BRL 5221
October 13, 2016

Evaluation Guideline

For the KOMO® product certificate of

Adhesives for joints in plastics piping systems for non-pressure sewerage inside buildings

Adopted by the CvD LSK d.d. 11-07-2016

Accepted by the KOMO Quality- and Screening Commission d.d. 13-10-2016

Preface Kiwa

This Evaluation Guideline has been prepared by Kiwa´s Board of Experts " Plastics piping systems (Leidingsystemen Kunststof, CvD- LSK), in which the parties interested in the field of adhesives for joints in plastics piping systems for sewerage inside buildings are represented. This Board of Experts also guides the performance of certification and adjusts this Evaluation Guideline where necessary. Wherever the term 'Board of Experts' is used in this Evaluation Guideline, the above-mentioned Board of Experts is meant.

Kiwa will use this Evaluation Guideline in conjunction with the Kiwa Regulations for Product Certification. These regulations detail the methods employed by Kiwa for conducting the necessary investigations prior to issuing the product certificate and the method of the external control.

This Evaluation Guideline is based on EN 14680:2015 and will replace the BRL of 2013 (which was based on EN 14680:2006).

Declared in force
This Evaluation Guideline is declared in force by Kiwa per October 13, 2016.

Kiwa Nederland B.V.
Sir W. Churchill-laan 273
P.O. Box 70
2280 AB RIJSWIJK ZH
The Netherlands

Tel +31 (0)88 998 44 00
Fax +31 (0)88 998 44 20
info@kiwa.nl
www.kiwa.nl

Table of Contents

1 Introduction

1.1 General

The requirements embodied in this Evaluation Guideline (BRL), shall be employed by certification institutes that are accredited by the Dutch Accreditation Council (RvA) and have a license agreement with KOMO Foundation when dealing with applications for the issue or maintenance of a product certificate for Adhesives for joints in plastics piping systems for sewerage inside buildings

Besides the requirements embodied in this Evaluation Guideline, certification institutes impose additional requirements in the sense of requirements with regard to general procedures for certification as laid down in the general certification regulations of the respective certification body.

This Evaluation Guideline replaces BRL 5221 dated 31 October 2008 and amendment dated 31 December 2014.
Product certificates issued on the basis of that Evaluation Guideline and the amendment loose their validity at most after one year after binding declaration.

During the execution of certification activities, the certification bodies have to fulfil the requirements as laid down in the chapter 'Requirements imposed on the certification body'.

1.2 Field of application

This Evaluation Guideline applies to adhesives for joints in plastics piping systems for non-pressure sewerage inside buildings according to NEN-EN 1329 (PVC-U), NEN-EN 1455-1 (ABS), NEN-EN 1566-1 (PVC-C) and NEN-EN 1565-1 (PVC+SAN) with nominal outside diameters up to and including 160mm and waste water temperatures up to 90 °C.

1.3 Relation to European Construction Products Regulation (CPR, EU 305/2011)

For the products within the field of application in this Evaluation Guideline the harmonized European product standard EN 14680;2006 is applicable.

1.4 Requirements for conformity assessing bodies

If the supplier submits reports from research bodies or laboratories to show that the requirements of the evaluation guideline are met, then these reports have to be prepared by a body meeting the prevailing accreditation standard, i.e.:

- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN ISO/IEC 17021-1 or NEN-EN ISO/IEC 17021for 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:
NEN-EN ISO/IEC 17021-1 is published at the 1st of July 2015 and will replace NEN-EN ISO/IEC 17021. For this replacement a period of 2 years is in force.

The body is deemed to meet these criteria if an accreditation certificate can be submitted which has been issued by the Dutch Accreditation Council (RvA) or an accreditation body with which the Dutch Accreditation Council has concluded a mutual acceptance agreement. If no accreditation certificate can be submitted, the certification body shall verify whether the accreditation standard has been met.

1.5 Product certificate

Based on the KOMO-system applicable to this Evaluation Guideline, a KOMO® certificate is issued for:

- Product certificate for adhesive for joints. The claims in this product certificate are based on chapters 4 and 5 (Product requirements and determination methods and Quality System requirements) of this Evaluation Guideline.

On the website of 'Stichting KOMO' (www.komo.nl) the templates for product certificates applicable for this Evaluation Guideline are given. The product certificate to be issued should match.

2 Terminology

For definitions in coherence to certification, one is referred to the website of the KOMO foundation (www.komo.nl) and the regulations of the certifying body.

2.1 General definitions

2.1.1 Supplier

The party responsible for ensuring that the design of products continuously fulfils the requirements of this Evaluation Guideline.

2.1.2 IQC-scheme (Internal Quality Control-scheme)

A description of the quality inspections carried out by the manufacturer as part of this quality system.

2.2 Requirements and determination methods

In this Evaluation Guideline requirements and determination methods are included, by which the following is meant:

2.2.1 Product requirements

Requirements made specific by means of measures or figures, focusing on (identifiable) characteristics of products and containing a limiting value to be achieved, which limiting value can be calculated or measured in an unequivocal manner.

2.2.2 Determination methods

Initial certification tests: tests in order to ascertain that all the requirements recorded in the Evaluation Guideline are met.
Inspection tests: tests carried out after the certificate has been granted in order to ascertain whether the certified products continue to meet the requirements recorded in the Evaluation Guideline.

3 Procedure for obtaining a product certificate

3.1 Initial assessment

For the purpose of obtaining a KOMO product certificate, the certificate body conducts an initial assessment including:

- Assessment of the documents provided or to be provided by the applicant according to the requirements as set in this Evaluation Guideline;
- (Sample) tests, in order to determine whether the material properties fulfil the requirements according to this Evaluation Guideline.

3.2 Assesment of the quality system

For the purpose of obtaining a KOMO product certificate in relation to product characteristics the certificate body conducts an assessment. The initial assessment includes:

- Assessment of the production process
- Assessment of the quality system and the IQC scheme
- Assessment of the presence and the functioning of the other required procedures

It needs to be determined whether the quality system complies with the requirements set out in chapters 5 and 7 (Quality System requirements and Requirements to the certification body) of this Evaluation Guideline.

3.3 Issue of the product certificate

After completion of the initial assessment the results are presented to the decision-maker. The decision-maker assesses the obtained results and determines if the product certificate can be granted, or that some information is missing and/or more research is needed before the product certificate can be granted.

4 Product requirements and determination methods

4.1 General

In this chapter the product requirements have been recorded which adhesives for joints in plastics piping systems for sewerage inside buildings have to fulfill together with the test methods to determine whether the requirements are fulfilled.

4.1.1 General considerations (article 4.1 of EN 14680)

The manufacturer of the adhesive shall meet the requirements of article 4.1 of EN 14680.
The test pieces shall meet the requirements of article 4.1 of EN 14680.

4.1.2 Resistance to pull out (article 4.2&5.1 of EN 14680)

Product requirement (article 4.2 of EN 14680)

The adhesive shall meet the requirements of article 4.2 of EN 14680.

Testing method (article 5.1 of EN 14680)

The adhesive shall be tested in accordance with EN-ISO 9311-2 using pipe and fitting compatible with the claims of the adhesive suitability.

4.1.3 Tightness (article 4.3&5.2 of EN 14680)

Product requirement (article 4.3 of EN 14680)

The adhesive shall meet the requirements of article 4.3 of EN 14680.

Testing method (article 5.2 of EN 14680)

The adhesive shall be tested in accordance with NEN EN 1055 application “B” using pipe and fitting compatible with the claims of the adhesive suitability.

4.1.4 Resistance for high temperature (article 4.4&5.2 of EN 14680)

Product requirement (article 4.4 of EN 14680)

The adhesive shall meet the requirements of article 4.4 of EN 14680.

Testing method (article 5.2 of EN 14680)

The adhesive shall be tested in accordance with NEN EN 1055 application “B” using pipe and fitting compatible with the claims of the adhesive suitability.

4.1.5 Durability (article 4.7&5.5&5.2 of EN 14680)

Product requirement (article 4.7 of EN 14680)

The adhesive shall meet the requirements of article 4.7 of EN 14680.

Testing method (article 5.5&5.2 of EN 14680)

The adhesive shall be tested in accordance with NEN EN 1055 application “B” using pipe and fitting compatible with the claims of the adhesive suitability.

4.1.6 Shelf life (article 4.5&5.3 of EN 14680)

Product requirement (article 4.5 of EN 14680)

The adhesive shall meet the requirements of article 4.5 of EN 14680.

Testing method (article 5.3 of EN 14680)

The adhesive shall be tested in accordance with article 5.3 of EN 14680.

4.2 Marking

After conclusion of the certification agreement, each container of adhesive shall be provided with the following clearly legible and indelible markings:

- KOMO logo (or KOMO® word mark) with certificate number;;
- Manufacturer's or suppliers name and trade mark or identification mark of the adhesive;
- Application area: non-pressure sewerage systems inside buildings;
- Standard for which plastics piping system the adhesive is suitable (e.g. PVC-U, PVC-C, ABS or SAN+ABS);
- Batch number;
- Date of manufacturing or "use before date", and a statement to the effect that the adhesive has a shelf life of minimum 12 months when stored in unopened containers in accordance with the manufacturer's instructions;
- Any safety precautions and instructions relating to use and storage.

.

The label should be in the language of the country in which the product is sold.

5 Quality System requirements

5.1 General

This chapter contains the requirements that have to be met by the supplier's quality management system

5.2 Manager of the quality system

Within the supplier's organizational structure an employee must have been appointed who is in charge of managing the supplier's quality system.

5.3 Internal quality control/quality plan

The supplier must have an implemented and operational internal quality control scheme in place (IQC-scheme).

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

- materials used in the product
- which aspects are checked 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-scheme shall be derived from the example format as shown in the annex. The scheme must be detailed in such a way that it provides CI sufficient confidence that the requirements of this Evaluation Guideline are continuously fulfilled.

5.4 Management of laboratory- and measure apparatus

The supplier must determine which laboratory- and measure apparatus are needed based on this Evaluation Guideline in order to demonstrate the product fulfils the requirements.

When applicable laboratory- and measure apparatus need to be calibrated at specified intervals.

The supplier needs to validate and register the previous measure results, when at the time of calibration is determined that the laboratory and measure devices are not operating correctly.

The apparatus in question need to be marked in such a way that can be determined what the calibration status is.

The supplier is required to register the calibration results.

5.5 Procedures and work instructions

The supplier must 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;
- managing work instructions and inspection sheets in use.

5.6 Other requirements imposed on the quality system

In case the quality system of the supplier is certified on the basis of ISO 9001, a combination can be made with the IQC-scheme.

6 Summary of tests and inspections

6.1 Testmatrix

The table below contains a summary of the tests and inspections to be carried out in the event of certification. The following definitions are used.

- **Initial tests:** The test to determine if all demands are met as stated in the Evaluation Guideline.
- **Inspection:** the evaluation tests which is held after issuing of the certificate in order to determine if the certified products are meeting the demands continuously; thereby is also noted at what frequency inspections by the certifying institute (CI) are needed.
- **Evaluation of the quality system:** evaluation of the compliance to the IKB schedule and procedures.

Description of requirement	**Article BRL**	**Tests within the scope of**			
		Pre-certification tests	**Supervision by CI after granting of the certificate[1)]**		
			Inspection visit[2)]	**Sample during visit**	**Frequency (per year[3)])**
Product requirements					
Resistance to pull out[4]	4.1.2	X	X	X	1 x
Tightness	4.1.3	X	X	X	1 x
Resistance for high temperature	4.1.4				
Durability	4.1.5				
Shelf life	4.1.6	X	X	X	1 x
Marking	4.2	X	X		1 x

1) When significant changes of the product or production process occur the performance requirements have to be determined once again.

2) All product properties which can be determined within the inspection time (maximum 1 day) are determined by the inspector or by the certificate holder in presence of an inspector. When this is not possible arrangements, how inspection will take place, will be made for this aspect between the CB and the certificate holder.

3) The frequency of testing the product is at least once a year. From those test at least one every 2 years by the laboratory of the certification institute. The other year also other accredited laboratories can be used.

4) Initial type testing will be done on 5 test pieces, Testing for controls will done on 3 test pieces.

6.2 Evaluation of the quality system

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

7 Requirements imposed on the certification body

7.1 General

The certification body has to be accredited for the subject of this Evaluation Guideline on the basis of NEN-EN-ISO/IEC 17065 by the Dutch Accreditation Council (RvA) and have a license of KOMO.

The certification body must have the disposal of a regulation, or an equivalent document, in which the general rules for certification are laid down. In particular these are:

- The general rules for carrying out the initial tests, to be distinguished in:
  - The way suppliers are informed about the handling of the application;
  - Execution of the initial tests;
  - The decision with regard to the initial tests executed.
- The general rules with regard to the execution of inspections and the inspection aspects to be employed;
- The measures to be taken by the certification body in the event of non-conformities;
- The measures to be taken by the certification body in the event of illegitimate use of certificates, certification marks, icons and trademarks.
- The rules for termination of the certificate;
- The possibility of lodging appeal against decisions or measures made by the certification body.

7.2 Certification staff

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

- Certification assessor/ Reviewer: in charge of review of the by the supplier supplied or to be supplied construction drawings and documents, admissions, reviewing of applications and the review of conformity assessments;
- Site assessor: in charge of carrying out external inspections at the supplier's works;
- Decision-maker: in charge of taking decisions in connection with the initial tests performed, continuing the certification in connection with the inspections performed and making decisions on the need of corrective actions.

7.2.1 Competence requirements

Distinguished are:

- Competence requirements for executive certification staff of a CI that fulfil the requirements of NEN-EN-ISO/IEC 17065;
- Competence requirements for executive certification staff of a CI that are in addition set up by the Board of Experts for the subject of this Evaluation Guideline.

Both education and experience of the relevant certification personnel must be visibly documented.

	Certification assessor/ Reviewer	Site assessor	Decision-maker
General competence			
General education	• Higher vocational education	• Intermediate technical vocational education	• Higher vocational education
Knowledge of company processes Competence for professional evaluation	• 1 year workexperience	• 2 years workexperience • audittraining	• 5 years workexperience of which 1 year in certification
Technical competence			
Knowledge of the Evaluation Guideline	• Detailed knowledge of the specified Evaluation Guideline in question or the Evaluation Guideline's related to each other.	• Witness inspection • Knowledge of the chapters of the Evaluation Guideline which relate to the quality system and the tests.	• n/a
Relevant knowledge of: • The technology involved with producing the products to be inspected, the excecution of processes and the provisioning of services. • The way products are used, processes are applied and services are rendered; • Any deficiency that can occur during use of the product, any mistake that can be made during the use of a product and any imperfection in the rendering of services.	• Relevant technical higher vocational education work and intellectional level. • At least 1 year of experience in production, testing, inspection and or in the installation trade, including: - 2x inspections under supervision • Or internal training course including: - 2x inspections under supervision	• Intermediate technical vocational education work and intellectional level. • At least 1 year of experience in production, testing, inspection and or in the installation trade, including: - 3x inspections under supervision - 1x independent inspection • Or internal training course including: - 3x inspections under supervision - 1x independent inspection	• n/a

7.2.2 Qualification

Certification staff must be demonstrably qualified by evaluation of education and experience of the above-mentioned requirements.
The authority for qualification rests with the management of the certification body

7.3 Report initial tests

The certification body records the results of the initial tests in a report. The report must fulfil the following requirements:

- Completeness: the report judges about all requirements of the Evaluation Guideline;
- Traceability: the findings whereupon the judgements are based must be recorded in a traceable way;

With regard to granting the certificate, the decision-maker must be able to base his decision upon the findings recorded in the report.

7.4 Decision with regard to the issue of the certificate

The decision with regard to the issue of the certificate must be made by a qualified decision-maker, who was not involved at the initial tests. The decision must be traceable recorded.

7.5 Nature and frequency of external inspections

The certification body must enforce inspections at the supplier's site to investigate whether the obligations are met. The Board of Experts advises about the number of inspection visits required. At the time of validation of this Evaluation Guideline this frequency has been fixed at four inspection visits per year.

In case the quality system of the supplier is certified on the basis of ISO 9001, the frequency is set at two inspection visits per year.
If the supplier is a private label owner (identical certificate derived from an (technical approval-with-)product certificate) then the frequency is set at 1 inspection per 2 year.

Inspections shall invariably include:

- The IQC-scheme of the supplier and the results of tests carried out by the supplier;
- The correct marking of the certified products;
- The compliance with the required procedures.

The findings of the inspection visits performed shall be traceably recorded, by the certification body, in a report.

7.6 Report to the Board of Experts

The certification body reports at least once a year about the certification activities performed. In this reporting, the following subjects must be addressed:

- Mutations in number of certificates (new/cancelled);
- Number of inspections carried out in relation to the fixed frequency;
- Results of the inspections;
- Measures imposed in case of non-conformities;
- Complaints received from third parties concerning certified products.

7.7 Interpretation of requirements

The Board of Experts may lay down the interpretation of this Evaluation Guideline in a separate interpretation document.
The certification body is obliged to inform whether an interpretation document is available. If this is the case, then the interpretations as laid down in the interpretation document must be employed.

7.8 Sanction policy

The sanction policy and the weighing of shortcomings is available on the service page on the website of the certification body, which has formulated this quality assessment.

8 List of mentioned documents

8.1 Dutch Construction Order

Bouwbesluit 2003 (Stb. 2001, 410; Stb. 2002, 203, 516, 518 en Stb. 2005, 1, 528 en de Ministeriële Regeling Stcrt. 2002, 241; Stcrt. 2003, 101).

8.2 Norms/ normative documents:

EN 1055: 1996	Plastics piping systems - Thermoplastics piping systems for soil and waste discharge inside buildings - Test method for resistance to elevated temperature cycling
EN 1329-1: 2014	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Unplasticized poly(vinylchloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the system
EN 1455-1: 2000	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Acrylonitrile-butadiene-styrene (ABS) - Part 1: Requirements for pipes, fittings and the system
EN 1565-1:1999/C1: 2000	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Styrene copolymer blends (SAN+PVC) - Part 1: Specifications for pipes, fittings and the system
EN 1566-1:1999/C1: 2000	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Chlorinated poly(vinyl chloride) (PVC-C) - Part 1: Requirements for pipes, fittings and the system
EN 14680: 2015	Adhesives for non-pressure thermoplastic piping systems – Specifications
ISO 9311-2:2011	Adhesives for thermoplastics piping systems - Part 2: Determination of shear strength
EN-ISO-9001:2015	Quality management systems
NEN-EN-ISO/IEC 17020: 2012	Conformity assessment - General criteria for the operation of various types of bodies performing inspection
NEN-EN-ISO/IEC 17021-1: 2015	Conformity assessment - Requirements for bodies providing audit and certification of management systems
NEN-EN-ISO/IEC 17024: 2012	Conformity assessment - General requirements for bodies operating certification of persons
NEN-EN-ISO/IEC 17025: 2005+C1:2007	General requirements for the competence of testing and calibration laboratories
NEN-EN-ISO/IEC 17065: 2012	Conformity assessment - Requirements for bodies certifying products, processes and services

Annex A: Example IQC-scheme for product manufacturer

<table>
<tr><td><u>IQC-schedule</u>

<u>INTERNAL QUALITY PLAN</u></td><td>Manufacturer / supplier :
Production location address :</td><td>Number of appendices:</td></tr>
<tr><td colspan="3"><u>Field(s) of application</u>

<u>According Evaluation Guideline(s)</u></td></tr>
<tr><td><u>Number of production shifts:</u></td><td colspan="2" rowspan="3"><u>Quality manual, procedures and working instructions</u>
Is the Quality Management System (QMS) certified according to ISO 9001[1)]?
If yes, by which certification body:
If yes, is the certification body accredited for the particular scope of certification?

In case the QMS is <u>not</u> certified according to ISO 9001:
• Working instructions, test instructions and procedures are documented as follows:
• The following procedure for dealing with <u>complaints</u> applies:
• The following procedure for <u>nonconformity review</u> applies:</td></tr>
<tr><td><u>Quality Control</u>
Total number of employees in QC department :
Number of QC-operators per shift :

If no QC-inspections are carried out during night shifts, state the QC procedure(s)/instruction(s) to be followed: , documented in:</td></tr>
<tr><td><u>Inspection and test records</u>
All records shall be maintained for a minimum of years.</td></tr>
<tr><td><u>Specific agreements/comments/explanations</u></td><td colspan="2">Signature of the manufacturer/supplier:

Date :</td></tr>
</table>

[1)] In case the QMS is ISO 9001 certified and covers the scope of the product certificate(s), reference to the applicable procedure(s) on the next pages is sufficient and the tables A till F do in principle not have to be further filled-out except for the frequency of tests/inspections (to be approved by **CI** in tables B, C and D.

A. Calibration of measuring and test equipment

Applicable procedure(s) nr(s):

Equipment to be calibrated	Calibration aspect	Calibration method	Calibration frequency	Calibration file (name and location)

B. Raw material and additives

Applicable procedure(s) nr(s):

B.1 Receipt

For each delivery of raw material or additives data with respect to dates, producers, types and quantities are recorded as follows:

B.2 Entry control

Type of raw material	Inspection aspect	Inspection method	Inspection frequency	Registration file (name and location)

C. Batch release tests per machine (including in-process and finished product testing)

Applicable procedure(s) nr(s):

Production process(es):

Type of product	Type of test	Test method	Test frequency	Registration file (name and location)

Specific agreements/comments/explanations:

D.	**Process verification tests** Applicable procedure(s) nr(s):			
Type of product	Type of test	Test method	Test frequency	Registration file (name and location)

E.	**Control of nonconforming and/or rejected products** Applicable procedure(s) nr(s):
E.1	**Method of registration**
E.2	**Method of identification**
E.3	**Method of nonconformity review and disposition**

F.	**Inspection with regard to packaging, storage and transportation of the finished product** Applicable procedure(s) nr(s):		
Inspection aspects	Inspection method	Inspection frequency	Registration file (name and location)
F.1	**Packaging/storage/ transportation etc**		

Specific agreements/comments/explanations:

Raw materials list **(not required to fill-out this appendix in case reference can be made to the CI ATA part of the certification agreement)**	**Appendix I** Date: ……

I.1 The product is built-up of the following raw materials:

a) In case of products made from ready-made raw materials: listing of name and/or unique code of the raw material(s);

b) In case of products made from own compounded raw materials: reference to raw material/compound sheets which are (only) available at the production location and which have to be authenticated by CI (e.g. by the CI inspector);

c) In case of composed products (e.g. plastics fitting body, with separate nut, clamp ring and rubber sealing ring): of each part a specification according to a) or b) (whatever applicable).

-

-

-

-

-

-

-

List of technical drawings			**Appendix II** Date:……..
Drawing title and number	Drawing date	Drawing title and number	Drawing date