

**BRL-K656/03**  
2012-02-01

# Evaluation guideline

for the Kiwa product certificate for  
heat exchangers intended for the indirect heating  
of drinking water



# Preface

This evaluation guideline has been accepted by the board of experts CWK of Kiwa, in which the parties concerned in the sector Drinkingwater appliances are being represented. This Board of Experts also supervises the certification activities and where necessary requires the evaluation guideline to be revised. All references to Board of Experts in this evaluation guideline pertain to the above mentioned Board of Experts.

This evaluation guideline will be used by Kiwa in conjunction with the Kiwa-Regulations for Product Certification. This regulation details the method employed by Kiwa for conducting the necessary investigations prior to issuing the product certificate and the method of external control.

This evaluation guideline is to be assessed by the Board of Experts at least every 5 years, but at the latests before 1<sup>st</sup> February 2017.

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The use of this evaluation guideline by third parties, for any purpose whatsoever, is only allowed after a written agreement is made with Kiwa to this end.

## **Validation**

This evaluation guideline has been validated by Kiwa on [01 February 2012].

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# 1 Introduction

## 1.1 General

This evaluation guideline includes all relevant requirements which are adhered to by Kiwa as the basis for the issue and maintenance of a certificate for Heatexchangers intended for the indirect heating of drinking water.

This evaluation guideline replaces BRL K656/02: 2001-08-24

For the performance of its certification work, Kiwa is bound to the requirements as included in the clause 4.6 "conditions and procedures for granting, maintaining, extending, suspending and withdrawing certification" of EN45011.

## 1.2 Field of application / scope

The products are intended to be applied in The products are intended to be used as/in in hot water installations with a working pressure of maximum.1 MPa (10 bar) and a water temperature of maximum 90 °C

**Remark:** The technical specifications to be fulfilled of the primary side will be established down in mutual agreement between supplier and user.

## 1.3 Acceptance of test reports provided by the supplier

When by the manufacturer reports from test Institutions or laboratories are produced in order to demonstrate that the product meets the requirements of this evaluation guideline, the institute or laboratory shall meet one of the applicable accreditation norms, being;

- NEN-EN-ISO/IEC 17025 for laboratories;
- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN 45011 for certification bodies certifying products;

This requirement is being considered to be fulfilled when a certificate of accreditation can be shown, either issued by the Board of Accreditation (RvA) or one of the institutions with which the RvA an agreement of mutual acceptance has been concluded.

The accreditation shall refer to the examination as required in this BRL. When no certificate of accreditation can be shown, Kiwa will verify whether the accreditation norm is fulfilled.

## 1.4 Quality declaration

The quality declarations to be issued by Kiwa are described as Kiwa product certificate. A model of the certificate to be issued on the basis of this Evaluation Guideline has been included as an Annex.

## 2 Terms and definitions

In this evaluation guideline the following terms and definitions are applicable:

**Evaluation Guideline:** the agreements made within the Board of Experts on the subject of certification.

**Board of Experts:** The Board of Experts "CWK".

**Supplier:** the party that is responsible for ensuring that the products meet and continue to meet the requirements on which the certification is based.

**IQC scheme:** a description of the quality inspections carried out by the supplier as part of his quality system.

**Product requirements:** requirements made specific by means of measures or figures, focusing on (identifiable) characteristics of products and containing a limiting value to be achieved, which limiting value can be calculated or measured in an unequivocal manner.

**Pre-certification tests:** tests in order to ascertain that all the requirements recorded in the Evaluation Guideline are met.

**Inspection tests:** tests carried out after the certificate has been granted in order to ascertain whether the certified products continue to meet the requirements recorded in the Evaluation Guideline.

### **Remark**

The test matrix contains a summary showing what tests Kiwa will carry out in the pre-certification stage and in the event of inspections as well as showing the frequency with which the inspection tests will be carried out.

**Product certificate:** a document, in which Kiwa declares that a product may, on delivery, be deemed to comply with the product specification recorded in the product certificate.

**Tap water** (origin Drinking Water Directive): water intended for drinking, cooking, food preparation or other domestic purposes.

**Drinking water:** water intended to be used for drinking purposes

**Pressure:** the effective pressure ( $p_e$ ): the difference between the absolute pressure ( $p$ ) and the ambient pressure ( $p_{amb}$ ). In formula form:  $p_e = (p - p_{amb})$ .

**Heat exchanger:** an appliance in which heat-exchange is carried out.

**Primary medium:** the heat-transfer medium.

**Primary side:** that side of the heat exchanger that comes into contact with the primary medium.

**Intermediate medium:** the medium, which in a double-partition heat exchanger is located between the walls separating the primary and secondary media.

**Intermediate zone:** The zone in between the primary and the secondary side that separates the primary medium and secondary medium from each other.

**Secondary medium:** the drinking water for heating.

**Secondary side:** that side of the heat exchanger that comes into contact with the drinking water.

**Hot water:** heated drinking water

**Hot water installation:** installation for the distribution of hot water.

**Single-partition heat exchanger:** a heat exchanger in which the primary and secondary media are separated by one wall.

**Double-partition heat exchanger:** a heat exchanger in which the primary and second media are completely separated by two walls.

**Working pressure:** the maximum pressure occurring under normal conditions in the drinking water installation or parts thereof.

## 3 Procedure for granting the quality declaration

### 3.1 Pre certification tests

The pre certification-tests to be performed are based on the (product) requirements as included in this evaluation guideline including the test methods and contain, depending on the nature of the product to be certified:

- type testing to determine whether the products comply with the product and/or functional requirements,
- Production Process Assessment
- Assessment of the quality system and the IQC-scheme,
- Assessment on the presence and functioning of the remaining procedure

### 3.2 Granting the quality declaration

After finishing the pre-certification tests the results are presented to the person deciding on granting of certificate. This person evaluates the results and decides whether the certificate can be granted or additional data and/or tests are necessary.

# 4 Requirements and test methods

## 4.1 General

This chapter contains the requirements the heat exchangers intended for the indirect heating for drinking water have to fulfil. These requirements will make part of the technical specification of the products, as included in the certificate.

## 4.2 Types

The manufactured heat exchangers covered by this evaluation guideline to be distinguished in:

- Heat exchangers with single partition
- Heat exchangers with double partition

### 4.2.1 *Single or double partition heat exchanger*

It shall be determined that the heat transfer in a heat exchanger between the heating (primary) medium and the heated (secondary) medium takes place by applying and single partition or double partition. This shall be determined according to clause 5.5.1.

Heat exchangers with double partition with a occurring leakage in one of the separation walls shall lead to a visual leakage signalling outside the heat exchanger within 300 s. This shall be determined according to clause 5.5.2.

### 4.2.2 *Heat exchangers with single partition*

Heat exchangers with a single partition shall meet all the, in this evaluation guide line, stated requirements excluded the requirements for heat exchangers with double partition as stated in clause 5.5.

### 4.2.3 *Heat exchangers with double partition*

Heat exchangers with double partition to be distinguished in:

#### 4.2.3.1 *Heat exchangers with liquid as intermediate medium*

If a liquid is used as intermediate medium the following requirements shall be met:

- The liquid shall not constitute a risk to public health. In the instructions for use the manufacturer shall indicate the liquid used and shall provide information the  $LD_{50} > 200 \text{ mg/kg}^1$ .
- The pressure of the liquid between the two partitions may not exceed 100 kPa at the lowest point of the heat exchanger.
- The materials of the partitions shall not corrode under the influence of the intermediate medium, the primary medium or the secondary medium with which they come into contact.

#### 4.2.3.2 *Heat exchangers where partition walls in contact with each other or connected to each other*

If thermal bridges are used, the following requirements shall be met:

- The space(s) between the two partitions shall be at atmospheric pressure.
- The materials of the walls and thermal bridges shall not corrode under the influence of the intermediate medium, the primary medium or the secondary medium with which they come into contact.
- The construction shall guarantee that leakage signalling is assumed. This shall be verified according to clause 5.5.

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<sup>1</sup> LD 50 is the abbreviation of Lethal Dosis 50%.

## 4.3 Materials

### 4.3.1 Requirements to avoid deterioration of the quality of the drinking water

Products and materials, which (may) come into contact with drinking water or warm tap water, shall not release substances in quantities which can be harmful to the health of the consumer or negatively affect the quality of the drinking water. Therefore, the products or materials shall meet the toxicological, microbiological and organoleptic requirements as laid down in the valid "Ministerial Regulation materials and chemicals drinking water and warm tap water supply" (published in the Government Gazette). Consequently the procedure for obtaining a recognised quality declaration, as specified in the valid Regulation, has to be concluded with positive results.

Products and materials with a quality declaration\*, e.g. issued by a foreign certification institute, are allowed to be used in the Netherlands, provided that the Minister has declared this quality declaration equivalent to the quality declaration as meant in the Regulation.

### 4.3.2 Chemical and mechanical requirements

#### 4.3.2.1 Corrosion resistance

The applied materials in contact with drinking water shall be corrosion-resistant or protected against corrosion. They shall not result in mutual corrosion.

#### 4.3.2.2 Corrosion resistant steel

Corrosion-resistant steel shall satisfy:

EN 10088-1 or EN 10088-2, with a quality equivalent to the following compositions:

- Material number 1.4401 X 2CrNiMo - 17 13 3 (AISI 316 L)
- Material number 1.4404 X 6CrNiMoTi - 17 12 2 (AISI 316 Ti)
- Material number 1.4571 X6CrNiMoTi 17 12 2 (AISI 316 Ti)
- Material number 1.4521 X2CrNiMoTi 18-2
- Material number 1.4301 X5CrNi18-10 (AISI 304) 1
- Material number 1.4521 X2CrMoTi18-2 (F 18 MT).

#### 4.3.2.3 Copper and copper alloys

Copper shall be de-oxidised copper Cu-DHP, with a high residual phosphorus content. Carbon contamination of the surface may not exceed 0.3 mg/dm<sup>2</sup>. And satisfy:

- EN 1982 Copper and copper alloys - Ingots and castings
- EN 12163 Copper and copper alloys - Rod for general purposes
- EN 12164 Copper and copper alloys - Rod for free machining purposes
- EN 12420 Copper and copper alloys - Forgings

**Remark:**

The lead content in lead containing copper alloys shall not exceed 3%.

#### 4.3.2.4 Steel

Steel shall be equivalent to S235JRG2, material number 1.0038 according to EN 10025-2.

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\* A quality declaration issued by an independent certification institute in another member state of the European Community than the Netherlands or another state party to the agreement to the European Economic Area, is equivalent to a recognised quality declaration, to the extent that, to the judgment of the Minister of the first mentioned quality declaration, is fulfilled the at least equivalent requirements as meant in the Regulation materials and chemicals drinking water- and warm tap water supply.

<sup>1</sup> Annealed piping for heat exchangers and connection ends only

#### 4.3.2.5 *Enamel coatings*

Enamel coatings shall satisfy DIN 4753, Part 3.

The cathodic protection to be applied shall be to DIN 4753, Part 6.

#### 4.3.2.6 *Rubber sealing materials*

Rubber sealing materials shall satisfy BRL-K 2013.

Natural rubbers (NR) and isoprene rubbers (IR) are not permitted.

#### 4.3.2.7 *Other materials*

If materials other than those indicated above are used, they shall be equivalent and be considered suitable for the purpose.

### **4.4 Construction and shape**

#### 4.4.1 *Internal configuration*

The internal configuration of the heat exchanger shall be granted that under normal operating conditions the water is refreshed and the conductivity of the water may not increase by more than 5 mS/m compared against the reference water.

This shall be examined according to clause 5.3.

#### 4.4.2 *Heat resistance*

The manufacturer shall indicate the temperature up to which the heat exchanger may be used.

#### 4.4.3 *Connection ends*

##### 4.4.3.1 *Strength*

If the connection ends are not prevented from turning loose or breaking off when connecting, these connection ends shall be so tested as to be resistant to a torque of 30 Nm for 300 s. After this test, the fixings of the connection ends to the heat exchanger shall not show any cracking and/or change of shape.

This shall be examined in accordance with clause 5.2.

##### 4.4.3.2 *Fittings*

Fittings shall satisfy the relevant requirements of Kiwa BRL-K623; 639 or 640.

#### 4.4.4 *Anodes*

If anodes are used, the construction and method of assembly of the anodes shall satisfy DVGW-Arbeitsblatt W 511.

### **4.5 Functional requirements**

#### 4.5.1.1 *Strength and sealing*

On the primary and secondary sides, the heat exchanger shall be resistant to the working pressure specified by the manufacturer.

Testing in accordance with clause 5.2 shall not result in any leakage, damage or permanent deformation.

#### 4.5.1.2 *Double partition*

Heat exchangers with double partition with a occurring leakage in one of the separation walls shall lead to a visual leakage signalling outside the heat exchanger within 300 s.

This shall be examined according to clause 5.5.2.

#### 4.5.1.3 *Bleeding*

The heat exchanger shall be bleedable on both the primary side and the secondary side.

#### 4.5.1.4 *Possibility of draining the heat-exchanger*

It shall be possible to drain the heat exchanger on both the primary side and the secondary side.

### **4.6 Finish**

By visual inspection it shall be verified that:

- The secondary site of the heat exchanger is cleaned and properly finished.
- Welding and soldering connections shall be smooth and sound of appearance. Welding specks shall be avoided.
- Welded products of corrosion resistance material their basis colour shall not be altered compared to the material before welding.

### **4.7 Marking**

Engraving or stickers shall provide the marking of the heat exchangers.

The endurance of stickers shall be examined according to EN 248. After the examination the stickers shall be tested on the aspects readability and adhesiveness

# 5 Test methods

## 5.1 Material

### 5.1.1 Enamel coatings

Test the enamel as described in DIN 4753, Part 3.

### 5.1.2 Magnesium anode

- a. Test the magnesium anode as described in DIN 4753, Part 6.
- b. Check whether the construction and assembly method satisfy DVGW-Arbeitsblatt W 511.

## 5.2 Strength of the connection ends

- a. To test the resistance of the connection end to forces and moments, the heat exchanger shall be installed in a test apparatus in which the required moment can be exerted on the mechanism.
- b. If required the connection ends of the heat exchanger can be provided with auxiliary equipment with which the moment can be exerted to the connection ends
- c. Apply a clockwise moment of 30 Nm to the connection ends perpendicular to connection end for a period of 300 seconds.

## 5.3 Determination of refreshing

- a. Measure the volume from the secondary side of the heat exchanger to be tested by filling it with water of ambient temperature, emptying and collecting the water.
- b. Repeat this procedure a three times and calculate the average volume.
- c. Measure the conductivity (mS/m) of the water in the test installation.
- d. Mix a test fluid with a conductivity of 100 mS/m and fill the heat exchanger with this test fluid.
- e. Execute ten tappings with the volume calculated in b and a velocity of 0,5 m/s related to the internal diameter of the connection end.
- f. Rinse the heat exchanger with water for 10 s with velocity of 0,5 m/s. Collect this water and determine the conductivity.

## 5.4 Strength and sealing properties

- a. The heat exchanger shall be installed in a test apparatus in which the required water pressure can be exerted to the heat exchanger.
- b. Flush the secondary side of the heat exchanger with a volumetric flow of water such that the air is removed.
- c. Close the exit aperture on the secondary side.
- d. Subject the secondary side of the heat-exchanger to a pressure gradually rising within 60 s from 0 kPa to 1.3 times the working pressure specified by the manufacturer and maintain this pressure for 900 s. The pressure is atmospheric on the primary side.
- e. Repeat paragraphs a to d for the primary side, the pressure on the secondary side being atmospheric.
- f. Check for leakage, damage and permanent deformation.

## 5.5 Verification of the safety aspects of double partition walls.

### 5.5.1 Establishing complete double partition

- a. Verify against the manufacturing drawings and/or necessarily section(s) if any spots are present where the partition walls are in contact with each other or connected to each other.
- b. Establish by evaluation that on these spots it is not possible to drill a hole through with a diameter of 2 mm without to drill into leakage detection channel(s).

### 5.5.2 *Establishing leakage signalling*

- a. Establish against the manufacturing drawings and/or necessarily sections on which spots an occurring leakage in the partition walls shall be seen and understood as critical in relation to the observed time in which leakage signalling via the intermediate zone shall occur.
- b. Drill a 2-mm diameter continuous hole through both partitions at the most critical location. Check that the access to the intermediate medium is not blocked by the drilling work.
- c. Fill the heat exchanger on both the primary and the secondary sides and subject both sides directly to a water-pressure of 50 kPa and maintain this pressure.
- d. Measure the time between reaching this pressure and the time at which leakage liquid is signalled.

# 6 Marking

## 6.1 General

The following data shall be clearly and permanently indicated on the heat exchanger:

- Trade mark/type or logo,
- Construction (single-partition/ double-partition),
- Secondary side wall material used,
- Intended purpose of use of the connection ends,
- Year of manufacture,
- Primary side working pressure,
- Secondary side working pressure,
- Designation of liquid intermediate medium,
- Maximum primary water temperature,
- Maximum secondary water temperature.

**Remark:** The type of connection ends may be also described in the installation instructions if it is ensured that no mistake can take place in between the primary and secondary side

**Remark:** The data in respect of heat exchangers, which are not visible (internal installation), shall be visible after removing the cover of the final appliance

## 6.2 Certification mark

After concluding a Kiwa certification agreement, the certified products shall be indelible marked with the certification mark **KIWA** .

# 7 Instructions

The manufacturer's instructions shall be supplied in the Dutch language with the heat exchanger.

These instructions shall cover at least the following aspects:

- possible applications,
- installation instructions,
- operating instructions,
- maintenance instructions,
- cleaning methods,
- bleeding the heat exchanger,
- draining the heat exchanger.

# 8 Requirements in respect of the quality system

This chapter contains the requirements which have to be met by the supplier's quality system.

## 8.1 Manager of the quality system

Within the supplier's organizational structure an employee must have been appointed who is in charge of managing the supplier's quality system.

## 8.2 Internal quality control/quality plan

The supplier shall have an internal quality control scheme (IQC scheme) which is applied by him.

The following must have been demonstrably recorded in this IQC scheme:

- what aspects are checked by the producer;
- according to what methods such inspections are carried out;
- how often these inspections are carried out;
- in what way the inspection results are recorded and kept.

This IQC scheme should at least be an equivalent derivative of the model IQC scheme included in the addendum.

## 8.3 Procedures and working instructions

The supplier shall be able to submit the following:

- procedures for:
  - dealing with products showing deviations;
  - corrective actions to be taken if non-conformities are found;
  - dealing with complaints about products and/or services delivered;
- the working instructions and inspection forms used.

## 9 Summary of tests and inspections

This chapter contains a summary of the following tests and inspections to be carried out in the event of certification:

- Pre-certification tests;
- Inspection test as to toxicological requirements and product requirements;
- Inspection of the quality system.

The frequency with which Kiwa will carry out inspection tests is also stated in the summary.

### 9.1 Test matrix

Description of requirement	Article BRL	Tests within the scope of		
		Pre-certification	Supervision by Kiwa after granting of certificate <sup>1)</sup> inspection <sup>2)</sup>	frequency (no./year)
<b>Material</b>				
Toxicological requirements				
Requirements to avoid deterioration of the quality of the drinking water	4.3.1	X	X	2
Chemical and mechanical requirements	4.3.2	X	X	2
<b>Design</b>				
Internal configuration	4.4.1	X		
Heat resistance	4.4.2	X		
Connection ends	4.4.3	X		
Anodes	4.4.4	X		
<b>Functional requirements</b>				
Strength and sealing	4.5.1.1	X	X	2
Double partition	4.5.1.2	X		
Bleeding	4.5.1.3	X		
Possibility of draining the heat-exchanger	4.5.1.4	X		
Finish	4.6	X	X	2
<b>Marking</b>				
General	6.1	X	X	2
Certification mark	6.2	X	X	2

Description of requirement	Article BRL	Tests within the scope of		
		Pre-certification	Supervision by Kiwa after granting of certificate <sup>1)</sup> inspection <sup>2)</sup>	frequency (no./year)
<b>Instructions</b> Instructions	7	X	X	1

<sup>1)</sup> In case of significant changes of the product or production process, compliance of the product to the performance requirements shall be determined

<sup>2)</sup> Inspections as indicated are to be conducted by the inspector or by the manufacturer, whether or not in presence of the inspector.

## 9.2 Inspection of the quality system

The quality system will be checked by Kiwa on the basis of the IQC scheme.

The inspection contains at least those aspects mentioned in the Kiwa Regulations for Product certification.

# 10 Agreements on the implementation of certification

## 10.1 General

Beside the requirements included in these evaluation guidelines, also the general rules for certification as included in the Kiwa Regulations for Product Certification apply.

These rules are in particular

- The general rules for conducting the pre-certification tests, to be distinguished in:
  - the way suppliers are to be informed about an application is being handled,
  - how the test are conducted,
  - the decision to be taken as a result of the pre certification tests.
- The general directions for conducting inspections and the aspects to be audited,
- The measurements to be taken by Kiwa in case of Non Conformities,
- Measurements taken by Kiwa in case of improper Use of Certificates, Certification Marks, Pictograms and Logos,
- Terms for termination of the certificate,
- The possibility to lodge an appeal against decisions of measurements taken by Kiwa.

## 10.2 Certification staff

The staff involved in the certification may be sub-divided into:

- certification experts: they are in charge of carrying out the pre-certification tests and assessing the inspectors' reports;
- inspectors: they are in charge of carrying out external inspections at the supplier's works;
- decision-makers: they are in charge of taking decisions in connection with the pre-certification tests carried out, continuing the certification in connection with the inspections carried out and taking decisions on the need to take corrective actions.

### 10.2.1 Qualification requirements

The following qualification requirements have been set by the Board of Experts for the subject matter of this Evaluation Guideline:

EN45011	Certification Expert	Inspector	Decision maker
<b>Education - general</b>	<ul style="list-style-type: none"> <li>• Technical higher-level professional education</li> <li>• Internal training certification and Kiwa policy</li> <li>• Training auditing</li> </ul>	<ul style="list-style-type: none"> <li>• Intermediate-level professional education</li> <li>• Internal training certification and Kiwa policy</li> <li>• Training auditing</li> </ul>	<ul style="list-style-type: none"> <li>• Higher level professional education</li> <li>• Internal training certification and Kiwa policy</li> <li>• Training auditing</li> </ul>
<b>Education - specific</b>	<ul style="list-style-type: none"> <li>• for BRL relevant technical education</li> <li>• specific studies and training (know-how and skills)</li> </ul>	<ul style="list-style-type: none"> <li>• for BRL relevant technical education</li> <li>• specific studies and training (know-how and skills)</li> </ul>	<ul style="list-style-type: none"> <li>• not applicable unless specific requirements have been specified by the BoE</li> </ul>
<b>Experience - general</b>	<ul style="list-style-type: none"> <li>• 1 year of relevant work experience with at least 4 pre certification tests of which one carried out independent under supervision.</li> </ul>	<ul style="list-style-type: none"> <li>• 1 year of relevant work experience with at least 4 inspections of which one carried out independent under supervision</li> </ul>	<ul style="list-style-type: none"> <li>• 4 year of relevant work experience with at least 1 year in certification</li> </ul>

EN45011	Certification Expert	Inspector	Decision maker
<b>Experience - specific</b>	<ul style="list-style-type: none"> <li>Detailed knowledge of the BRL and 4 certification tests carried out on the basis of the BRL or one related.</li> </ul>	<ul style="list-style-type: none"> <li>Detailed knowledge of the BRL and 4 inspections carried out on the basis of the BRL or one related.</li> </ul>	<ul style="list-style-type: none"> <li>general knowledge of the BRL</li> </ul>

The level of education and the experience of the certification staff involved should be demonstrably recorded.

### 10.2.2 *Qualification*

The qualification of the Certification staff shall be demonstrated by means of assessing the education and experience to the requirements mentioned before. In case staff is to be qualified on the basis of deflecting criteria, written records shall be kept.

The authority to qualify staff is dedicated to:

- decision makers: qualification of certification experts and inspectors,
- Management of Kiwa: qualification of decision makers.

### 10.3 **Report Pre certification tests**

Kiwa records the results of the pre certification tests in a report. This report shall comply with the following requirements:

- completeness: the reports verdicts about all requirements included in the evaluation guideline,
- traceability: the findings on which the verdicts have been based shall be recorded traceable,
- basis for decision: the decision maker shall be able to base his decision on the findings included in the report.

### 10.4 **Decision for granting the certificate**

The decision for granting the certificate shall be made by a qualified decision maker which has not been involved in the pre certification tests. The decision shall be recorded traceable.

### 10.5 **Lay out of quality declaration**

The product certificate shall conform the model included as an annex

### 10.6 **Nature and frequency of external inspections**

The certification body shall carry out Audits at the supplier at regular intervals to check whether the supplier complies with his obligations. About the frequency of inspections the Board of Experts decides. At the time this Evaluation Guideline took effect, the frequency was set at number of 2 inspection visits per year.

Inspections shall at least refer to:

- The suppliers IQC-scheme and the results obtained from inspections carried out by the supplier,
- The correct way of marking of certified products
- Complying with required procedures.

The results of each inspection shall be traceable recorded in a report.

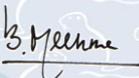
### 10.7 **Interpretation of requirements**

The Board of Experts may record the interpretation of requirements of these evaluation guidelines in one separate interpretation document.

## 11 Titles of standards

BRL-K 623	Fittings, couplings and parts for solder and screw joints with copper pipes
BRL-K 639	Fittings with compression ends for use with copper tubes
BRL-K 640	Compression and press fittings making part of appliances and installations, for connecting copper pipes in drinking water installations
BRL-K 2013	Vulcanized rubber pipe joint seals for potable water and waste water.
DIN 4753, Teil 1	Wasserwärmer und Wasser verwärmungsanlagen für Trink- und Betriebswasser; Anforderungen, Kennzeichnung, Ausrüstung und Prüfung
DVGW, Arbeitsblatt GW 2	DVGW-Arbeitsblatt; Gasversorgung/Wasserversorgung Rhrnets/Installation/Kupferrohe; verbinden von Kupferrohren für die Gas- und Wasser innerhalb von Grundstücken und Gebäuden.
DVGW, Arbeitsblatt W 511	Güte- und Prüfbestimmungen für den Trinkwasserseitigen Korrosionsschutz von Warwasserbereitern aus Stahl durch Emaillierung
EN 1982	Copper and copper alloys - Ingots and castings
EN 10025-1	Hot Rolled products of non-alloy structural steels - Part 1; General delivery conditions
EN 10088-1	Steenless steel - Part 1, Lis of stainless steels
EN 10088-2	Stainless steels - Part 2; Technical deliverey condtions for sheet/plate en strip
EN 12163	Copper and copper alloys - Rod for general purposes
EN 12164	Copper and copper alloys - Rod for free machining purposes
EN 12420	Copper and copper alloys - Forgings
Government gazette 18 july 2012	Guideline regarding the quality of materials and chemicals for the drinking water supply

# I Model certificate

<b>Certificate</b>	Product certificate <b>KXXXXXXX/OX</b>	 Partner for progress
	Issued	
	Replaces	
	Page	1 of 2
<b>Heat exchangers intended for the indirect heating of drinking water</b>		
<b>STATEMENT BY KIWA</b> With this product certificate, issued in accordance with the Kiwa Regulations for Product Certification, Kiwa declares that legitimate confidence exists that the products supplied by <b>Name supplier</b> complying with the technical specifications as laid down in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate, on delivery, may be relied upon to comply with Kiwa evaluation guideline BRL-K'656/03", dated 2013-02-01.		
 Bouke Meekma Kiwa		
Publication of the certificate is allowed. Advice: consult <a href="http://www.kiwa.nl">www.kiwa.nl</a> in order to ensure that this certificate is still valid.		
<b>Kiwa Nederland B.V.</b> Sir W. Churchill-laan 273 Postbus 70 2280 AB RIJSWIJK The Netherlands Tel. +31 70 414 44 00 Fax +31 70 414 44 20 E-mail <a href="mailto:info@kiwa.nl">info@kiwa.nl</a> <a href="http://www.kiwa.nl">www.kiwa.nl</a>	<b>Supplier</b>	<b>Certification process consists of initial and regular inspection of:</b> <ul style="list-style-type: none"><li>• quality system</li><li>• product</li></ul>

## II Model IQC-scheme

Subjects	Aspects	Method	Frequency	Registration
Raw materials or materials supplied <ul style="list-style-type: none"> <li>• Incoming goods inspection raw materials</li> <li>• Installation components</li> <li>• Packing materials</li> <li>• Semi manufactured products</li> </ul>	Purchase specifications Materials Measurements Appearance Sub-supplier			
Production process, production equipment, plant: <ul style="list-style-type: none"> <li>• Machining of components</li> <li>• Assembly</li> <li>• Welding equipment</li> <li>• Factory equipment</li> <li>• Soldering oven</li> </ul>	Temperatures Solderingmaterial Colour deviations Pressures Appearance			
Finished-products <ul style="list-style-type: none"> <li>• Appearance</li> <li>• Marking</li> <li>• Functional aspects               <ul style="list-style-type: none"> <li>• Watertightness</li> <li>• Double partition</li> </ul> </li> </ul>				
Measuring and testing equipment <ul style="list-style-type: none"> <li>• Measuring means</li> <li>• Calibration</li> <li>• Test equipment</li> </ul>				
Logistics <ul style="list-style-type: none"> <li>• Internal transport</li> <li>• Storage</li> <li>• Packaging</li> <li>• Preservation</li> <li>• Identification or marking of semi-manufactures and end-products</li> </ul>				