0,25 K

Figure 3 next page (showing figure 1 from ISO 9459-2) gives a schematic example of a test loop for system performance testing.

Figure 3. Schematic drawing of a test loop for system performance testing. From 9459-2 [3]



3 Requirements for quality management system and staff qualifications at test labs

3.1 Requirements from 2021

From 1st of January 2021 requirements for the quality management system and staff will be according to: IEC/ISO 17025.

Until then the following requirements are recommended.

3.2 Interim requirements for quality management system

From the IEC/ISO 17025 some important elements have been picked out to state the Interim requirements for quality management system at SHAMCI test labs.

3.2.1 Personnel

Person(s) in charge of testing (signature on test reports) shall have:

- at least **5 year's experience** with same or similar work

  or

- completed successfully a training course for test engineers which is recognized by the SHAMCI Network

He/she shall ensure the competence of all who operate specific equipment, perform tests and/or calibrations, evaluate results and contribute to test reports.

3.2.2 Test and calibration methods and method validation

The laboratory shall have instructions on the use and operation of all relevant equipment, and on the handling and preparation of items for testing and/or calibration, or both, where the absence of such instructions could jeopardize the results of tests and/or calibrations. All instructions, standards, manuals and reference data relevant to the work of the laboratory shall be kept up to date and shall be made readily available to personnel (see 4.3). Deviation from test and calibration methods shall occur only if the deviation has been documented, technically justified, authorized, and accepted by the customer.

NOTE International, regional or national standards or other recognized specifications that contain sufficient and concise information on how to perform the tests and/or calibrations do not need to be supplemented or rewritten as internal procedures if these standards are written in a way that they can be used as published by the operating staff in a laboratory. It may be necessary to provide additional documentation for optional steps in the method or additional details.

Testing laboratories shall have and shall apply procedures for estimating uncertainty of measurement. All equipment used for tests and/or calibrations, including equipment for subsidiary measurements (e.g. for environmental conditions) having a significant effect on the accuracy or validity of the result of the test, calibration or sampling shall be calibrated before being put into service. The laboratory shall have an established programme and procedure for the calibration of its equipment.

3.2.3 Equipment

The laboratory shall be furnished with all items of measurement and test equipment required for the correct performance of the tests (preparation of test items, processing and analysis of test data). See also section 2.

3.2.4 Measurement traceability

All equipment used for performance testing of solar collectors and solar water heaters having a significant effect on the accuracy or validity of the result of the test shall be calibrated before being put into service and then regularly (at least every year). The laboratory shall keep documentation for these calibrations and show this documentation to the SHAMCI certification body on request.

3.2.5 Assuring the quality of test results

Testing laboratories shall participate in inter-laboratory comparisons (Round-Robin testing) organised/ recognized by SHAMCI Network.

4 The testing report format and all other needed format

4.1 Test report format for solar collectors

The test report format for solar collectors shall follow requirements in ISO 9806 and SHAMCI scheme rules.

4.1.1 Requirements in ISO 9806

Requirements for the format for reporting ISO 9806 test results are given in ISO 9806 Annex A “Test reports”

4.1.2 Requirements in SHAMCI

It is required by SHAMCI to report the collector test results in a “Collector Datasheet” – see SHAMCI Scheme Rules, Annex C1 “Collector Data Sheet”

4.2 Test report format for solar water heaters

The test report format for solar water heaters shall follow requirements in EN 12976-2, ISO 9459-2 and ISO 9459-5 and SHAMCI scheme rules.

4.2.1 Requirements in EN 12976-2

Requirements for the format for reporting results of thermal performance testing according to EN 12976-2 (using ISO 9459-2 and ISO 9459-5) are given in EN 12976-2 Annex A “Thermal performance presentation sheet”

4.2.2 Requirements in SHAMCI

It is required by SHAMCI to report the soar water test results in a “System Datasheet” – see SHAMCI Scheme Rules, Annex C2 “Solar Water Heater Data Sheet”

5 Other relevant requested issues (e.g. authorization of the entity)

A test lab shall have recognition from a SHAMCI certification body for SHAMCI testing. The certification body shall check if the test lab fulfils the requirements in this document – based on an application documenting that the requirements are fulfilled.

The test lab is finally authorized for SHAMCI testing by the SHAMCI Network, based on a recommendation from a SHAMCI certification body – documentation from the test lab shall be available to all SHAMCI certification bodies upon request.
After 1st January 2021, the accreditation certificate of the test lab shall be published at the SHAMCI website.

6 References

[1] ISO 9806:2013 Solar energy — Solar thermal collectors — Test methods

[2] EN 12976-2:2006. Thermal solar systems components. Factory made systems. Test methods

[3] ISO 9459-2 :1995 Solar heating -- Domestic water heating systems -- Part 2: Outdoor test methods for system performance characterization and yearly performance prediction of solar-only systems

[4] ISO 9459-5:2007 Solar heating -- Domestic water heating systems -- Part 5: System performance characterization by means of whole-system tests and computer simulation

[5] EN 1717:2000 Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow

Annex 2. Proposal for SHAMCI certificate

SHAMCI CERTIFICATE

Licence no.	*SH-0123456*
Issuing date	*2015-12-31*
Expiry date	*2020-12-31*

Holder of licence	*Full legal name of licence holder*
Postal address	*Street, city, zip, country*
Product name	*Name of product(s)*
Type	*Collector / Solar water heater*
Appendix	*Data sheet SH-0123456*
Requirements	*The product/s are found to comply with the requirements in the SHAMCI Certification Scheme Rules for Solar Thermal Products*
Supervision	*The manufacturer's factory production control procedures are under surveillance by the responsibility of the Certification Body*
Information	*SHAMCI Certification, visit www.shamci.net. This certificate may not be reproduced other than in full, except with the written approval from the Certification Body*
Issued by	*Name of Certification Body*

Signature(s)	*Name Surname*	*Name Surname*
	Tittle	*Tittle*

Part 3 | Readiness criteria for SHAMCI Inspectors

1 Requirements for quality management system and staff qualifications at inspection bodies

1.1 Requirements from 2021

From 1st of January 2021 requirements for the quality management system and staff will be according to: IEC/ISO 17020.

1.2 Interim requirements until 2021

Person in charge of inspection (signature on inspection reports) shall be able to document at least five ISO 9001 inspections of at least three different production lines for different products.

2 Inspection process

The inspection body shall follow the procedure given in SHAMCI scheme rules Annex D “FACTORY PRODUCTION CONTROL - BASED ON ISO 9001 STANDARD COVERING THE PRODUCTION LINE”.

3 Report format for inspection reports

The report format for inspection reports given in SHAMCI scheme rules Annex E shall be followed.

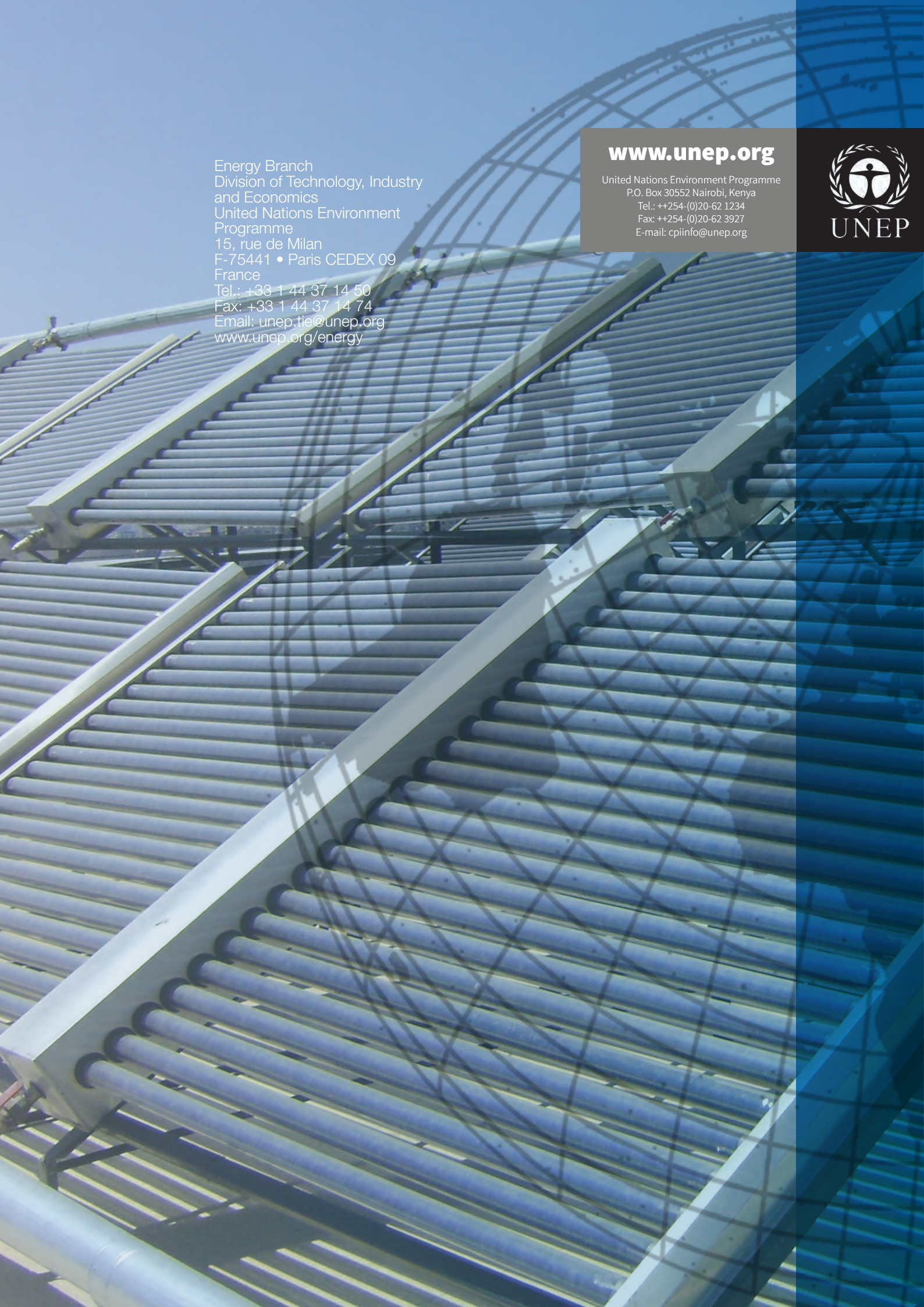
4 Other relevant requested issues (e.g. authorization of the entity)

An inspection body shall have recognition from a SHAMCI certification body for SHAMCI inspection. The certification body shall check if the inspection body fulfils the requirements in this document – based on an application documenting that the requirements are fulfilled.

Based on recommendation(s) from at least one SHAMCI certification body and check of requirements in section 1 done by the SHAMCI Manager, the SHAMCI Network authorizes the inspection body for SHAMCI inspection.

After 1st of January 2021, the accreditation certificate of the inspection body shall be published at the SHAMCI website.

For more information,
see www.unep.fr



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