

BRL-K656

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Concept design

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 Kiwa Board of Experts Watercycle (CWK), in which all relevant parties in the field of heat exchangers intended for the indirect heating for drinking water are represented. The 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 Certification.

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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.

Binding declaration

This evaluation guideline has been declared binding by Kiwa on **Date**

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1 Introduction

1.1 General

This evaluation guideline includes all relevant requirements which are employed by Kiwa when dealing with applications for the issue and maintenance of a certificate for Heat exchangers intended for the indirect heating of drinking water.

This guideline replaces BRL-K656/03, dated 2012-02-01.

The quality declarations issued and based on that guideline will lose their validity at least 2 years after validation of this BRL.

For the performance of its certification work, Kiwa is bound to the requirements as included in NEN-EN-ISO/IEC 17065 “Conformity assessment - Requirements for bodies certifying products, processes and services”.

1.2 Field of application / scope

The products are intended to be used 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

If the supplier provides reports from test institutions or laboratories to prove that the products meet the requirements of this evaluation guideline, the supplier shall prove that these reports have been drawn up by an institution that complies with the applicable accreditation standards, namely:

- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN-ISO/IEC 17021-1 for certification bodies certifying systems;
- NEN-EN-ISO/IEC 17024 for certification bodies certifying persons;
- NEN-EN-ISO/IEC 17025 for laboratories;
- NEN-EN-ISO/IEC 17065 for certification bodies certifying products.

Remark:

This requirement is considered to be fulfilled when a certificate of accreditation can be shown, issued either by the Board of Accreditation (RvA) or by one of the institutions with which an agreement of mutual acceptance has been concluded by the RvA. The accreditation shall refer to the examinations as required in this evaluation guideline. When no certificate of accreditation can be shown, Kiwa shall verify whether the accreditation standard is fulfilled.

1.4 Quality declaration

The quality declaration to be issued by Kiwa is described as a Kiwa product certificate.

A model of the certificate to be issued on the basis of this evaluation guideline has been included for information as Annex.

2 Terms and definitions

2.1 Definitions

In this evaluation guideline, the following terms and definitions apply:

- **Board of Experts:** the Board of Experts Watercycle (CWK);
- **Certification mark:** a protected trademark of which the authorization of the use is granted by Kiwa, to the supplier whose products can be considered to comply on delivery with the applicable requirements and possibly with quality information on the application of the product is added by a specially designed label which is based on the result, as stated in the report issued by Kiwa on the inspection of the prototype;
- **Double-partition heat exchanger:** a heat exchanger in which the primary and second media are completely separated by two walls;
- **Drinking water:** water intended or partly intended for drinking, cooking or food preparation or other domestic purposes, with the exception of hot tap water, which is made available to consumers or other customers by means of pipe lines (source Dutch Drinking Water Act);
- **Drinking water installation:** an installation direct or in-direct connected to the public drinking water distribution network of a drinking water company (source Dutch Drinking Water Act);
- **Evaluation Guideline (BRL):** the agreements made within the Board of Experts on the subject of certification;
- **Heat exchanger:** a device where heat exchange takes place between the primary and secondary medium;
- **Hot tap water:** water intended or partly intended for drinking, cooking or food preparation or other domestic purposes, which is heated before it is made available for those applications (source Dutch Drinking Water Act);
- **Hot tap water installation:** installation for the distribution of hot tap water;
- **House hold water:** Potable water which does not comply with the demands of Drinking water and which may only be used within premises for flushing toilets (source Dutch Drinking Water Act);
- **Installation:** configuration consisting the pipe work, fittings and appliances;
- **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;
- **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;
- **IQC scheme (IQCS):** a description of the quality inspections carried out by the supplier as part of his quality system;
- **Initial investigation:** tests in order to ascertain that all the requirements recorded in the evaluation guideline are met;
- **Leak detection system:** Includes all equipment needed to detect a leak. (man components may include the interstitial space, leak protection liners, leak protection jacket, leak indication device, leak detector, system piping, leak detection media, monitoring wells or sensors);
- **Pressure:** the effective pressure (p_e): the difference between the absolute pressure (p) and the ambient pressure (p_{amb}). In formula form: $p_e = (p - p_{amb})$.
- **Primary medium:** the heat-transfer medium;
- **Primary side:** that side of the heat exchanger which comes into contact with the primary medium;

- **Private Label Certificate:** A certificate that only pertains to products that are also included in the certificate of a supplier that has been certified by Kiwa, the only difference being that the products and product information of the private label holder bear a brand name that belongs to the private label holder;
- **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;
- **Product requirements:** requirements made specific by means of measures or figures, focussing on (identifiable) characteristics of products and containing a limiting value to be achieved, which can be calculated or measured in an unequivocal manner;
- **Secondary medium:** the drinking water to be heated;
- **Secondary side:** that side of the heat exchanger which comes into direct contact with the hot tap water;
- **Single-partition heat exchanger:** a heat exchanger in which the primary and secondary media are separated by one wall;
- **Supplier:** the party that is responsible for ensuring that the products meet and continue to meet the requirements on which the certification is based;
- **Tap water:** water intended for drinking, cooking or food preparation or other domestic purposes.
Remark: Tap water can be drinking water, hot tap water or house hold water;
- **Working pressure:** the maximum pressure occurring under normal conditions in the drinking water installation or parts thereof;

3 Procedure for granting a product certificate

3.1 Initial investigation

The initial investigation to be performed are based on the (product) requirements as contained in this evaluation guideline, including the test methods, and comprises the following:

- 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 procedures.

3.2 Granting the product certificate

After finishing the initial investigation, the results are presented to the Decision maker (see 10.2) deciding on granting the certificate. This person evaluates the results and decides whether the certificate can be granted or if additional data and/or tests are necessary.

3.3 Investigation into the product and/or performance requirements

Kiwa will investigate the to be certified products against the certification requirements as stated in the certification requirements.

The necessary samples will be drawn by or on behalf of Kiwa.

3.4 Production process assessment

When assessing the production process, it is investigated whether the producer is capable of continuously producing products that meet the certification requirements. The evaluation of the production process takes place during the ongoing work at the producer.

The assessment also includes at least:

- The quality of raw materials, half-finished products and end products;
- Internal transport and storage.

3.5 Contract assessment

If the supplier is not the producer of the products to be certified, Kiwa will assess the agreement between the supplier and the producer.

This written agreement, which is available for Kiwa, includes at least:

- Accreditation bodies, scheme managers and Kiwa will be given the opportunity to observe the certification activities carried out by Kiwa or on behalf of Kiwa at the producer.

4 Requirements

4.1 General

This chapter contains the requirements that heat exchangers intended for the indirect heating of drinking water have to fulfil.

4.2 Regulatory requirements

4.2.1 *Electrotechnical safety*

Applied electronic equipment shall comply with the Low Voltage Directive, which aims to ensure that electrical equipment on the market meets the requirements that provide a high level of protection of the health and safety of persons as well as the Electromagnetic Compatibility Directive, which limits the power of equipment to function satisfactorily in its electromagnetic environment without itself creating electromagnetic disturbances that are inadmissible by other equipment in that environment.

4.2.2 *Requirements to avoid deterioration of the quality of 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 toxicological, microbiological and organoleptic requirements as laid down in the currently applicable "Ministerial Regulation materials and chemicals drinking water and warm tap water supply", (published in the Government Gazette). Consequently, the procedure for obtaining a recognized quality declaration, as specified in the currently effective Regulation, has to be concluded with positive results.

Products and materials with a quality declaration¹, 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 Product requirements

4.3.1 *Hygienic treatment of products in contact with drinking water*

The supplier shall have a procedure in place that protects the products in such way, that the hygiene is ensured during storage and transport.

In addition, the supplier shall inform the customer about the handling of products delivered under the certificate, which come into contact with drinking water and warm tap water, from arriving at the construction site through to the realization and commissioning. The primary reason for providing this the information is to contribute to the awareness of the importance of hygienic work as a 'prevention measure'.

4.4 Types

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

- Heat exchangers with single partition,
- Heat exchangers with double partition.

¹ A quality declaration issued by an independent certification institute in another member state of the European Community or another state party to the agreement to the European Economic Area, is equivalent to a recognized 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.

4.4.1 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 to be heated drinking water (secondary medium) takes place by applying and single partition or double partition. This shall be determined according to article 5.6.1.

4.4.1.1 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 article 5.6.

4.4.1.2 Heat exchangers with double partition

Heat exchangers with double partition to be distinguished in 2 types, namely:

- *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 the LD₅₀> 200 mg/kg information¹;
 - 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.

- *Heat exchangers where partition walls in contact with each other or connected to each other 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 be such that leak detection is guaranteed. This shall be verified according to article 5.6.

4.4.1.3 Leak detection system

In heat exchangers with a double partition, an occurring leakage in a partition shall lead to a leakage signal which is visually or acoustically perceptible within 300 seconds after the leakage has occurred.

This shall be determined in accordance with article 5.6.2.

4.4.2 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.

¹ In this case, LD₅₀ means: Lethal Dose 50%;

This concerns the orally administered dose of the dangerous substance that is required to kill 50% of the target group (rats or rabbits) within a certain time. For the determination of toxicity, this method is currently used only in exceptional cases to actually test animals. Instead, a calculation method is used that can simulate the effects of the original experiments.

Incidentally, the LD₅₀ method is under discussion because the division between harmful and dangerous is not fully endorsed by experts. The method is currently the only one that offers the desired practical aid to be able to classify solutions and mixtures in particular quickly and unambiguously and as such is also described in: Community document 93/21 / EEC of 27 April 1993.

4.4.2.1 *Corrosion resistant protective layers*

Where applicable, the applied corrosion-resistant protective layers and paint systems shall comply with the requirements of Kiwa evaluation guideline BRL-K759 "Coating systems for drinking water installations".

Note:

If a coating is applied that is included in a Kiwa product certification agreement in accordance with BRL-K759/01, this condition is deemed to have been met.

4.4.2.2 *Enamel coating*

Enamel coating shall comply with DIN 4753, Part 3.

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

4.4.3 **Rubber sealing materials**

Rubber sealing materials shall comply with BRL-K2013.

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

4.4.4 **Other materials**

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

4.5 **Construction and shape**

4.5.1 **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 article 5.3.

4.5.2 **Heat resistance**

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

4.5.3 **Strength**

Connection ends shall withstand a torque of 30 Nm for 300 seconds.

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 article 5.2.

4.5.4 **Connection ends with fittings**

The connection ends of the heat exchanger consisting of fittings intended for direct connection to the tap water installation shall comply with the relevant requirements of Kiwa BRL-K623; K639; K640 or K536.

4.5.5 **Connection ends with flanges**

The connection ends of the heat exchanger consisting of flanges intended for direct connection to the tap water installation shall comply with the applicable part of EN 1092.

4.5.6 Anodes

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

4.6 Functional requirements

4.6.1 Strength and sealing

On the primary and secondary sides, the heat exchanger shall be resistant to the working pressure specified by the manufacturer, without any leakage, damage or permanent deformation.

This shall be examined in accordance with article 5.4.

4.6.2 Durability

During testing in accordance with article 5.5, the heat exchanger shall continue to comply with article 4.6.1.

4.6.3 Double partition

Heat exchangers with double partition with a occurring leakage in one of the separation walls shall lead to a leakage signal, in such a way that a leakage is visually or acoustically perceptible after a maximum of 300 seconds.

This shall be examined according to article 5.6.2.1 or 5.6.2.2.

4.7 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 shall not be discolored compared to the material before welding.

4.8 Energy performance measurement

The energy performance coefficient of heat exchangers that are used for heat recovery from shower water shall be determined in accordance with NEN 7120. This standard will remain effective until January 1st, 2020 and will be replaced (via legislation) by NTA 8800.

5 Test methods

5.1 Materials

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 comply with 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. Clamp the heat exchanger, if necessary with the aid of a tool, in the testing device. 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 Duurzaamheid

- a. The heat exchanger shall be installed in a test apparatus;
- b. Fill the test setup with water, vent it and close the vent opening;
- c. Load the test setup evenly within 5 seconds to operating pressure;
- d. Reduce the pressure to 5 bar evenly within 5 seconds and keep the pressure at this pressure for 5 seconds;
- e. Increase the pressure to the working pressure evenly within 5 seconds and keep the pressure at this pressure for 5 seconds;
- f. Repeat paragraphs (b) up and including 20.000 times;
- g. No leakage or deformation may occur during the determination.

5.6 Verification of the safety aspects of double partition walls.

5.6.1 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). At the discretion of Kiwa, this can be checked by means of destructive material testing.

5.6.2 Establishing functioning leak detection system

One of the following test methods is applied in accordance of the leak detection system used by the supplier.

5.6.2.1 Method 1.

- 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.

5.6.2.2 Method 2.

Carry out the test according to EN 13160-4: 5.1.2.1, with the understanding

- a. That the test will be performed with water;
- b. Install the leak detection system in the double partition of the heat exchanger;
- c. Fill the system to be tested with water;
- d. Measure the time between simulating the leak and triggering the alarm.

6 Marking

6.1 General

The following marking shall be clearly and permanently indicated on the heat exchanger, by engraving or stickers:

- 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;
- Marking of the primary and secondary connection ends.

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.

6.2 Durability stickers

The stickers will be securely attached and made of permanent adhesive materials. The print will be indelible and legible.

According to EN 60335-1, article 7.14:

The markings required by the standard shall be clearly legible and durable. Compliance is checked by inspection and by rubbing the mark by hand with a cloth soaked in water for 15 seconds and again with a cloth soaked with light petroleum for 15 seconds. The petroleum ether to be used for the test is aliphatic hexane solvent. After all tests of this standard, the marking shall be clearly legible. Marking plates shall not be easy to remove and shall not curl.

6.3 Certification mark

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

For products which come in contact with drinking water:

The Kiwa Water 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 who will be in charge of managing the supplier's quality system must have been appointed.

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 be demonstrably recorded in this IQC scheme:

- which aspects are checked by the supplier;
- 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 as shown in the Annex.

8.3 Control of test and measuring equipment

The supplier shall verify the availability of necessary test and measuring equipment for demonstrating product conformity with the requirements in this evaluation guideline.

When required the equipment shall be kept calibrated (e.g recalibration at interval).

The status of actual calibration of each equipment shall be demonstrated by traceability through an unique ID.

The supplier must keep records of the calibration results.

The supplier shall review the validity of measuring data when it is established at calibration that the equipment is not suitable anymore.

8.4 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.

8.5 Other requirements

The supplier shall be able to submit the following:

- the organisation's organogram;
- qualification requirements of the personnel concerned.

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:

- **initial investigation:** tests in order to ascertain that all the requirements recorded in the evaluation guideline are met;
- **inspection test:** 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;
- **inspection of the quality system of the supplier:** monitoring compliance of the IQC scheme and procedures.

9.1 Test matrix

Description of requirement	Article no. of BRL	Tests within the scope of:	
		Pre-certification	Inspection by Kiwa after granting of certificate a,b)
Material			
Requirements to avoid deterioration of the quality of the drinking water	4.3.1	X	X
Design and implementation			
Internal configuration	4.5.1	X	
Heat resistance	4.5.2	X	
Strength	4.5.3	X	
Connection ends with fittings	4.5.4	X	X
Connection ends with flanges	4.5.5	X	X
Anodes	4.5.6		
Functional requirements			
Strength and sealing	4.6.1	X	X
Double partition	4.6.3	X	X
Finish	4.7	X	X
Energy performance measurement	4.8	X	X
Certification mark and instructions			
Durability stickers	6.2	X	X
General	6.1	x	X
Certification mark	6.3	X	X
Instructions	7	X	X

a) In case the product or production process changes, it must be determined whether the performance requirements are still met.

b) During the inspection tests, the inspector verifies the products on basis of a selection from the above mentioned product requirements. The frequency of inspection visits is defined in chapter 10.6 of this evaluation guideline.

9.2 Inspection of the quality system of the supplier

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

The inspection contains at least those aspects mentioned in the Kiwa Regulation for Certification.

10 Agreements on the implementation of certification

10.1 General

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

- the general rules for conducting the pre-certification tests, in particular:
 - the way suppliers are to be informed about how 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 rules for conducting inspections and the aspects to be audited,
- the measures to be taken by Kiwa in case of Non-Conformities,
- the measures 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 measures taken by Kiwa.

10.2 Certification staff

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

- Certification assessor (**CAS**): in charge of carrying out the pre-certification tests and assessing the inspectors' reports;
- Site assessor (**SAS**): in charge of carrying out external inspections at the supplier's works;
- Decision maker (**DM**): 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 qualification requirements consist of:

- qualification requirements for personnel of a certification body which satisfies the requirements EN ISO / IEC 17065, performing certification activities
- qualification requirements for personnel of a certification body performing certification activities set by the Board of Experts for the subject matter of this evaluation guideline

Education and experience of the concerning certification personnel shall be recorded demonstrably.

Basic requirements	Evaluation criteria
Knowledge of company processes Requirements for conducting professional audits on products, processes, services, installations, design and management systems.	<i>Relevant experience: in the field</i> SAS, CAS : 1 year DM : 5 years inclusive 1 year with respect to certification Relevant technical knowledge and experience on the level of: SAS : High school CAS, DM : Bachelor

Basic requirements	Evaluation criteria
Competence for execution of site assessments. Adequate communication skills (e.g. reports, presentation skills and interviewing technique).	SAS: Kiwa Audit training or similar and 4 site assessments including 1 autonomic under review.
Execution of initial examination	CAS: 3 initial audits under review.
Conducting review	CAS: conducting 3 reviews

Technical competences	Evaluation Criteria
Education	General: Education in one of the following technical areas: <ul style="list-style-type: none"> • Civil Engineering; • Engineering.
Testing skills	General: <ul style="list-style-type: none"> • 1 week laboratory training (general and scheme specific) including measuring techniques and performing tests under supervision ; • Conducting tests (per scheme).
Experience - specific	CAS <ul style="list-style-type: none"> • 2 complete applications (excluding the initial assessment of the production site) under the direction of the CAS • 1 complete application self-reliant (to be evaluated by PM) • 2 initial assessments of the production site under the direction of the PM • 1 initial assessment of the production site self-reliant (witnessed by PM) SAS <ul style="list-style-type: none"> • 5 inspection visits conducted self-reliant (witnessed by PM)
Skills in performing witnessing	PM Internal training witness testing

Legenda:

- Certification assessor (**CAS**)
- Decision maker (**DM**)
- Product manager (**PM**)
- Site assessor (**SAS**)

10.2.2 Qualification

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

The authority to qualify staff rests with the:

- PM: qualification of CAS and SAS;
- management of the certification body: qualification of DM.

10.3 Report initial investigation

The certification body records the results of the initial investigation in a report.

This report shall comply with the following requirements:

- completeness: the report provides a verdict about all requirements included in the evaluation guideline;
- traceability: the findings on which the verdicts have been based shall be recorded and traceable;
- basis for decision: the DM 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 in a traceable manner.

10.5 Layout of quality declaration

The product certificate shall be in accordance with the model included in the Annex.

10.6 Nature and frequency of third party audits

The certification body shall carry out surveillance audits on site at the supplier at regular intervals to check whether the supplier complies with his obligations. The Board of Experts decides on the frequency of audits.

At the time this BRL entered into force, the frequency of audits amounts 2 audit(s) on site per year for suppliers with a quality management system in accordance with ISO 9001 for their production, which has been certified by an acknowledged body (in accordance with ISO/IEC 17021) and where the IQC scheme forms an integral part of the quality management system.

In case the supplier is not in possession of any product certificate (issued by Kiwa or any other accredited certification body), the frequency is increased to 3 visits for the duration of one year.

The audit program on site shall cover at least:

- the product requirements;
- the production process;
- the suppliers IQC scheme and the results obtained from inspections carried out by the supplier;
- the correct way of marking certified products;
- compliance with required procedures;
- handling complaints about products delivered.

For suppliers with a private label certificate the frequency of audits amounts to one audit per 2 years. These audits are conducted at the site of the private label certificate holder. The audits are conducted at the site of private label holder and focussed on the aspects inserted in the IQC scheme and the results of the control performed by the private label holder. The IQC scheme of the private label holder shall refer to at least:

- the correct way of marking certified products;
- compliance with required procedures for receiving and final inspection;
- the storage of products and goods;
- handling complaints.

The results of each audit shall be recorded by Kiwa in a traceable manner in a report.

10.7 Non conformities

When the certification requirements are not met, measures are taken by Kiwa in accordance with the sanctions policy as written in the Kiwa Regulation for Certification.

The Sanctions Policy is available page on the Kiwa website.

10.8 Report to the Board of Experts

De certification body shall report annually about the performed certification activities.

In this report the following aspects are included:

- mutations in number of issued certificates (granted/withdrawn);
- number of executed audits in relation to the required minimum;
- results of the inspections;
- required measures for established Non-Conformities;
- received complaints about certified products.

10.9 Interpretation of requirements

The Board of Experts may record the interpretation of requirements of this evaluation guideline in one separate interpretation document.

10.10 Specific rules set by the Board of Experts

The Board of Experts may define the following specific rules. These rules shall be followed by the certification body.

11 Titles of standards

11.1 Public law rules

2014/35/EU	Directive on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment intended for use within certain voltage limits (LVD)
2014/30/EU	Electromagnetic Compatibility (EMC) Directive
BJZ2011048144	Regeling van de Staatssecretaris van Infrastructuur en Milieu ¹
29 June 2011	

11.2 Standards / normative documents

Number	Title
BRL-K623	Plumbing fittings for capillary soldering and/or thread connections to copper tubes
BRL-K639	Fittings with compression ends for use with copper tubes
BRL-K640	Fittings to be tightened with matching compression tool, compression- and push fit fittings as part of appliances and installations
BRL-K759	Coating systems for drinking water applications
BRL-K17504	Vulcanized rubber products for cold and hot drinking water applications
DIN 4753, Teil 3	Water heaters, water heating installations and storage water heaters for drinking water – Part 3: Corrosion protection on the water side by enameling and cathodic protection – Requirements and testing
DIN 4753, Teil 6	Water heating installations for drinking water and service water; cathodic corrosion protection of enameled steel containers; requirements and testing
DVGW, Arbeitsblatt W 511	Drinking water installations in buildings and Legionella
NEN 7120	Energy performance of buildings - Assessment methods - until 2019-12-31
NTA 8800	Energy performance of buildings - Determination methods - from 2020-01-01
EN 248	Sanitary taps - General requirement for electroplated chromium nickel layers
EN 1092	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated
EN 13160-1	Leak detection systems - Part 1: General Principles
EN 13160-4	Leak detection systems - Part 4: Requirements and test/assessment methods for sensor based leak detection systems
93/2/EEC	Adapting to technical progress for the 18 th time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances
NEN-EN ISO/IEC 17020	Conformity assessment - General criteria for the operation of various types of bodies performing inspection
NEN-EN ISO/IEC 17021	Conformity assessment - Requirements for bodies providing audit and certification of management systems
NEN-EN ISO/IEC 17024	Conformity assessment - General requirements for bodies operating certification of persons
NEN-EN ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
NEN-EN ISO/IEC 17065	Conformity assessment - Requirements for bodies certifying products, processes and services

¹ Valid from 1 July 2017

I Model certificate (example)



CERTIFICATE

Product certificate KXXXXXX/0X

Issued

Replaces

Page 1 of 1

Name product

STATEMENT BY KIWA

With this product certificate, issued in accordance with the Kiwa Regulations for Certification, Kiwa declares that legitimate confidence exists that the products supplied by

Name customer

as specified in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate may, on delivery, be relied upon to comply with Kiwa evaluation guideline

BRL-xxxx "xxxxxxxxxxxxxxxxxxxxxxxx" dated [dd-mm-yyyy]

inclusive amendment sheet dated dd-mm-yyyy.

Name Director
Kiwa

*Publication of this certificate is allowed.
Advice: consult www.kiwa.nl in order to ensure that this certificate is still valid.*

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Company
Name customer
Address customer

Phone number
Fax number
www.
Email

Certification process consists of initial and regular assessment of:

- quality system
- product

II Model IQC-scheme (example)

Inspection subjects	Inspection aspects	Inspection method	Inspection frequency	Inspection registration
Raw materials or materials supplied: <ul style="list-style-type: none"> Raw material entry check 				
Production process, production equipment, plant: <ul style="list-style-type: none"> Procedures Work instructions Test equipment Equipment 				
Finished-products				
Measuring and testing equipment <ul style="list-style-type: none"> Measuring equipment Calibration 				
Logistics				