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Concept 2016-08-26

Evaluation Guideline

for the Kiwa product certificate for
Extractable shower hoses for sanitary tapware

Preface

This evaluation guideline has been accepted by the Kiwa Board of Experts Watercycle (CWK), in which all relevant parties in the field of extractable shower hoses for sanitary tapware 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 Product Certification. This regulation details the method used by Kiwa for conducting the necessary investigations prior to issuing the product certificate and the method of external control.

Kiwa Nederland B.V.
Sir Winston Churchillaan 273
Postbus 70
2280 AB RIJSWIJK
The Netherlands

Tel. +31 088 998 44 00
info@kiwa.nl
www.kiwa.nl

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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 **Date xxxxxx**

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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 products used for extractable shower hoses for sanitary tapware.

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 extractable shower hoses for sanitary tapware are intended to be used in drinking water applications as described in the table below;

	Maximum limits	Recommended limits
Dynamic pressure	0,02 MPa min.	$0,1 \text{ MPa} \leq P \leq 0,5 \text{ MPa}$
Static pressure	1 MPa max.	
Inlet temperature - hot	$T \leq 90 \text{ }^\circ\text{C}$	$60 \text{ }^\circ\text{C} \leq T \leq 80 \text{ }^\circ\text{C}$
Inlet temperature - cold	$T \leq 25 \text{ }^\circ\text{C}$	$T \leq 25 \text{ }^\circ\text{C}$
Outlet temperature - mixed	$45 \text{ }^\circ\text{C} \leq T \leq 65 \text{ }^\circ\text{C}$	

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 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 I.

2 Terms and definitions

2.1 Definitions

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

- **Board of Experts:** the Board of Experts “Water Cycle” (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.
- **Drinking water:** water intended or partly intended for drinking, cooking or food preparation or other domestic purposes, but does not include hot water, and is made available by pipeline to consumers or other customers.
- **Evaluation Guideline (BRL):** the agreements made within the Board of Experts on the subject of certification.
- **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.
- **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.
- **IQC scheme (IQCS):** a description of the quality inspections carried out by the supplier as part of his quality system.
- **Pre-certification tests:** tests in order to ascertain that all the requirements recorded in the evaluation guideline are met.
- **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.
- **Supplier:** the party that is responsible for ensuring that the products meet and continue to meet the requirements on which the certification is based.

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 contained in this evaluation guideline, including the test methods, and comprise of, depending on the nature of the product to be certified, 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 quality declaration

After finishing the pre-certification tests, the results are presented to the Decision maker (see 9.2) deciding on granting of the certificate. This person evaluates the results and decides whether the certificate can be granted or if additional data and/or tests are necessary.

4 Requirements

4.1 General

This chapter contains the requirements that extractable shower hoses for sanitary tapware have to fulfil.

4.2 Regulatory requirements

4.2.1 *Requirements to avoid deterioration of the quality of drinking water*

The requirements in this chapter are public law requirements.

To prevent harmful effects on the quality of drinking water, the following government imposed provisions apply.

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 recognised 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 *Product*

The requirements of the product are specified in the following standard:

EN 16146: November 2014: Sanitary tapware - Extractable shower hoses for sanitary tapware for supply systems type 1 and type 2 – General technical specification.

4.3.2 *Additional requirements*

In addition to the requirements listed in 4.3.1, the following requirements apply:

4.3.2.1 *Corrosion resistance*

The materials used shall be corrosion resistant or protected against corrosion and shall not give rise to any contact corrosion.

4.3.2.2 *Metallic Coatings*

Metallic, anticorrosive coatings must comply with the requirements of EN 248.

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.

4.3.2.3 *Plastic coatings*

Plastic coatings shall, after testing according to clause 5.1 of this guideline, comply to the following:

- EN 248, Article 7.1.1 with respect to corrosion resistance;
- ISO 2409, Table 1, Class 0 or 1 with respect to adhesion.

4.3.2.4 *Check valves*

If check valves are used for the prevention of back siphoning, they shall meet the requirements of Kiwa evaluation guideline BRL-K629. with regards to the requirements for sealing and durability.

5 Test methods

This chapter contains the test methods that extractable shower hoses for sanitary tapware have to fulfil.

5.1 Determination of the adhesion and durability of plastic coatings

5.1.1 Test installation

For the determination of the adhesion and durability of plastic coatings, the test sample(s) shall first be conditioned in a water bath in which the temperature is automatically held at the desired temperature. The tools required for the adhesion test shall be in accordance with ISO 2409.

5.1.2 Test sample(s)

Two samples are required, or such a number where the test surface is at least 10 000 mm².

5.1.3 Test requirements

During the conditioning of the test samples, the following shall apply:

- Water bath temperature shall be $90 \pm 3^{\circ}\text{C}$;
- Ambient room temperature shall be $20 \pm 10^{\circ}\text{C}$.

5.1.4 Test method

- a) Place the test samples in the water bath for 1 hour;
- b) Cool the test samples down to the ambient temperature;
- c) Determine the adhesion of the coating of one sample according to ISO 2409;
- d) Determine the corrosion resistance of the coating of the remaining sample in accordance with EN 248.

6 Marking

6.1 General





The products shall be marked with following indelible marks and indications:

- name or logo of the manufacturer;
- data or code indicating the date of production;
- type indication.

6.2 Certification mark

After concluding a Kiwa certification agreement, the certified products shall, beside the marks indicated in EN 16146, be indelible marked with the certification mark:

For products which come in contact with drinking water:

The Kiwa Water Mark “**KIWA** ” or for small products  or  or .

7 Requirements in respect of the quality system

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

7.1 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.

7.2 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 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 as shown in Annex II.

7.3 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.

7.4 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.

7.5 Other requirements

The supplier shall be able to submit the following:

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

8 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.

8.1 Test matrix

Description of requirement	Article no. BRL / EN	Tests within the scope of:	
		Pre-certification	Supervision by Kiwa after granting the certificate ^{a,b)}
Requirements according to EN 16146			
Dimensions	7	X	X
Flow rate	8.2		X
Tensile strength	9.2	X	X
Flexing durability test	9.3	X	
Durability test	9.4	X	
Pressure resistance at elevated temperature	9.5	X	
Thermal shock test	9.6	X	
Rotary connection	10	X	
Requirements according to BRL-K14026			
Requirements to avoid deterioration of the quality of drinking water	4.1.1.	X	X
Corrosion resistance	4.2.2.1	X	
Metallic coatings	4.2.2.2	X	
Plastic coatings	4.2.2.3	X	
Check valves	4.2.2.4	X	
Marking –general	6.1	X	X
Marking – certification mark	6.2	X	X

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

b) All product characteristics that can be determined within the visiting time (maximum 1 day) are determined by the inspector or by the supplier in the presence of the inspector. In case this is not possible, an agreement will be made between the certification body and the supplier about how the inspection will take place. The frequency of inspection visits is defined in chapter 9.6 of this evaluation guideline.

8.2 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.

9 Agreements on the implementation of certification

9.1 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.

9.2 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.

9.2.1 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

Basis requirements	Evaluation criteria
Knowledge of company processes Requirements for conducting professional audits on products, processes, services, installations, design and management systems.	Relevant experience in the field: SAS : 1 year CAS : 1 year DM : 5 years inclusive 1 year in respect to certification Relevant technical knowledge and experience: SAS : High school (MBO) CAS, DM : Bachelor (HBO)
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.

Basis requirements	Evaluation criteria
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"> • 3 complete applications (excluding the initial assessment of the production site) under the direction of the PM • 1 complete application self-reliant (to be evaluated by PM) • 3 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 together with a qualified SAS • 3 inspection visits conducted self-reliant (witnessed by PM)
Skills in performing witnessing	PM Internal training witness testing

Legenda:

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

9.2.2 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:

- DM: qualification of Certification and Site assessors;
- Management of the certification body: qualification of DM.

9.3 Report Pre-certification tests

The certification body records the results of the pre-certification tests 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.

9.4 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.

9.5 Layout of quality declaration

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

9.6 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 at the place of manufacturing;
- 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.

For suppliers with a private label certificate the frequency of audits amounts to 1 audit per two 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.

9.7 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.

9.8 Non conformities

When the certification requirements are not met, measures are taken by Kiwa in accordance with the sanctions policy, as published on the Kiwa service portal (www.kiwa.nl) for this evaluation guideline.

9.9 Interpretation of requirements

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

10 Titles of standards

10.1 Public law rules


“Staatscourant” (Dutch Government Gazette) “Regeling Materialen en Chemicaliën drink- en warm tapwatervoorziening” (Regulation on materials and chemicals drinking water and warm tap water supply)
from 18 July 2011, no. 11911

10.2 Standards / normative documents

Number	Title	Version*
NEN-EN-ISO/IEC 17020	Conformiteitsbeoordeling – Eisen voor het functioneren van verschillende soorten instellingen die keuringen uitvoeren	
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	
NEN 1006	General requirements for water installations	
EN 16146:2014	Sanitary tapware - Extractable shower hoses for sanitary tapware for supply systems type 1 and type 2 – General technical specification	
EN 248	Sanitary tapware - General specification for electrodeposited coatings of Ni-Cr	
ISO 2409	Paints and varnishes. Cross-cut test	
BRL-K629	Kiwa evaluation guideline for Backflow protection devices, Family E, Types A, B, C and D	
	Kiwa regulations for Product certification	
WB 2.2 A	Water work sheet- Drinking water installations	

*) When no date of issue has been indicated, the latest version of the document is applicable.

I Model certificate (informative)

Certificate	Product certificate KXXXXXX/0X	 Partner for progress
	Issued	
	Replaces	
	Page	1 of 2
Extractable shower hoses 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-K14026/01 " Extractable shower hoses for sanitary tapware".		
Luc Leroy Kiwa		
Publication of the certificate is allowed. Advice: consult www.kiwa.nl in order to ensure that this certificate is still valid.		
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: <ul style="list-style-type: none">• quality system• product

II Model IQC-scheme

Inspection subjects	Inspection aspects	Inspection method	Inspection frequency	Inspection registration
Raw materials or materials supplied: - recipe sheets - incoming goods inspection raw materials				
Production process, production equipment, plant: - procedures - working instructions - equipment - release of product				
Finished-products				
Measuring and testing equipment - measuring equipment - calibration				
Logistics - internal transport - storage - preservation - packaging - identification				