BRL K775
Validated on Month X, 202X

Assessment Guideline BRL-K775

Kiwa product certificate for
Ductile cast iron wide-tolerance couplings and flange adaptors for use with pipes made of different materials—ductile cast iron, grey cast iron, steel, PVC-U, PVC-O, PE and fibre-cement—in contact with drinking water.

kiwa

Preface

This Assessment Directive (BRL) has been accepted by the Kiwa's Board of Experts for the Water Cycle (CWK), in which all parties in the field of pipes and fittings are represented. This Board of Experts also supervises the certification activities and where necessary requires the BRL to be revised. All references to Board of Experts in this BRL pertain to the above mentioned Board of Experts.

This BRL will be used by Kiwa in conjunction with the Kiwa Regulations for Certification and BRL K14100 ‘General requirements for products in contact with drinking water’, which sets out Kiwa’s general rules for certification.

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Validation
This assessment directive has been validated by Kiwa on [month-date-year].

NOTE: THIS IS AN ENGLISH TRANSLATION OF THE DUTCH VERSION OF THIS ASSESSMENT DIRECTIVE. IN CASE OF A DISPUTE, THE DUTCH VERSION SHALL BE BINDING.

Contents

1 Introduction

1.1 General

In addition to §1.1 of BRL K14100.

References to the 'applicable' BRL in BRL K14100 mean that this BRL K775 applies.
The requirements included in this evaluation guideline will be employed by Kiwa when dealing with an application and the maintenance of a product certificate for ductile iron fittings and transfer pieces of flanges for piping systems of ductile iron, grey iron, steel, PVC-U, PE or fibre-cement for the transport of drinking water.

This BRL replaces BRL-K775/04 dated 2018-12-01:
In any case, the quality declarations issued on the basis of the latest BRL will lose their validity 2 years after binding declaration of this BRL.

1.2 Scope

In addition to §1.2 of BRL K14100.
These products are intended to be applied as piping systems for transport of drinking water at a nominal diameter according to Table 1 at a maximum water pressure of 1,6 MPa and a water temperature of 25°C.

Table 1 Minimal diameter range

Maximum outer diameter or DN of the connected piping		Minimal diameter range [mm]
Outer diameter for plastic piping [mm]	DN of other piping types [mm]	
OD ≤ 110	DN ≤ 100	10
110 < OD ≤ 225	100 < DN ≤ 200	15
225 < OD ≤ 315	200 < DN ≤ 300	20
315 < OD ≤ 400	300 < DN ≤ 400	25
400 < OD ≤ 1200	400 < DN ≤ 1200	30

1.3 Acceptance of test reports provided by the supplier

No additions and/or deviations from §1.3 of BRL K14100.

1.4 Quality declaration

In addition to §1.4 of BRL K14100.
The quality declarations to be issued on the basis of this BRL are referred to as Kiwa technical approval with product certificates.

2 Terminology

2.1 Definitions

In addition to BRL K14100 §2.1 the following terms and definitions are applicable:

- **Distribution network:** An assembly of pipes and associated fittings, valves, and other technical provisions for the transport and delivery of drinking water, not being a collective pipe network (source: Drinking Water Act);
- **PFA**: Maximum hydrostatic pressure that a product can continuously withstand in use;

3 Procedure for granting a Kiwa-product certificate

No additions and/or deviations from chapter 3 of BRL K14100.

4 Product requirements

4.1 General

This chapter contains the requirements that the ductile iron fittings and transfer pieces of flanges for piping systems of ductile iron, grey iron, steel, PVC-U, PE or fibre-cement shall meet, as well as the test methods in order to establish compliance with the requirements are detailed in §4.2.3.

The certificate holder shall ensure a clear and unambiguous description of all relevant design data, including:

- the production and/or manufacturing process,
- constituent raw materials, materials, and products,
- the formulation, where applicable.

Any intended change to the above parameters shall be reported to the certification body. The certification body shall assess whether the change may affect the attested performance(s) and the certified products, in which case a reassessment of the relevant performance(s) is required.
The certification body determines what constitutes a significant change. Once it has been established that the products incorporating the proposed change comply with the requirements of Chapter 4, the change may be implemented in the certificate holder's production process.

4.2 Materials

4.2.1 The following requirements shall apply to the raw materials, semi-finished products and/or materials used in the production process.

4.2.2 Hygenic aspects

4.2.3 The products shall demonstrably comply with the requirements specified in BRL K14101, "Hygienic aspects for products in contact with drinking water and hot tap water".

4.2.4 Lubricants

Lubricants that are used during assembly or in permanent service and that come into contact with drinking water shall comply with article 4.2.1.

4.3 Product requirements

The product requirements are specified in the following standard, except for those clauses for which requirements are given in clause 4.3.2.

NEN-EN 14525 "Ductile iron and steel wide tolerance couplings and flange adaptors for use with pipes of different materials: ductile iron, grey iron, steel, PVC-U, PVC-O, PE, fibre-cement."

4.3.1 Additional product requirements

In addition to the requirements specified in §4.3 , the following applies:

4.3.1.1 Hygienic treatment of products in contact with drinking water

The supplier shall have a procedure in place for protecting the products in such a way that hygiene is ensured during storage and transport.
In addition, the supplier shall inform customers about the handling of products supplied under certificate that come into contact with drinking water and hot tap water, covering the period from arrival at the construction site up to and including installation and commissioning.
The primary purpose of this information is to contribute to awareness of the importance of hygienic working practices as a preventive measure.

4.3.1.2 Flanges

In addition to clause 4.1.3.3 of NEN-EN 14525, non-standardized flanges are permitted, provided that for type testing the required matching pipes and blind flanges are made available.

4.3.1.3 Rubber materials for elastomeric sealing elements

Rubber shall comply with the requirements relating to its influence on drinking water and with the physical and mechanical properties specified in BRL-K17504, “Vulcanized rubber products for cold and hot drinking water applications”.

> **Remark:** If rubber components are used that are covered by a Kiwa product certificate in accordance with BRL-K17504, this requirement is deemed to be fulfilled.

4.3.1.4 Corrosion-protective coatings

Corrosion-protective coatings and paint systems shall comply with the requirements relating to their influence on drinking water installations as specified in BRL-K759, “Coating systems for drinking water installations”.

> **Remark:** Where a coating is used that is covered by a Kiwa product certificate in accordance with BRL-K759, this requirement shall be deemed to be fulfilled.

4.3.1.5 Diameters to be tested

In addition to Clause 5.1 of NEN EN 14525, testing shall be carried out on at least one OD or DN for each of the following groups:

- OD 40 mm to 140 mm for plastic pipes or DN 40 to DN 125 for other pipes (preferably around 100 mm);
- OD 160 mm to 315 mm for plastic pipes or DN 150 to DN 300 for other pipes (preferably around 200 mm);
- OD 355 mm to 630 mm for plastic pipes or DN 350 to DN 600 for other pipes (preferably around 400 mm);
- OD 710 mm to 1200 mm for plastic pipes or DN 700 to DN 1200 for other pipes (preferably around 1000 mm).

4.3.1.6 Minimum wall thickness

In addition to Clause 4.2.1 of NEN-EN 14525, the minimum wall thickness of the ductile cast iron shall, at every point, be as specified in table 2:

Table 2 Minimum wall thickness

Maximum OD or DN of the pipes to be connected		Minimum wall thickness [mm]
OD for plastic pipes [mm]	DN for other pipes [mm]	
OD ≤ 225	DN ≤ 200	4.0
225 < OD ≤ 315	200 < DN ≤ 300	5.0
315 < OD ≤ 630	300 < DN ≤ 600	6.0
630 < OD ≤ 800	600 < DN ≤ 800	7.0
800 < OD ≤ 1200	800 < DN ≤ 1200	8.0

4.3.1.7 Joint gap and depth of engagement

In addition to Clause 4.2.3 of NEN-EN 14525, the maximum value of the joint gap between the pipes shall be not less than the values specified in Table 3.

Table 3 Minimum values of maximum joint opening

Maximum OD or DN of the pipes to be connected		Space in between the pipe and insertion depth [mm]
OD for plastic pipes [mm]	DN for other pipes [mm]	
OD ≤ 110	DN ≤ 100	15
110 < OD ≤ 225	100 < DN ≤ 200	20
225 < OD ≤ 315	200 < DN ≤ 300	30
315 < OD ≤ 400	300 < DN ≤ 400	40
400 < OD ≤ 630	400 < DN ≤ 600	50
630 < OD ≤ 800	600 < DN ≤ 800	60
800 < OD ≤ 1200	800 < DN ≤ 1200	70

4.3.1.8 Permittable angular deflection in axial direction

In addition to Clause 4.2.4 of NEN EN 14525, the angular deflection in the axial direction specified by the manufacturer shall not be less than:

- 3° for OD 40 mm to 315 mm or DN 40 to DN 300;
- 2° for OD 316 mm to 800 mm or DN 350 to DN 800;
- 1.5° for OD 800 mm to 1200 mm or DN 800 to DN 1200.

5 Test methods

5.1 General

All tests defined in Chapter 7 of NEN-EN 14525 are summarized in Clause 8.1 of this BRL, with the exception of the deviation specified in 5.2.

5.2 Alternative method for NEN-EN 14525 clause 7.5 “Pull out test”

In addition to Clause 5.5.2 of NEN-EN 14525, it is permitted to generate the axial stress specified for plastic pipes > DN 400 by means of internal pressure, in accordance with Clause 7.1 of NEN-EN 14525 and test P2 as defined in Table 6. In this case, the requirement for a displacement rate of 25 mm/min does not apply, provided that the introduced water volume is selected such that it is volumetrically as close as possible to this value.

Explanation: At the time this BRL was drawn up, no equipment (such as a tensile testing machine) was available to perform all tests specified in this BRL for sizes above DN 400. Pipes up to and including DN 400 can be tested in accordance with the NEN-EN 14525 test methodology.

5.2.1 Test set-up

The test set-up from the successfully completed long-term hydrostatic strength test shall be used.

5.2.2 Equipment

The equipment shall be capable of generating the axial stress by means of internal pressure, in accordance with Clause 7.1 of NEN-EN 14525 and test P2 as specified in Table 6.

5.2.3 Testing procedure

The test shall be carried out at a temperature of 25 °C with a tolerance from 0 °C to −4 °C. An axial tensile force shall be applied to the fitting under test by means of internal pressure, in accordance with Clause 7.1 of NEN-EN 14525 and test P2 as specified in Table 6, until the maximum load is reached.

The joint shall be deemed to have passed the test provided that the minimum load, as calculated in Clause 5.5.2 of NEN-EN 14525, is achieved without pull-out occurring and that no further axial movement takes place once the test load has been reached.

If the pipe fails by fracture, the test shall be repeated using a completely new test assembly. If the pipe deforms at a distance greater than 0.1 L from the opening of the socket or the gripping device, the joint shall be considered to comply with the requirements of this test.

6 Marking

6.1 General

The following markings and designations shall be affixed to each product in a clear and durable manner:

6.1.1 General product markings

The following markings and indications shall be clearly and durably applied to each product in accordance with Clause 4.5.1 of NEN-EN 14525.

The markings listed below shall be cast-in or stamped:

a. the manufacturer's name and/or registered trademark, and the location where the product was cast;
b. the year of manufacture;
c. the material designation in accordance with Clause 4.3 of NEN-EN 14525;
d. DN and PN for flanges and flange components;
e. a reference to NEN-EN 14525;
f. identification of the minimum and maximum pipe diameters;
g. the PFA of the fitting;
h. identification of suitability for drinking water applications.

For cast products, markings a) and b) shall be cast-in or applied by stamping. The remaining markings may be applied by any suitable method, for example by marking on the coating of the product or on the packaging.

6.1.2 Additional product information

In addition, the information as specified in Clause 4.5.2 of NEN EN 14525 shall be supplied with each product, including:

- the maximum joint gap between two pipe ends and the minimum depth of engagement;
- the minimum joint gap between two pipe ends and the maximum depth of engagement;
- the pipe materials for which the fittings, reducing fittings and flanged fittings are suitable; this applies both to non restrained fittings as well as to restrained fittings and restrained flanged fittings;
- where applicable, the use of internal support bushes;
- the minimum and maximum tightening torque for bolts and nuts

The installation and operating instructions shall be supplied with the product or made available digitally.

6.2 Certification mark

After concluding a Kiwa certification agreement, the certification mark shall also be permanently and indelibly applied to the product.
For products intended for contact with drinking water:
The Kiwa Water Mark "**KIWA** ".

7 Requirements in respect of the quality system

No additions and/or deviations from chapter 7 of BRL K14100.

8 Summary of investigations required for type testing and inspections

This chapter provides a summary of the work to be carried out during certification:

8.1 Test matrix

Description of requirement	Article BRL	Investigation within the scope of	
		Pre-certification	Supervision after certificate is granted [a), b)]
BRL-K775			
Suitability for contact with drinking water	4.2.1	X	X
Lubricants	4.2.2	X	X
Hygienic treatment of products in contact with drinking water	4.3.1.1	X	X
Flanges	4.3.1.2	X	X
Rubber for elastic sealing elements	4.3.1.3	X	X
Corrosion-resistant protective coatings	4.3.1.4	X	X
Diameters to be tested	4.3.1.5	X	
Minimum wall thickness	4.3.1.6	X	X
Joint gap and depth of engagement	4.3.1.7	X	X
Permittable angular deflection in axial direction	4.3.1.8	X	X
Marking			
General	6.1.1	X	X
General product marking	6.1.2	X	X
Certification mark	6.2	X	X
NEN-EN 14525			
Diameter range	4.1.1	X	
Surface condition and repairs	4.1.2	X	
Types of joints and interconnection	4.1.3	X	
Rubber packings general	4.1.3.1	X	X
Flexible joints	4.1.3.2	X	X
Flanged joints	4.1.3.3	X	X
Materials in contact with water intended for human consumption	4.1.4	See BRL-K775 article 4.2.1	
Minimum wall thickness of ductile iron couplings and flange adapters	4.2.1	X	X
Minimum wall thickness of steel couplings and flange adaptors	4.2.2	X	X
Joint gap and depth of engagement	4.2.3	X	X

[a)] In the event of changes to the product or production process Kiwa shall, in consultation between the supplier, determine whether the product meets the performance requirements..

b) During the inspection, the inspector checks the products against a selection of the product requirements as detailed above. The frequency of inspection visits is specified in §9.5 of BRL K14100.

9 Agreements on the implementation of certification

No additions and/or deviations from chapter 9 of BRL K14100.

10 List of referenced documents

10.1 Public law and Rules and Regulations

BJZ2011048144 June 29th, 2011	Regulation of the State Secretary for Infrastructure and the Environment laying down rules on materials and chemicals used in drinking water and hot tap water supply (Regulation on materials and chemicals for drinking water and hot tap water supply)[1]

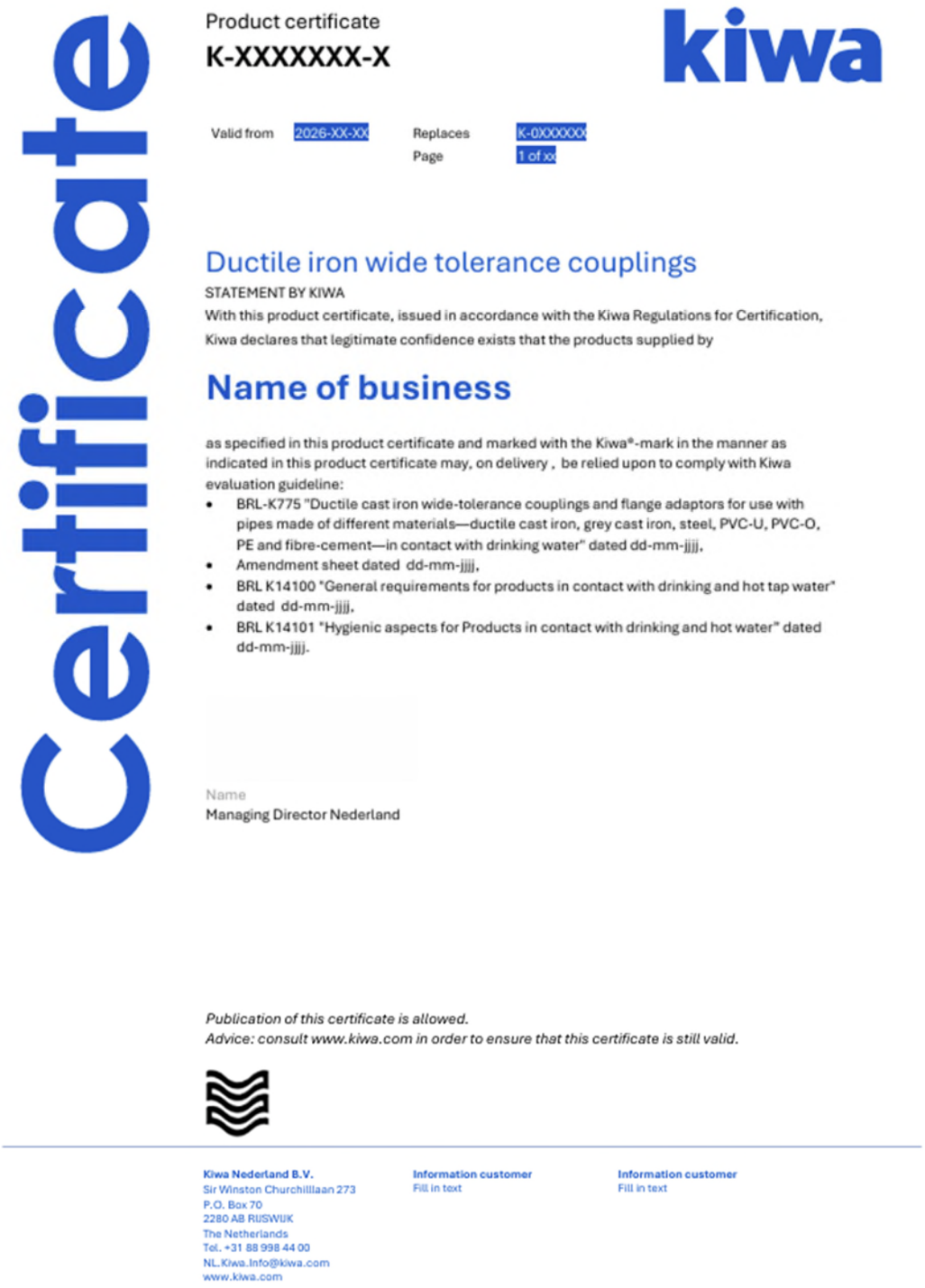
10.2 Normative documents

Number	Title
BRL-K759	Coating systems for drinking water applications
BRL-K17504	Vulcanized rubber products for cold and heated drinking water applications
NEN-EN 14525	Ductile cast iron wide-tolerance couplings and flange adaptors for use with pipes made of different materials: ductile cast iron, grey cast iron, steel, PVC-U, PVC-O, PE and fibre-cement.
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-EN-ISO/IEC 17020	Conformity assessment - General criteria for the operation of various types of bodies performing inspection
NEN-EN ISO/IEC 17021-1	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

Remark: if standards or normative documents are dated:
An annual verification will take place to verify if the normative documents are still up to date. Modifications of the applicable normative documents will be published on the services page of Kiwa's website.

[1] Valid from July 1st, 2017 onwards

Annex I Product certificate (example)



Certificate

Product certificate

K-XXXXXXX-X

kiwa

Valid from 2026-XX-XX Replaces K-0XXXXXX

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Ductile iron wide tolerance couplings

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 of business

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-K775 "Ductile cast iron wide-tolerance couplings and flange adaptors for use with pipes made of different materials—ductile cast iron, grey cast iron, steel, PVC-U, PVC-O, PE and fibre-cement—in contact with drinking water" dated dd-mm-jjjj.
- Amendment sheet dated dd-mm-jjjj.
- BRL K14100 "General requirements for products in contact with drinking and hot tap water" dated dd-mm-jjjj.
- BRL K14101 "Hygienic aspects for Products in contact with drinking and hot water" dated dd-mm-jjjj.

Name

Managing Director Nederland

Publication of this certificate is allowed.

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

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Information customer
Fill in text

Information customer
Fill in text

20250801

PRODUCT SPECIFICATION
The products mentioned below belong to this product certificate
Fill in text

Fitness for contact with drinking water
This product is approved on the basis of the requirements for hygienic aspects set in the "Regeling materialen en chemicaliën drink- en warm tapwatervoorziening" ("Materials and chemicals in the supply of drinking water and warm tap water Regulation" dated 01-07-2017; published in the Government Gazette).

These hygienic aspects are based on two main criteria. The product shall permanently comply with:
- The product recipe approved during the assessment procedure. This recipe is not to be changed without prior approval by Kiwa according to the Kiwa approval procedure for the hygienic aspects;
- Specific product requirements for the hygienic aspects.

The recipe and specific product requirements are laid down in the for confidentiality reasons undisclosed 'appendix hygienic aspects' to this certificate.

MARKING
The Kiwa®-mark products are marked with the word mark "KIWA" / "KIWA".
Place of the mark: Fill in text

*) for small fittings marking with only KK is permitted

Compulsory specifications:
- the manufacturer's name and/or registered trademark, and the location where the product was cast ;
- the year of manufacture;
- the material designation in accordance with Clause 4.3 of NEN-EN 14525;
- DN and PN for flanges and flange components ;
- a reference to NEN-EN 14525;
- identification of the minimum and maximum pipe diameters;
- the PFA of the fitting;
- dentification of suitability for drinking water applications.

Method of marking:
- Non-erasable;
- visible after assembly.

APPLICATION AND USE
These products are intended to be applied as piping systems for transport of drinking water at a nominal diameter according to Table 1 at a maximum water pressure of XX MPa and a water temperature of 25°C.

RECOMMENDATIONS FOR THE CUSTOMERS
Check at the time of delivery whether:
- the supplier has delivered in accordance with the agreement;
- the mark and the marking method are correct;
- the products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:
- Name of business

and, if necessary,
- Kiwa Nederland B.V.

Consult the supplier's processing guidelines for the proper storage and transport methods.