

BRL-K 14007/02
01-02-2012

Evaluation guideline

for the Kiwa product certificate for
Headparts to be used for sanitary tapware



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 February 2017.

Kiwa N.V.
Sir W. Churchill-laan 273
PO Box 70
2280 AB RIJSWIJK
the Netherlands

Tel. +31.70 414 44 00
Fax +31.70 414 44 20
www.1kiwa.com

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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 1 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 headparts to be used as part of sanitary tapware.

This evaluation guideline replaces BRL-K14007/01 dated 25 March 2005.

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 EN 45011.

1.2 Field of application / scope

The headparts are intended to be used as part of sanitary tapware as meant in the Kiwa evaluation guidelines, for which a separate Kiwa product certificate has been issued;

- BRL-K610 "Thermostatic mixing valves",
- BRL-K644 "Bib taps with integrated vacuum breaker",
- BRL-K652 "Sanitary Tapware; single taps and mixer taps",

The headparts are designed for using in drinking-water installations with a maximum water pressure of 1000 kPa and a maximum water temperature of 90°C.

Remark

This evaluation guideline does not refer to headparts which may be sold to consumers directly, to be used as replacement for defective parts.

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 NEN 1006:2002): water intended for drinking, cooking, food preparation or other domestic purposes.

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 headparts have to fulfil. These requirements will make part of the technical specification of the products, as included in the certificate.

4.2 Product requirements

The conditions of use and requirements for the sanitary tapware where the headpart shall be mounted in are laid down in:

NEN-EN 200: Sanitary tapware; General technical specifications for single taps and mixer taps (nominal size 1/2) PN 10; Minimum flow pressure of 0,05 MPa (0,5 bar)

4.3 Materials

4.3.1 Toxicological requirements

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 Rubber

Natural rubber (NR) and isoprene rubber (IR) are not allowed to be used. Synthetic rubber shall comply with NEN-EN 681-1.

4.3.2.2 Changes in raw materials

The producer may only make changes in the raw materials or use a different type of raw material after the test institution has given approval to that.

4.4 Functional requirements

4.4.1 General

The product examination can not be carried out on only the headpart itself. It is therefore to be tested in a test housing to be supplied by the manufacturer. This test housing can consist of a brass body in which the headpart can be tested or a sanitary tap complying with EN 200. The flow resistance of this brass body or tap shall be lower than that of the headpart.

The body or sanitary tap in which the headpart is tested may be selected by the applicant.

* 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.

4.4.2 *Leaktightness*

When tested according to article 6.1 the headpart and tap assembly may show no leakage or any sign of damage.

Remark

In case the headpart is suitable for two flow directions, the leaktightness shall be measured for both directions.

4.4.3 *Flow rate*

When tested as described in the EN 200, the flow rate with the headpart completely open and a dynamic supply pressure of 300 kPa shall be at least 19 l/min.

Remark

In case the headpart is suitable for two flow directions, the flow rate shall be measured for both directions.

4.4.4 *Torsion tests*

4.4.4.1 *Operation torque*

The operating torque necessary to fully open and close the headpart shall not exceed 6 N·m. This shall be tested according to article 6.2.

4.4.4.2 *Resistance to forces*

The headpart shall be resistant to a force against the stops caused by a torque of 10 N·m. This shall be tested according article 6.3. During and after this test, the headpart shall show no deformation or other deterioration which impairs the function of the tap and comply with the requirements for leaktightness.

4.4.5 *Resistance to pressure jumps*

Headparts shall be resistant to 10 000 pressure jumps of 2,5 MPa. The frequency of the pressure jumps from 0 to 2.5 MPa shall have a maximum of 2 Hz.

After the test according to 6.4 the headpart shall comply with the requirements for leaktightness.

4.4.6 *Mechanical Endurance*

The headpart shall be able to withstand a large number of cycles to test its mechanical endurance. This shall be tested according to article 6.5. During and after this test, the headpart shall show no deformation or other deterioration which impairs the function of the tap and comply with the requirements for leaktightness.

4.4.7 *Resistance to high temperatures*

The headpart shall be resistant to a temperature of 90°C. This shall be tested according to article 6.6. After this test, the headpart shall not show any deformation or other deterioration which impairs the function of the tap and comply with the requirements for leaktightness.

4.4.8 *Noises (informative)*

During all tests to be performed, the headpart shall not cause any inconvenient noise.

Remark

The headpart will be acoustically tested in accordance to the relevant standards, as part of the sanitary tap in which it will be used.

5 Marking



5.1 General

The headpart shall be provided with the following markings:

- manufacturer's name or mark,
- name of mark of the manufacturer in which the headpart is being used,
- type code or name,
- production date or code.

The marking shall be legible and indelible.

5.2 Certification mark

After conclusion of the Kiwa certification agreement, in addition to the marks indicated in 5.1, the mark **KIWA**  or the abbreviated wordmark  in a rectangle shall be applied legible and indelible.

6 Test methods

6.1 Determination of leaktightness

6.1.1 Test piece

For this test a new test piece mounted in the test housing is required.

6.1.2 Procedure

- a. Open the headpart and fill the valve body with water;
- b. After expelling all the air, close the outlet;
- c. Apply pressure gradually increasing over 15 seconds to (1600 ± 50) kPa and maintain this pressure for $(60 + 5)$ seconds;
- d. If an O-ring is used for the spindle seal, decrease the pressure to (20 ± 2) kPa and maintain this for a further $(60 + 5)$ seconds.

6.2 Determination of operation torque

6.2.1 Test piece

For this test a new headpart mounted in the test housing, is required.

6.2.2 Procedure

- a. Rinse the test piece with water with a pressure of $(300 + 30)$ kPa and the headpart in fully open position;
- b. Close the headpart and measure the torque needed;
- c. Open the headpart and measure the torque needed.

6.3 Determination of resistance to forces

6.3.1 Test piece

For this test a new headpart mounted in the test housing is required.

6.3.2 Procedure

- a. Turn the operating mechanism anti-clockwise against the stop;
- b. Apply an anti-clockwise torque of (10 ± 1) N m to the spindle of the operating mechanism for a period of $(60 + 5)$ seconds;
- c. Turn the operating mechanism clockwise against the stop;
- d. Apply a clockwise torque of (10 ± 1) N m to the spindle of the operating mechanism for a period of $(60 + 5)$ seconds.

6.4 Determination of resistance to pressure jumps

6.4.1 Test installation and appliances

The test installation must be able to generate pressure jumps to 2,5 MPa and a frequency up to 0,5 Hz.

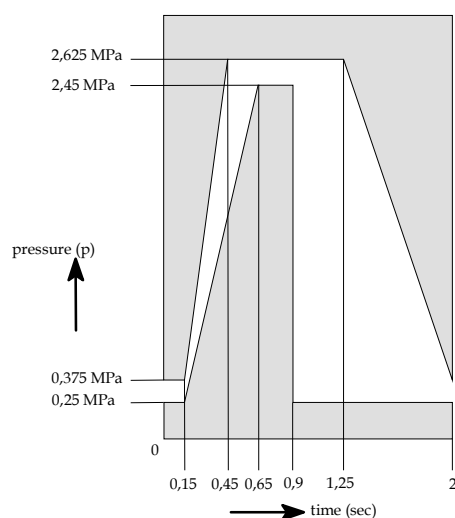
6.4.2 Test pieces

For this test a new head part mounted in the test housing is required.

6.4.3 Procedure

- a. Mount the test piece in the test installation, fill the system with water and de-aerate the system.
- b. Generate 10 000 times a pressure jump from 0 to 2,5 MPa. The pressure jump shall be according to figure 2 with the restriction that the pressure line must stay within the white area.
- c. Assess the headpart visually.

d. Carry out the water tightness test according to 6.1.



6.5 Determination of the mechanical endurance

6.5.1 Apparatus

According to EN 200.

6.5.2 Procedure

The procedure as mentioned in the EN 200 shall be followed.

6.5.3 Test criteria

There shall be no leakage in any position. If leakage occurs, the test shall be stopped.

6.6 Determination of resistance to high temperatures

6.6.1 Test piece

This test shall be carried out with the test piece used in 6.5.

6.6.2 Procedure

When the durability of the headpart is determined in accordance with 6.5, another 25 000 cycles shall be carried out according to the procedure with water with a temperature of $(90 \pm 5)^\circ\text{C}$ with the same head part as used in 6.3.

7 Instructions

The standard dimensions and torque for correct installation and use of the headpart shall be properly given in an instruction delivered alongside to the headpart.

At the same time, this information shall made known in documentation about the headpart.

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 K14006/02	Tests within the scope of		
		Pre- certification	Supervision by Kiwa after granting of certificate ¹⁾	
			Inspection ²⁾	frequency (no./year)
Material				
Toxicological requirements	4.3.1	X	X	2
Chemical and mechanical requirements	4.3.2	X	X	2
Construction and shape		X	X	1
Functional requirements				
Leaktightness	4.4.2	X	X	1
Flow rate	4.4.3	X	X	1/3
Torsion tests	4.4.4	X	X	1
Resistance to pressure jumps	4.4.5	X	X	1/3
Mechanical endurance	4.4.6	X	X	1/3
Resistance to high temperatures	4.4.7	X	X	1/3
Marking				
General	5.1	X	X	2
Certification mark	5.2	X	X	2

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

²⁾ The indicated inspections shall be carried out by the manufacturer, eventually 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
Education - general	<ul style="list-style-type: none"> • Technical higher-level professional education • Internal training certification and Kiwa policy • Training auditing 	<ul style="list-style-type: none"> • Intermediate-level professional education • Internal training certification and Kiwa policy • Training auditing 	<ul style="list-style-type: none"> • Higher level professional education • Internal training certification and Kiwa policy • Training auditing
Education - specific	<ul style="list-style-type: none"> • for BRL relevant technical education • specific studies and training (know-how and skills) 	<ul style="list-style-type: none"> • for BRL relevant technical education • specific studies and training (know-how and skills) 	<ul style="list-style-type: none"> • not applicable unless the CvD has specific requirements
Experience - general	<ul style="list-style-type: none"> • 1 year of relevant work experience with at least 4 pre certification tests of which one carried out independent under supervision. 	<ul style="list-style-type: none"> • 1 year of relevant work experience with at least 4 inspections of which one carried out independent under supervision 	<ul style="list-style-type: none"> • 4 year of relevant work experience with at least 1 year in certification

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

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 be 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 the number of two 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

Titles of the Standards and Publications as mentioned and to be consulted:

NEN 1006	General requirements for water supply installations
NEN-EN 681-1	Elastomeric seals - Materials requirements for pipe joint seals used in water and drainage applications - Part 1: Vulcanised rubber
NEN-EN 200	Sanitary tapware; General technical specifications for single taps and mixer taps (nominal size 1/2) PN 10; Minimum flow pressure of 0,05 MPa (0,5 bar)
NEN-EN 1982	Copper and copper alloys - Ingots and castings
NEN-EN 12163	Copper and copper alloys - Rod for general purposes
NEN-EN 12164	Copper and copper alloys - Rod for free machining purposes
NEN-EN 12420	Copper and copper alloys - Forgings
Staatscourant van 13 december 2002, nr. 241, pagina 25	

In this BRL is referred to the version in force, unless something else is mentioned.

I Model certificate

Product certificate
KXXXXXXX/OX



Issued

Replaces

Page 1 of 2

Headparts to be used for sanitary tapware

STATEMENT BY KIWA

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

Name supplier

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-K14007 "Headparts to be used for sanitary tapware"



Bouke Meekma
Kiwa

Publication of the certificate is allowed.

Kiwa Nederland B.V.
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 info@kiwa.nl
www.kiwa.nl

Supplier

Certification process consists of initial and regular inspection of:

- quality system
- product

II Model IQC-scheme

Inspection subjects	Inspection aspects	Inspection method	Inspection frequency	registration
Receiving inspection <ul style="list-style-type: none"> raw materials 	material			
Process control <ul style="list-style-type: none"> casting process (if applicable) cast products hot pressing process (if applicable) hot pressing products machining of parts assembly 	<ul style="list-style-type: none"> temperature material composition appearance non filled parts weld lines dimensions temperature <ul style="list-style-type: none"> appearance non filled parts weld lines dimensions fit threads correct parts correct location lubrication 			
Product control <ul style="list-style-type: none"> appearance marking functional properties 	finishing correctness			
Measuring and testing equipment <ul style="list-style-type: none"> test equipment calibration 				
Logistics <ul style="list-style-type: none"> Internal transport Storage Packaging Preservation Identification or marking of semi-manufactures and end-products 				