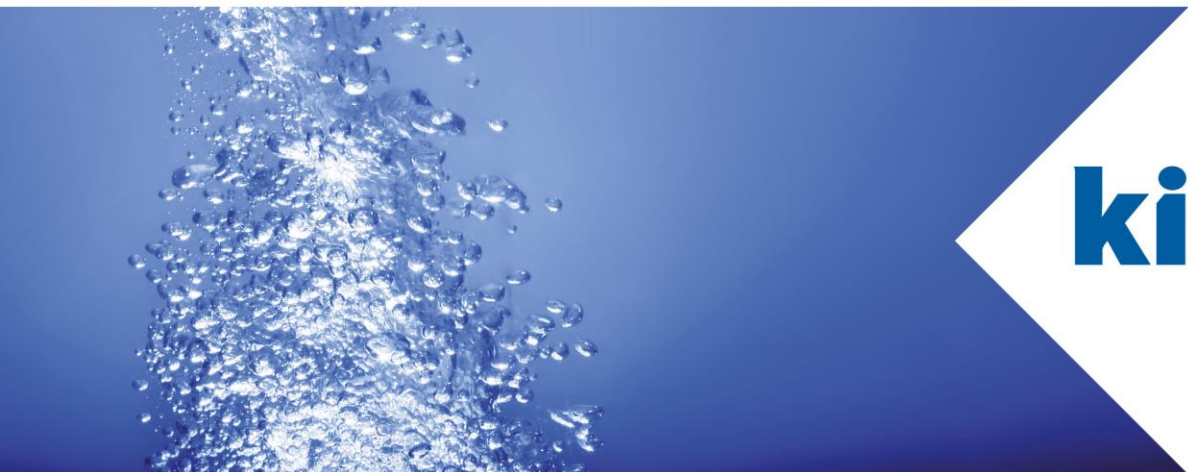


BRL-K639
2019-10-01

Evaluation Guideline

for the Kiwa product certificate for
Fittings with compression ends for use with
copper tubes



**Trust
Quality
Progress**

Preface

This evaluation guideline has been accepted by the Kiwa Board of Experts Watercycle (CWK), in which all relevant parties in the field of Fittings with compression end for use with copper tubes 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.

The main changes compared to the previous version are the editorial modification in the content of the BRL in relation to the quality objective of Kiwa.

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

© 2016 Kiwa N.V.

All rights reserved. No part of this book may be reproduced, stored in a database or retrieval system, or published, in any form or in any way, electronically, mechanically, by print, photo print, microfilm or any other means without prior written permission from the publisher.

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 December 2018

Contents

	Preface	1
	Contents	2
1	Introduction	4
1.1	General	4
1.2	Field of application / scope	4
1.3	Acceptance of test reports provided by the supplier	4
1.4	Quality declaration	4
2	Terms and definitions	5
2.1	Definitions	5
3	Procedure for granting a product certificate	7
3.1	Initial investigation	7
3.2	Granting the product certificate	7
3.3	Investigation into the product and/or performance requirements	7
3.4	Production process assessment	7
3.5	Contract assessment	7
4	Requirements	8
4.1	General	8
4.2	Regulatory requirements	8
4.3	Product requirements	8
5	Test methods	12
5.1	Determination resistance against water with a temperature of 90°C	12
5.2	Determination of the airtightness	12
5.3	Determination resistance against torsion	12
5.4	Determination of the strength	13
5.5	Determination of durability	13
5.6	Determination of water tightness of the joints under fluctuating temperatures	14
6	Marking	15
6.1	General	15
6.2	Certification mark	15
7	Requirements in respect of the quality system	16
7.1	Manager of the quality system	16
7.2	Internal quality control/quality plan	16

7.3	Control of test and measuring equipment	16
7.4	Procedures and working instructions	16
7.5	Other requirements	16
8	Summary of tests and inspections	17
8.1	Test matrix	17
8.2	Inspection of the quality system of the supplier	18
9	Agreements on the implementation of certification	19
9.1	General	19
9.2	Certification staff	19
9.3	Report initial investigations	20
9.4	Decision for granting the certificate	21
9.5	Layout of quality declaration	21
9.6	Nature and frequency of third party audits	21
9.7	Non conformities	21
9.8	Report to the Board of Experts	21
9.9	Interpretation of requirements	22
9.10	Specific rules set by the Board of Experts	22
10	Titles of standards	23
10.1	Public law rules	23
10.2	Standards / normative documents	23
10.3	Bibliography	Error! Bookmark not defined.
I	Model certificate (informative)	24
II	Model IQC-scheme (informative)	25

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 Fittings with compression ends for use with copper tubes.

This guideline replaces the evaluation guideline BRL-K639/03, dated 01-02-2012. The quality declarations issued and based on that guideline will not lose their validity.

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 fittings with compression ends are being used to connect copper pipes, according to the Kiwa evaluation guideline BRL-K760, in tap water and gas installations and in heating installations.

The tightening is achieved by a compression or cutting ring or forming of the tube at its end, without making use of soldering material or screw thread on the copper tube.

The fittings can also be applied underground in areas where no pollution of the soil has been found.

For the application in tap-water installations a maximum working pressure of 1000 kPa and a maximum water temperature of 90°C is applicable.

Note

This evaluation guideline in principle is **not** applicable for compression fittings in combination with annealed copper pipes. Compression fittings in combination with annealed copper pipes in some cases will require an internal support. After mounting the presence of this internal support cannot be determined which hinders any inspection on the aspect of workmanship.

In case the manufacturer decides to deliver its fittings for the use in combination with different kinds of copper tubes (including annealed copper tubes), then all fittings shall be delivered with an internal support. At the same time the use of compression fittings in combination with hard copper tube hair cracks can appear in case of forming the tube's end.

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.

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 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
- **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.
- **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.
- **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.
- **House hold water:** non-potable water that 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.
- **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.
- **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.

- **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 a product certificate

3.1 Initial investigation

The pre-certification tests 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 pre-certification tests, the results are presented to the Decision maker (see 9.2) 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 the fittings with compression ends for use with copper tubes have to fulfil. These requirements are part of the technical specification of the products, as stated in the certificate.

4.2 Regulatory requirements

4.2.1 *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 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

The requirements the product shall meet and the respective test methods have been laid down in the following standard:

EN 1254-2	Copper and copper alloys - Plumbing fittings - Part 2: Fittings with compression ends for the use with copper tubes	February 1998
EN 1254-4	Copper and copper alloys - Plumbing fittings - Part 4: Fittings combining other end connections with capillary or compression ends	March 1998
EN 1254-4/C1	Copper and copper alloys - Plumbing fittings - Part 4: Fittings combining other end connections with capillary or compression ends	August 1999

4.3.1 *Product*

The requirements of the product are specified in standard with exception of the aspects where requirements are specified in chapter 4.3.2.

4.3.2 *Additional requirements*

In addition to the requirements mentioned at 4.3 the following is applicable:

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.

4.3.2.1 Hygienic treatment of products in contact with drinking water

The supplier must 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'.

4.3.2.2 Protection layers

In addition to what has been mentioned in EN 1254-2, article 4.4.7, metallic anticorrosive protection layers shall also fulfil the requirements of EN 248.

4.3.2.3 Corrosion resistance

Materials shall not lead to electrochemical corrosion (contact corrosion).

4.3.2.4 Protection of products during transport and storage

For the purpose of hygienic handling, products shall be protected against contamination. This is in regards to the surfaces of the product that come into contact with drinking water during the application.

Precautions to protect the product against contamination shall be agreed upon between the supplier and the client and shall be recorded in the quality management system of the supplier.

4.3.3 Adapter fitting

In addition to what is mentioned in EN 1254-2, article 3.4 applicable to adaptor fittings in which compression end is combined with a soldering end, the entrance of the soldering end shall be rounded with a radius of 0.5 ± 0.3 mm, or bevelled over 0.5 ± 0.3 mm under an angle of 45° .

4.3.4 Nominal diameters

Other than stated in EN 1254-2, table 2, this evaluation guideline is only applicable for the following nominal diameters:

DN 10 - DN 12 - DN 15 - DN 18 - DN 22 - DN 28 - DN 35 - DN 42 - DN 54 - DN 64 - DN 76.1
– DN 88.9 - DN 108 - DN 133

Note

Mentioned above nominal diameters are generally used in the Netherlands and included as such in the Kiwa evaluation guideline BRL-K760.

4.3.5 Width across flats

In addition to what is mentioned in EN 1254-2, article 4.4.5, the width across flats preferably shall be according to ISO 272.

If the width across flats exceed 46 mm, the key flats may be octagonal.

The height of the key flats must be at least equal to the values mentioned in Table 1.

Table 1 - Minimum height key flat

width across flats mm		height of the key flat mm
more than	up to and including	
	22	4
22	27	5
27	32	6
32	41	7
41	50	8
50	75	9
75		10

4.3.6 Reducers

For reducers the transition between the nominal diameters shall be gradually, with a maximum angle of 60° between the bevel and the centre line of the fitting.

4.3.7 Angles

In addition to EN 1254-2, article 4.3.3, the angle between the axis of the bore of the taper end and that of the straight ends of the T-piece, as well as the angle between the axis of both bores of an elbow or a long radius elbow, shall be 90°.

For elbows a version with an angle of 45° between the axis of the bores is also possible.

4.3.8 Water tightness

The test according EN 1254-2, article 4.6.1 "Leak tightness under internal hydrostatic pressure" shall be executed with an internal water pressure of 1600 kPa.

4.3.9 Resistance to pull-out

Compression fittings shall be resistant to pull-out. When examined according to EN 1254-2, article 4.6.2 "Resistance to pull-out" and article 4.6.3 "Leak tightness under internal hydrostatic pressure whilst subjected to bending" undergoing 5 minutes an internal air pressure of up to 300 kPa. The fittings shall not leak.

4.3.10 Resistance against water with a temperature of 90°C

Compression fittings shall be resistant against water with a temperature of 90°C. This shall be determined according to article 6.1. During this examination the fittings shall not leak or be damaged.

4.3.11 Airtightness

Compression fittings shall be airtight against an internal pressure up to 300 kPa at temperatures between -20°C and +150°C. This shall be determined according to article 5.2. During the examination the fittings shall not leak.

4.3.12 Resistance against torsion

Compression fittings mounted to a copper tube shall withstand a torque perpendicular to the centre line of the tube. The torque as mentioned in Table 2 shall be applied at room temperature.

The resistance against torsion shall be tested according to article 5.3. During this test leakage may not occur, nor the tube may turn in the fitting.

Table 2 - Torque's

external diameter copper tube in mm	10	12	15	18	22	28	35	42	>42
torque in Nm	10	12	15	18	22	28	35	42	50

4.3.13 Strength

Compression fittings shall withstand forces which may occur by fastening the swivel nut. This shall be determined according to article 5.4. Before and after this test the fittings shall be watertight if tested according to EN 1254-2 with a water pressure of 1600 kPa and an air pressure of 300 kPa. The fittings shall not be damaged.

4.3.14 Durability

Compression fittings after repeatedly assembling shall remain watertight and fit to be used for its purpose. This shall be determined according to article 5.5.

4.3.15 Water tightness of the joints under fluctuating temperatures

The joints of the compression fittings shall be watertight under fluctuating temperatures. When tested according to article 5.6 against a water pressure of 1600 kPa and an air pressure of 300 kPa, when tested according to EN 1254-2, article 5.6. the fittings shall not be damaged.

5 Test methods

5.1 Determination resistance against water with a temperature of 90°C

5.1.1 Test installation.

For testing the resistance against water with a temperature of 90°C, a test sample shall be included in an installation in which this sample, immersed in water of $90 \pm 3^\circ\text{C}$, can be put under a pressure of 1600 kPa by supplying water (pressure).

5.1.2 Test Samples

For the test three samples are needed assembled according to EN 1254-2, article 5.2 and figure 5.

The compression fittings shall be assembled according to the manufacturer's instructions.

5.1.3 Procedure

- a. place the test pieces in the installation and fill them with water,
- b. gradually increase the pressure to a pressure of 1600 kPa and maintain this pressure,
- c. immerse the test pieces for 168 ± 1 hour in water with a temperature of 90°C ,
- d. determine the water tightness according to EN 1254-2, article 5.4 with a pressure of 1600 kPa.

5.2 Determination of the airtightness

5.2.1 Test installation

For the determination of the airtightness, the test pieces shall be installed in a test installation, conform EN 1254-2, figure 5, in which the pressure can be obtained by supplying air.

The air pressure shall be measured with a precision pressure gauge.

The test pieces shall be immersed in liquids with the adequate temperature and suitable for its purpose.

5.2.2 Test samples

For the test three samples are needed assembled according to EN 1254-2, article 5.2 and figure 5.

The compression fittings shall be assembled according to the manufacturer's instructions.

5.2.3 Procedure

- a. apply to the test pieces an air pressure of 300 ± 10 kPa and maintain this pressure.
- b. immerse the test pieces in water with room temperature for a period of 900 ± 30 s.
- c. keep the test pieces for a period of 6 hours at a temperature of $150 \pm 3^\circ\text{C}$,
- d. immerse the test pieces in a liquid with temperature of $150 \pm 3^\circ\text{C}$ for a period of 900 ± 30 s.
- e. keep the test pieces for a period of 6 hrs. ± 30 min. at a temperature of $-20 \pm 3^\circ\text{C}$,
- f. immerse the test pieces in a liquid with temperature of $-20 \pm 3^\circ\text{C}$ for a period of 900 ± 30 s.

5.3 Determination resistance against torsion

5.3.1 Test installation

For the determination of the resistance against torsion, the test pieces shall be installed in a test installation, in which to the fittings, to be immersed in water with room temperature the pressure, torsion can be applied and an internal pressure can be obtained by supplying air.

The air pressure shall be measured with a precision pressure gauge.

The test pieces shall be assembled according to figure 1.

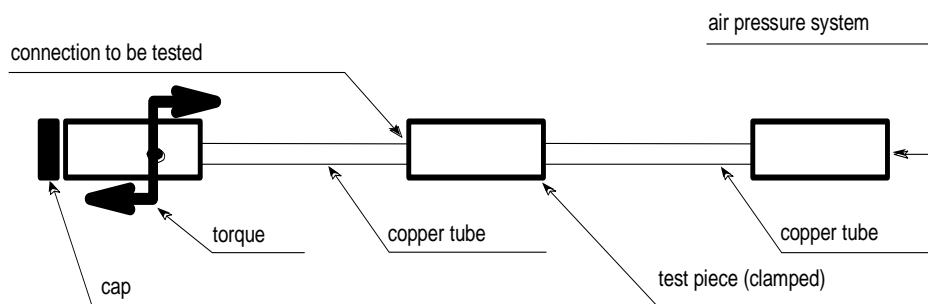


Figure 1

5.3.2 Test samples

For the determination of the resistance against torsion the test pieces are needed which have already been tested to EN 1254-2, article 5.4 and 5.5.

5.3.3 Procedure

- fix a straight coupling into the test installation.
- Apply a torque perpendicular to the centre line of the tube up to the values shown in table 2, gradually and maintain this torque.
- Apply an air pressure of 300 ± 10 kPa and maintain this pressure.
- Immerse the test pieces for a period of 900 ± 30 seconds and check whether the fitting under test shows any leakage.

5.4 Determination of the strength

5.4.1 Test installation

For the determination of the strength, the test pieces shall be installed in a test installation, conform EN 1254-2 article 5.4.1, in which the strength can be determined at ambient temperature by fastening the nut.

5.4.2 Test samples

For the determination of strength 3 test pieces are needed which were already tested on water tightness (EN 1254-2, article 5.4).

5.4.3 Procedure

- determine the water tightness according to EN 1254-2, article 5.4;
- fasten the nuts for another 180° ;
- determine the water tightness again according to a.

5.5 Determination of durability

5.5.1 Test installation

For the determination of the durability, the test pieces shall be installed in a test installation, in which the torque needed to fasten the nuts can be measured and in which the tightness at ambient temperature can be measured.

5.5.2 Test samples

Three fittings already tested to article 5.2.

5.5.3 Procedure

- determine the force needed to mount the fittings conform the instructions of the manufacturer.
- dismount the connection.

- c. mount the fitting once again with the force as determined at point a.
- d. repeat point b. and c. 25 times.
- e. determine the water tightness again according to 5.2.3. point a and b.

5.6 Determination of water tightness of the joints under fluctuating temperatures

5.6.1 Test installation

For this test an installation is needed as shown in Figure 2, as well as facilities for alternate pumping of cold and hot water under pressure through the test pipe system.

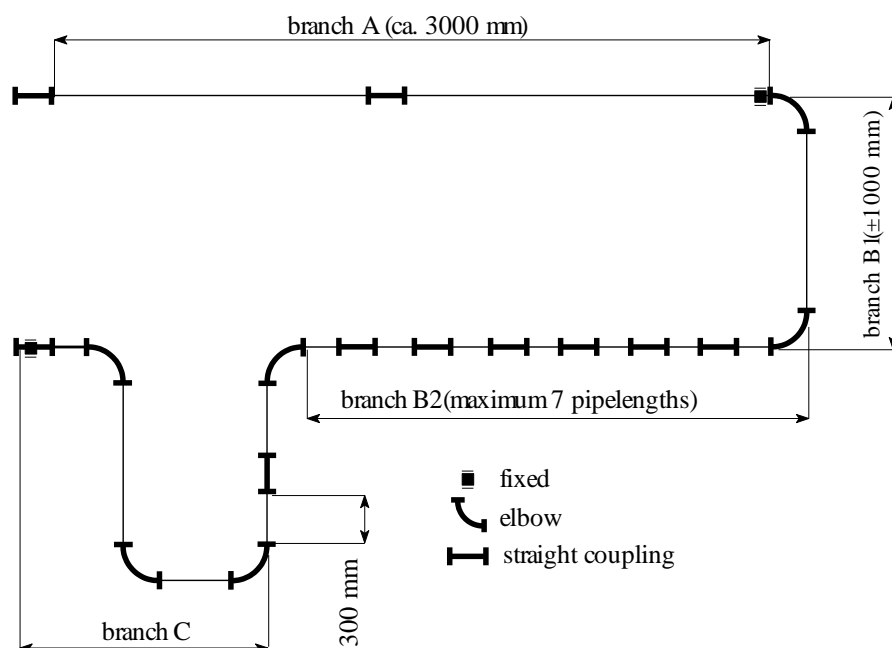


Figure 2

5.6.2 Test setup

In branch A the pipe section shall be pre-tensioned with an axial wall stress of 2N/mm^2 over a length of 3000 mm and anchored. Branch B shall be free to expand and to contract. Branch B2 shall consist at least of 2 pipe lengths and a maximum of 7 pipe lengths. The bends in branch C shall be elbow fittings.

5.6.3 Test conditions

- temperature cold water: $20 \pm 5^\circ\text{C}$,
- temperature hot water: $93 \pm 2^\circ\text{C}$,
- test pressure: (1000 ± 50) kPa,
- flow rate: such that the measured temperature drop between the inlet and outlet of the test arrangement does not exceed 5°C .

5.6.4 Procedure

Carry out in a continuous process 5000 cycles, in which 1 cycle contains flowing the system with cold water for 15 ± 1 minutes followed by flowing with hot water for the same period.

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 be indelible marked with the certification mark:

For products which come in contact with drinking water:

The Kiwa Water Mark “**KIWA** ”, or Kiwa .

For minimized marking (small sized products) the  in a rectangle is permitted.

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 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.

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:

- **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.

8.1 Test matrix

Description of requirement	Article EN1254	Tests within the scope of	
		Pre-certification	Inspection by Kiwa after granting of certificate a,b)
Product requirements			
Requirements EN1254-2	4.2	X	X
Dimensions and tolerances	4.3	X	X
Design and manufacture	4.4	X	X
Production test requirements	4.5	X	X
Type test requirements	4.6	X	X
Marking	7	X	X
Requirements EN1254-4			
Screwed union connections	4.2	X	X
Thread dimensions	4.3	X	X
Tightening systems	4.4	X	X
Minimum wall thickness	4.5	X	X
Minimum bore for unequal-ended fittings	4.6	X	X
Minimum outside diameter of sealing face	4.7	X	X
Flange-type fitting	4.8	X	X
Requirements EN1254-4 C/1		X	X

Description of requirement	Article BRL	Tests within the scope of	
		Pre-certification	Inspection by Kiwa after granting of certificate a,b)
Requirements to avoid deterioration of the quality of the drinking water	4.2.1	X	X
Additional product requirements			
Toxicological requirements	4.3.2	X	X
Chemical and mechanical requirements		X	X
Adapter fitting	4.3.3	X	X
Nominal diameters	4.3.4	X	X
Width across flats	4.3.5	X	X
Reducers	4.3.6	X	X
Angles	4.3.7	X	X
Water tightness	4.3.8	X	X
Resistance to pull-out	4.3.9	X	X
Resistance against water with a temperature of 90°C	4.3.10	X	X
Airtightness	4.3.11	X	X
Resistance against torsion	4.3.12	X	X
Strength	4.3.13	X	X
Durability	4.3.14	X	X
Water tightness of the joints under fluctuating temperatures	4.3.15	X	X
Certification mark			
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 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 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.

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
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"> • 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:

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

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:

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

9.3 Report initial investigations

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 the Annex.

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 2 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 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 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 through the "News and Publications" page on the Kiwa website ["Kiwa Regulation for Certification"](#).

9.8 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.

9.9 Interpretation of requirements

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

9.10 Specific rules set by the Board of Experts

By the Board of Experts the following specific rules have been defined. These rules shall be followed by the certification body.

10 Titles of standards

10.1 Public law rules

BJZ2011048144
29 juni 2011

Regeling van de Staatssecretaris van Infrastructuur en Milieu¹

10.2 Standards / normative documents

Number	Title	Version*
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	
EN 1254-2	Copper and copper alloys – Plumbing fittings – Part 2: Fittings with compression ends for the use with copper tubes.	February 1998
EN 1254-4	Copper and copper alloys- Plumbing fittings – Part1: Fittings with ends for capillary soldering or capillary brazing to copper tubes.	August 1991
EN 1254-4 +C1	Copper and copper alloys – Plumbing fittings – Part 4: Fittings combining other end connections with capillary or compression ends.	August 1991
NEN EN 45011	General requirements for the competence of testing and calibration laboratories	
ISO 272	Fasteners; Hexagon products, widths across flats, second edition.	
ISO 1338	Cast copper alloys	
ISO 6957	Copper alloys – Ammonia test for stress corrosion resistance	
EN 248	Sanitary tapware – General specification for electrodeposited	
EN 1006	General requirements for water supply installations	
BRL- K760	Copper pipes for transport of hot and Cold drinking water.	

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

¹ Valid from 1 July 2017

I Model certificate (example)



Product certificate
Kxxxxx/xx

Issued *Date*
Replaces *Kxxxxx/xx*
Page *1 of 2*

CERTIFICATE

Fittings with compression ends for use with copper tubes

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 supplier

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-K639 "Fittings with compression ends for use with copper tubes " dated 15.09.2024

which covers the requirements of

EN 1254-2: 1998 "Copper and copper alloys - Plumbing fittings - Part 2: Fittings with compression ends for the use with copper tubes."

EN 1254-4: 1998 "Copper and copper alloys- Plumbing fittings – Part1: Fittings with ends for capillary soldering or capillary brazing to copper tubes."

Ronald Karel
Kiwa

Publication of this certificate is allowed.

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

Kiwa Nederland B.V.
Sir Winston Churchilllaan 273
Postbus 70
2280 AB RIJSWIJK
The Netherlands
Tel. +31 88 998 44 00
Fax +31 88 998 44 20
info@kiwa.nl
www.kiwa.nl

Company
Name supplier
Address
Zip code City
Country
Telephone number
email
internet site

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: - recipe sheets - incoming goods inspection raw materials	material dimensions appearance supplier			
Production process, production equipment, plant: - procedures - working instructions - equipment - release of product	temperature material composition appearance holes and cavities in cast capillary hole shape screw thread correct parts watertightness			
Finished-products	finish (smooth) correctness (version and place) carbon			
Measuring and testing equipment - measuring equipment - calibration	certificates (internal/external) Validity Inspection registration			
Logistics - internal transport - storage - preservation - packaging - identification	damages packaging stack height traceability			

