



KE 6
March 2012



GASTEC QA

Approval Requirements 6

for the GASTEC QA product certificate for
Plumbing fittings with ends for capillar soldering
and/or thread connections



Foreword

These GASTEC QA Approval requirements have been accepted by the Board of Experts of the GASTEC QA Quality Mark, wherein all the relevant parties in the field of gas related products are represented. This Board of Experts also supervises the certification activities and where necessary require the GASTEC QA Approval Requirements to be revised. All references to Board of Experts in these GASTEC QA Approval requirements pertain to the above mentioned Board of Experts.

These GASTEC QA Approval requirements will be used by Kiwa Nederland B.V. in conjunction with the "Kiwa regulations for carrying the GASTEC QA Quality mark". This regulation details the method employed by Kiwa Nederland B.V. for conducting the necessary investigations prior to issuing the (technical approval-with) product certificate and the method of external control. The inspection frequency is determined by the above mentioned Board of Experts.

Approved by Board of Experts : February 15th 2012

Accepted by Kiwa Nederland B.V. : March 1st 2012

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Summary of changes

Paragraph	Change
1.1	A general introduction is included
1.2	NEN 2078 added in the scope
1.3	A clause regarding the acceptance of test reports provided by the supplier is included
2.1	A general introduction to the product requirements is included
2.4	The type of accepted elastomers is changed
4	Summary of tests and inspections included
5	Agreements on the performance of certification included
6	List of referenced documents included
Appendix A	Model of IQC-scheme included
Appendix B	Model Certificate included

1 Introduction

1.1 General

These GASTEC QA Approval requirements replace the GASTEC QA Approval Requirements 6, Plumbing fittings with ends for capillar soldering and/or thread connections, 11-2008.

During the execution of the certification work, Kiwa Nederland B.V. is bound to the “Kiwa regulations for carrying the GASTEC QA Quality mark”.

1.2 Scope

These Approval Requirements specify the requirements for copper and copper alloy fittings with ends for capillary soldering or capillary brazing to copper tubes according to the GASTEC QA Approval requirements 5 and/or thread connections for the transport of gas.

The specific functional recommendations for installation of these systems are described in the requirements of NEN 1078, NEN 2078, NEN 7244, NEN-EN 12007, NPR 3378-5, and/or other national and international standards and regulations.

1.3 Acceptance of test reports provided by the supplier

The rules for acceptance of test reports provided by the supplier are laid down in the Regulations for Product Certification for carrying the GASTEC QA quality mark.

2 Product Requirements

2.1 General

The requirements to be met for these fittings, as well as accompanying testing methods, are based on the following standards:

Number	Title	Date of issue
NEN-EN 1254-1	Copper and copper alloys – Plumbing fittings – Part 1 : Fittings with ends for capillary soldering or capillary brazing to copper tubes.	February 1998
NEN-EN 1254-4 and NEN-EN 1254-4:1998/C1	Copper and copper alloys – Plumbing fittings – Part 4 : Fittings combining other end connections with capillary or compression ends.	March 1998 and August 1999
BRL-K623/02	Evaluation guideline for the Kiwa product certificate for plumbing fittings for capillary soldering and/or thread connections to copper tubes	2001-03-23

The requirements as mentioned in BRL –K623/02 clause 2.3 up to including 2.3.3 are not applicable for gas applications.

Supplementary to that stated in NEN-EN 1254-1, NEN-EN 1254-4 and NEN-EN 1254- 4:1998/C1 and BRL – K623/02 the following requirement shall be met:

2.2 Connection threads

Fitting threads shall meet the requirements of NEN-EN 10226-1.

2.3 Screwed union connections

Screwed union connections shall be in accordance to:

NEN 2550 – male screw union piece
NEN 2551 – female screw union piece
NEN 2542 – flange – thread connection
NEN 2541 – flange - capillary solder connection.
NEN 2545 - gasket ring
NEN 2544 – union nut
NEN 2549 - capillary solder union piece

2.4 Rubber seals

Rubber seals shall comply with EN 549. The temperature class according to EN 549 shall be at least A2.

2.5 Marking

2.5.1 General

The products are permanently marked with the GASTEC QA word mark, logo or punch mark.

Each fitting shall be legibly and durably marked, at the minimum, with the manufacturer's identity symbol and, if it is practicable, with the nominal diameter and the number and part of this standard.

2.5.2 Dezincification resistant copper-zinc alloys

Fittings manufactured from dezincification resistant copper-zinc alloys and capable of meeting the requirements of NEN-EN 1254-1 4.5.3 shall be legibly and durably marked in accordance with either a) or b), as follows:

- a) for grade A material use symbol **CR** or characters **DRA**;
- b) for grade B material use characters **DRB**.

3 Quality system requirements

3.1 General

This chapter contains the requirements that have to be fulfilled by the manufacturer's quality system.

3.2 Manager of the quality system

Within the manufacturer's organisational structure an employee must be designated for being in charge of managing the quality system.

3.3 Internal quality control/quality plan

As part of the quality system the manufacturer shall implement an internal quality control schedule (IQC-scheme).

In this IQC-scheme the following shall be demonstrably recorded:

- which aspects are inspected by the manufacturer;
- according to which methods these inspections are carried out;
- how often these inspections are carried out;
- how the inspection results are registered and stored.

This IQC-schedule shall be in the format as shown in the annex. The schedule shall be detailed in such a way that it provides Kiwa sufficient confidence that requirements will be continuously fulfilled.

3.4 Procedures and work instructions

The manufacturer shall be able to submit procedures for:

- the handling of non-conforming products;
- corrective actions in case non-conformities are found;
- the handling of complaints regarding the products and / or services supplied;
- the work instructions and inspection sheets in use
- instructions for packaging and closing off of products during storage and transport.

3.5 Other Quality system requirements

The quality system of the production location shall be ISO 9001 certified. The ISO 9001 quality system may be combined with the IQC scheme.

4 Summary of tests and inspections

This chapter contains a summary of tests and inspections to be carried out during:

Initial evaluation:

the investigation necessary in order to determine whether all requirements of the evaluation guideline are fulfilled.

Inspection visit:

the surveillance inspections carried out after issue of the certificate in order to determine whether the certified products continuously fulfil the requirements of this evaluation guideline. The inspections are carried out according to the frequency indicated.

Inspection of the quality system:

inspection with regard to the correct implementation of the IQC-schedule and procedures.

4.1 Test matrix

Description of requirement	Clause guideline or standard	Test within the scope of		
		Initial evaluation tests	Surveillance by CI after issue of the certificate ¹⁾	
			Inspection ²⁾	Frequency
NEN-EN 1254-1 requirements to be met:				
General	4.1	X		
Materials	4.2	X	X	Once a year
Dimensions and tolerances	4.3	X	X	Once a year
Design and manufacture	4.4	X	X	Once a year
Production test requirements	4.5	X	X	Once a year
Type test requirements	4.6	X		
Leak tightness under internal hydrostatic Pressure	4.6.1	X		
Resistance to stress corrosion	4.6.2	X	X	Once a year
Designation	6	X	X	Once a year
Marking	7	X	X	Once a year
Documentation	8	X	X	Once a year

NEN-EN 1254-4 requirements to be met:				
Material tests	4.1	X	X	Once a year
Screwed union connections Pressure test	4.2	X	X	Once a year
Thread dimensions Table 2 and 4, NEN-EN 10226-1	4.3	X	X	Once a year
Tightening systems	4.4	X		
Minimum wall thickness	4.5	X	X	Once a year
Minimum bore for unequal ended fittings	4.6	X		
Minimum outside diameter of sealing face	4.7	X		
Flange-type fittings	4.8	X		
BRL-K623/02				
Other materials	2.3.3.2	X	X	Once a year
Nominal diameter	2.4.1	X	X	Once a year
Execution of the internal solder end	2.4.2	X	X	Once a year
Width across flats	2.4.3	X	X	Once a year
Reducers	2.4.4	X		
Angles	2.4.5	X		
Additional GASTEC QA approval requirements				
Connection threads	2.2	X	X	Once a year
Screwed union connections	2.3	X	X	Once a year
Rubber seals	2.4	X	X	Once a year
Marking	2.5	X	X	Once a year

- 1) In case the product or production process changes significantly, the performance requirements shall be determined again with respect to paragraph 13 of the "Kiwa regulations for product certification".
- 2) All product properties 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.

4.2 Evaluation of the quality system

During each inspection visit the quality system of the supplier shall be examined and evaluated.

4.3 Frequency of external audits

The frequency of external audits is set at 2 audits per year at the production location and/or supplier.

5 Agreements on the performance of certification

5.1 General

This chapter contains the by the Board of Experts elaborated agreements on the performance of certification by Kiwa.

5.2 Certification staff

The staff involved in the certification process is sub-divided into:

- Certification engineers: in charge of carrying out the pre-certification tests and assessing the reports of the inspectors;
- Inspectors: in charge of carrying out external inspections at the supplier's works;
- Decision-makers: in charge of taking decisions in connection with the pre-certification tests performed, continuing the certification in connection with the inspections performed and taking decisions with regard to corrective actions.

5.3 Qualification requirements for executive staff of CI that fulfil the requirements of EN 45011

The qualification of the executive staff of a CI shall fulfill the requirements of EN 45011.

The way qualification of the staff is performed shall be described in the quality manual of the CI.

EN45011	Auditor (A) pre-certification tests and inspections of companies	Inspector (B) factory, field & project visits and follow-up inspections	Decision maker (C) person deciding on granting of certificate
1 Education, general	Relevant tech. thinking and working level comparing to Bachelor Internal training in certification and Kiwa policies Training in audit skills	Tech. thinking and working level at vocational education (intermediate level) Internal training in certification and Kiwa policies Training in audit skills	Thinking and working at Bachelor level (2) Internal training in certification and Kiwa policies Training in audit skills
2 Education, specific	Training geared towards this guideline Specific courses and training (knowledge and skills)	Training geared towards this guideline Specific courses and training (knowledge and skills)	Not applicable
3 Experience, general	1 year of relevant working experience with a minimum of 4 tests of which: 1 complete pre- certification test independently, under supervision	1 year of relevant working experience with a minimum of 4 tests, 1 of which independently, under supervision	4 years of working experience, with a minimum of 1 year of experience with certification
4 Experience, specific	Detailed knowledge of certification and 4 tests relating to this specific guideline or to guidelines which are related to each other	Detailed knowledge of certification and 4 tests relating to the specific guideline or to guidelines which are related to each other	Basic knowledge of the specific certification

5.4 Qualification requirements for executive staff of a CI that are in addition set up by the Board of Experts for the subject of this evaluation guideline

No additional requirements are set up by the Board of Experts.

5.5 Qualification

Certification staff shall be demonstrably qualified by evaluation of education and experience of the above-mentioned requirements. In case qualification takes place on the basis of other criteria, then this has to be recorded in writing.

The authority for qualification rests with:

- Decision-makers:
qualification of the certification experts and inspectors;
- Management of the certification body:
qualification of the decision-makers.

6 List of referenced documents

6.1 Standards/ normative documents

All normative references in this Approval Requirements refer to the editions of the standards as mentioned in the list below.

Sorted by number:

BRL-K623/02	Evaluation guideline for the Kiwa product certificate for Plumbing fittings for capillary soldering and/or thread connections to copper tubes
EN 549: 1995	Rubber materials for seals and diaphragms for gas appliances and gas equipment
EN 45011:1998	General requirements for bodies operating product certification systems
NEN 2541: 1967	Fittings and connections for gas conduits
NEN 2542:1967	Fittings and connections with outside thread for gas conduits
NEN 2544: 1967	Coupling nuts for fittings for gas and water conduits
NEN 2545: 1967	Packing rings for fittings for gas conduits
NEN 2549 : 1968	capillary solder union piece
NEN 2550: 1968	Male screw piece, one side outside thread, for three-piece unions for gas- and water conduits
NEN 2551 : 1968	Female screw union piece
NEN 7244	Dutch edition on base of NEN-EN 12007- Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar
NEN-EN 1078: 2004	Supply for gas with an operating pressure up to and including 500 mbar – performance requirements – new estate
NEN-EN 1254-1: 1998	Copper and copper alloys – Plumbing fittings – Part 1 : Fittings with ends for capillary soldering or capillary brazing to copper tubes
NEN-EN 1254-4: 1998	Copper and copper alloys – Plumbing fittings – Part 4 : Fittings combining other end connections with capillary or compression ends
NEN-EN 1254-4:1998/C1	Copper and copper alloys – Plumbing fittings – Part 4 : Fittings combining other end connections with capillary or compression ends
NEN-EN 2078: 2001	Requirements for industrial gas installations
NEN-EN 10226-1: 2004	Pipe threads where tight joints are made on the threads
NEN-EN 12007	Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar
NPR 3378-5: 2007	Praktijkrichtlijn gasinstallaties- sectie gasleidingen – deel 5: gasleidingen-aanleg algemeen – leidraad bij NEN 1078 en NEN 8078

6.2 Replacement(s) of standard/ normative documents

Sorted by number:

Old Document	Replaced by	Replacement's title
EN 1775	-	-

Appendix A:

Model IQC-scheme or frame-IQC-scheme

Subject	Aspect	Method	Frequency	Registration
Incoming control supplied materials Metallic materials Elastomeric materials	Material data sheets Material Certificates (preferably to EN 10204 type 3.1) Appearance Dimensions Material data sheets (preferably to EN 10204 type 3.1) Density Shore hardness Appearance Dimensions			
Production process Procedures Work instructions Used apparatus	Manufacture Applied inspection methods Inspection frequency Registration and Recording inspection results.			
Finished product inspection	Applied inspection methods Inspection frequency Registration and recording inspection results.			
Status of measuring and test equipment	List of used measuring and test equipment Calibration and maintenance reports			
Logistics	Internal transport Package Storage Identification Marking			
Procedure non conforming	Registration and Recording Settlement			
Complaints procedure	Registration and Recording Settlement			

Appendix B

Number	Replaces	--
Issued	Scope	KE 6
Report number	Page	
Contract number		

Product Certificate

for the GASTEC QA product certificate for
Plumbing fittings with ends for capillar soldering and/or thread connections

Based on pre-certification tests as well as periodic inspections by Kiwa Nederland B.V., the products referred to in this certificate and marked with the GASTEC QA mark, supplied by

Manufacturer

may, on delivery, be relied upon to comply with the Provisional GASTEC QA Approval Requirements 6, Plumbing fittings with end for capillary soldering and/or thread connections (NEN-EN 1254-1 and NEN-EN 1254-4).

Bouke Meekma
Kiwa

This certificate is issued by Kiwa Nederland B.V. in conjunction with the "Kiwa regulations for carrying the GASTEC QA quality mark"

This certificate consists of.. pages.
Publication of the certificate is allowed.

Company

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Certificaat

Plumbing fittings with ends for capillar soldering and/or thread connections

PRODUCT SPECIFICATION

APPLICATION AND USE

Copper and copper alloys fittings with ends for capillary soldering or capillary brazing to copper tubes according to the GASTEC QA Approval requirements 5 and/or thread connections for the transport of gas.

MARKING

- Each fitting shall be legibly and durably marked, at the minimum, with the manufacturer's identity symbol and, if it is practicable, with the nominal diameter and the number and part of this standard.
- Fittings manufactured from dezincification resistant copper-zinc alloys grade A shall be marked with **CR** or **DRA**; grade B shall be marked **DRB**.
- The GASTEC QA work mark, logo or punch mark.

Place of the mark:

- On the fitting

Method of marking:

- Permanent marking.
-

RECOMMENDATIONS FOR CUSTOMERS:

1. Check at the time of delivery whether:
 - 1.1 the manufacturer or supplier has delivered in accordance with the agreement;
 - 1.2 the mark and the marking method are correct;
 - 1.3 the products show no visible defects as a result of transport etc.
2. If you should reject a product on the basis of the above, please contact:
 - 2.1 **Manufacturer** and, if necessary,
 - 2.2 Kiwa Nederland B.V.
3. Consult the producer's processing guidelines for the proper storage and transport methods.
4. Check whether this certificate is still valid by consulting Kiwa Nederland or the Kiwa website.