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Evaluation Guideline

the Kiwa product certificate for
Rotational moulded polyethylene (PE) tanks, with
or without spill containers, for the above ground
storage of chemicals





Amendment to BRL-K21008/02

Rotational moulded polyethylene (PE) tanks, with or without spill containers, for the above ground storage of chemicals

Date of amendment: February 15th, 2015

Technology code: CK-K-T&B03 – Tanks and pipes

Validated by BoE “Tanks, Tank installations & Appendages” on February 27th, 2015

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.

Validity

This amendment sheet pertains to BRL-K21008/02 dated December 1st, 2013.

Validation

This amendment sheet has been validated by Kiwa per March 15th, 2015.

1.1 General

Revise the text in the last paragraph to read:

For the performance of its certification work, Kiwa is bound to the requirements concerning the agreements on the implementation of certification as detailed in the NEN-EN-ISO/IEC 17065.

1.3 Acceptance of test reports provided by the supplier

Revise the text in the first paragraph to read:

Should the manufacturer submit reports from test Institutions or laboratories in order to demonstrate compliance of the product with the requirements of this evaluation guideline, that institute or laboratory shall comply with the applicable accreditation standards, i.e.:

- NEN-EN-ISO/IEC 17025 for laboratories;
- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN-ISO/IEC 17065 for certification bodies certifying products;
- NEN-EN-ISO/IEC 17021 for certification bodies certifying systems;
- NEN-EN-ISO/IEC 17024 for certification bodies certifying persons.

4.2 Dutch legislation

Revise the complete paragraph text to read as follows:

The tanks and spill containers manufactured in accordance with this Evaluation Guideline fall under the jurisdiction of the Dutch Ministry for Infrastructure and Environment (I&M). The relevant legislation Activiteitenbesluit milieubeheer (AM) specifies the requirements pertaining to various activities and these are further clarified in, amongst others, Soil Quality Decree (Besluit Bodemkwaliteit) with its regulation.

In one of the stipulations of the AM it is required that all installations for the above ground storage of chemicals shall be installed by an installation company that has been certified in accordance with the requirements of Evaluation Guideline BRL-K903. This pertains to the following chemicals:

- ADR Class 5.1 materials (oxidizing agents);
- ADR Class 8 packaging group II and III materials (corrosive fluids – bases or alkaline solutions and acids);
- PER (Perchloorethyleen = Tetrachloroethylene) and other fluids that could result in the contamination of the ground or ground water.

The certified installation company shall then be able to issue an installation certificate stating that the tank installation complies with the requirement of Evaluation Guideline BRL-K903. Compliance with BRL-K903 can be given when an adequate Risk Inventory and Evaluation (RI&E) has been carried out in accordance with the requirements of document PBV-107776. The tanks and spill containers used for the above ground storage of fuels will be part of this RI&E. The RI&E shall then be evaluated by the Certification Body. On approval of the RI&E the certified installation company can then issue an installation certificate.

The RI&E of each tank installation can be streamlined when use is made of certified products. In that case the RI&E aspects pertaining to these products will not be required. The tanks and spill containers manufactured in accordance with this Evaluation Guideline will comply with all the requirements stipulated in the regulations and the Evaluation Guideline BRL-K903.

Some companies do not fall under the jurisdiction of these regulations. The requirements pertaining to the above ground storage of chemicals for these companies are laid down in each individual permit. In such cases the local authority shall define the technical and operational requirements for the storage of these



fluids in the individual permit and can in a lot of cases refer via the PGS 30, BRL-K903 to this Evaluation Guideline.

9.2 Certification personnel

Revise as follows:

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

- **Certification assessor / Application reviewer:** they are in charge of carrying out the pre-certification tests and assessing the site assessors' reports;
- **Site assessor:** they are in charge of carrying out external inspections at the supplier's works;
- **Decision-makers:** they are 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.

9.3 Qualification requirements

Revise matrix in paragraph to read:

	Certification assessor / Application reviewer	Site assessor	Decision maker
Basic competence			
<ul style="list-style-type: none"> • Knowledge and competent assessment of the production processes 	<ul style="list-style-type: none"> • Technical education at Bachelor level or higher • 1 year of relevant working experience 	<ul style="list-style-type: none"> • Technical vocational education at intermediate level or higher • 1 year of relevant working experience 	<ul style="list-style-type: none"> • Technical education at Bachelor level or higher • 5 years of working experience with a minimum of 1 year experience with certification
<ul style="list-style-type: none"> • Audit skills 	<ul style="list-style-type: none"> • Not applicable 	<ul style="list-style-type: none"> • Training in audit skills • Minimum of 4 complete audits of which at least 1 has been carried out independently and witnessed for qualification 	<ul style="list-style-type: none"> • Not applicable
Technical competence			
Knowledge of this BRL	<ul style="list-style-type: none"> • Detailed knowledge of this BRL • A minimum of 4 complete audits for this BRL or for related BRL's 	<ul style="list-style-type: none"> • Detailed knowledge of this BRL • A minimum of 4 complete audits for this BRL or for related BRL's 	<ul style="list-style-type: none"> • Not applicable
Relevant knowledge of: <ul style="list-style-type: none"> • The technology related to the manufacturing of the products to be inspected, the performance of these processes and the provision of these services • The manner in which the products are used, the processes are performed and the services are provided • Any defect which may occur during the use of the product, any error in the execution of processes and any inadequacies in the provision of services 	<ul style="list-style-type: none"> • Relevant technical education at Bachelor level or higher • Specific courses and training (knowledge and skills) related to plastics 	<ul style="list-style-type: none"> • Relevant technical vocational education at intermediate level or higher • Specific courses and training (knowledge and skills) related to plastics 	<ul style="list-style-type: none"> • Not applicable

9.4 Qualification

Revise the text as follows:

Certification personnel shall be qualified by assessing the knowledge and skills on the above mentioned requirements. The responsibility for the qualification is determined by the management of the certification body.



Preface

This Evaluation Guideline has been accepted by the Kiwa Board of Experts “Tanks, Tank installations and Appendages”, wherein all the relevant parties in the field of storage of chemicals are represented. This 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 Boards of Experts.

This evaluation guideline will be used by Kiwa in conjunction with the Kiwa-Regulations for Product Certification. This regulation details the method employed by Kiwa for conducting the necessary investigations prior to issuing the product certificate and the method of external control.

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The use of this evaluation guideline by third parties, for any purpose whatsoever, is only allowed after a written agreement is made with Kiwa to this end.

Validation

This evaluation guideline has been validated by the Director Certification and Inspection of Kiwa on December 1st, 2013.



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1 Introduction

1.1 General

This evaluation guideline includes all relevant requirements which are adhered to by Kiwa as the basis for the issue and maintenance of a certificate for rotational moulded polyethylene (PE) tanks, with or without spill containers, for the above ground storage of chemicals.

This evaluation guideline replaces BRL-K21008/02 dated 2009-06-15 and amendment dated July 15th, 2010. Certificates issued on the basis of this guideline lose their validity after a period of 6 months after the date of publication of this guideline.

For the performance of its certification work, Kiwa is bound to the requirements as included in the clause 4.6 "conditions and procedures for granting, maintaining, extending, suspending and withdrawing certification of NEN-EN-ISO/IEC 17065.

1.2 Field of application / scope

The tanks are designed for:

- Storage of chemicals;
- Above ground installation;
- Vertical cylindrical or horizontal rectangular flat-bottomed construction;
- Inside or outside installation;
- Atmospheric pressure;
- Normal continuous operating temperature of fluid up to 25 °C;
- Volume from 450 litres up to 10 000 litres;
- Maximum filling capacity = 95% of the nominal capacity or lower if the legislation should require that.

The tanks are not designed for:

- Combined installation such as a battery arrangement;
- Storage under pressure in excess of approximately 5 kPa;
- Storage of flammable fluids such as kerosene, domestic heating oil, diesel fuels, waste oil and lubrication oils which are covered by BRL-K21002;
- Tanks of irregular shape;
- Transport and distribution of fluids.

The spill containers are designed for:

- Secondary containment of chemicals;
- Above ground installation;
- Atmospheric pressure;
- Normal operating temperature up to 25 °C;
- 110% of the maximum volume of the tank.

The tanks and spill containers are rotational moulded from polyethylene (PE).

All tanks shall be installed with a secondary containment for retaining fluids. The secondary containment construction on site shall be in compliance with the requirements of AS 6700 or be approved by the certification body for the installation of the tank. When no approved construction on site fulfils this function a spill container as describes in this guideline shall be used.

The tank manufacturer is responsible for the correct functioning of the tank and spill container (if supplied) as a combined unit. The operation of the combined unit shall be documented and approved by the manufacturer of the tank.

The product certificate with technical approval is only applicable if the requirements mentioned in paragraph 6.6 and 6.7 are fulfilled.



1.3 Acceptance of test reports provided by the supplier

When by the manufacturer reports from test Institutions or laboratories are produced in order to demonstrate that the product meets the requirements of this evaluation guideline, the institute or laboratory shall meet one of the applicable accreditation norms, being;

- NEN-EN-ISO/IEC 17025 for laboratories;
- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN-ISO/IEC 17065 for certification bodies certifying products;

This requirement is being considered to be fulfilled when a certificate of accreditation can be shown, either issued by the Board of Accreditation (RvA) or one of the institutions with which the RvA an agreement of mutual acceptance has been concluded.

The accreditation shall refer to the examination as required in this BRL. When no certificate of accreditation can be shown, Kiwa will verify whether the accreditation norm is fulfilled.

1.4 Quality declaration

The quality declarations to be issued by Kiwa are described as Kiwa product certificate. A model of the certificate to be issued on the basis of this Evaluation Guideline has been included as an Annex.



2 Terminology

In this evaluation guideline the following terms and definitions are applicable:

Evaluation Guideline: the agreements made within the Board of Experts on the subject of certification.

Board of Experts: The Board of Experts "TTA – Tanks, Tank installations & Appendages".

Supplier: the party that is responsible for ensuring that the products meet and continue to meet the requirements on which the certification is based.

IQC schedule: a description of the quality inspections and tests carried out by the supplier as part of his quality system.

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.

Pre-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.

Remark

The test matrix contains a summary showing what tests Kiwa will carry out in the pre-certification stage and in the event of inspections as well as showing the frequency with which the inspection tests will be carried out.

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.



3 Terms and definitions

Basic material

The basic material is the PE raw material with pigments and additives for processing into a tank or spill container. Only virgin material is used.

Brim full capacity

Volume of water held by the tank filled through the filling orifice to the point of overflowing.

Cover spill container

The cover, if provided, is placed over and attached to the spill container to protect all connections to the storage tanks and to prevent the ingress of water and deleterious material.

Maximum filling capacity

95% of the nominal capacity.

Minimum wall thickness

The minimum thickness measured at any one point of the tank or spill container wall.

Mobile storage of fluids

The term mobile storage is applicable to tanks / spill containers which are suitable for transport when filled. These tanks / spill containers shall also comply with the requirements of ADR and therefore have the UN-identification required by ADR. The life expectancy is limited to 5 years from the date of manufacture. Such tanks are **not** included in this Evaluation Guideline.

Nominal capacity

The nominal capacity of the tank is the capacity specified by the client.

Nominal wall thickness

The wall thickness for the tank and spill container that is related to the specified maximum filling capacity.

Operating access lid

An operating access lid provides access to the fill line of the tank and other equipment. When closed, the operating access lid shall prevent the ingress of rain and any unwanted matter from entering the spill container. The operating access lid will normally form part of the spill container cover.

Spill container

Container which is designed to enclose a tank to prevent leakage from the tank entering the environment and which can enable the detection of leakage.

Stationary storage of fluids

The term stationary storage is applicable when tanks / spill containers are permanently installed in one location and / or are not suitable for transport when filled.

Tank

A container for fluids, which can retain its designed shape and function in any stage of its designed working life as a stationary storage container.

Tank battery

Two or more tanks installed parallel or in series, whereby use is made of common suction, filling and venting lines without the possibility of isolating any individual tank. A tank battery is **not** included in this Evaluation Guideline.

Virgin material

This is the raw PE-material with additives, pigments or other substances.



4 Legal requirements

4.1 General

This chapter refers to the legal requirements in relation to the tanks and spill containers manufactured in accordance with this Evaluation Guideline.

4.2 Legal requirements

The tanks and spill containers manufactured in accordance with this Evaluation Guideline fall under the jurisdiction of the Dutch government who has specified the requirements pertaining to various industries with regard to the environment in the BARIM (Besluit Algemene Regels voor Inrichtingen Milieubeheer also known as “Activiteitenbesluit). The requirements stipulated in the BARIM are further clarified in the RARIM (Regeling Algemene Regels voor Inrichtingen Milieubeheer).

In one of the stipulations of the RARIM it is required that all installations for the above ground storage of fuels shall be installed by an installation company that has been certified in accordance with the requirements of Evaluation Guideline BRL-K903. This pertains to the following chemicals:

- All fuels except for petrol;
- Waste oils;
- ADR Class 5.1 materials (oxidizing agents);
- ADR Class 8 packaging group II and III materials (corrosive fluids – bases or alkaline solutions and acids);
- PER (Perchloorethyleen = Tetrachloroethylene) and other fluids that could result in the contamination of the ground or ground water.

The certified installation company shall then be able to issue an installation certificate stating that the tank installation complies with the requirement of Evaluation Guideline BRL-K903. Compliance with BRL-K903 can be given when an adequate Risk Inventory and Evaluation (RI&E) has been carried out in accordance with the requirements of document PBV-107776. The tanks and spill containers used for the above ground storage of fuels and waste oils will be part of this RI&E. The RI&E shall then be evaluated by the Certification Body. On approval of the RI&E the certified installation company can then issue an installation certificate.

The RI&E of each tank installation can be streamlined when use is made of certified products. In that case the RI&E aspects pertaining to these products will not be required. The tanks and spill containers manufactured in accordance with this Evaluation Guideline will comply with all the requirements stipulated in BARIM, RARIM and Evaluation Guideline BRL-K903.

Some companies do not fall under the jurisdiction of the BARIM/RARIM. The requirements pertaining to the above ground storage of liquid fuels, waste oils and lubricants for these companies are laid down in each individual permit. In such cases the local authority shall define the technical and operational requirements for the storage of these fluids in the individual permit and can in a lot of cases refer via the PGS 30, BRL-K903 to this Evaluation Guideline.



5 Procedure for granting the quality declaration

5.1 Pre certification tests

The pre certification-tests to be performed are based on the (product) requirements as included in this evaluation guideline including the test methods and contain, depending on the nature of the product to be certified:

- 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-schedule,
- Assessment on the presence and functioning of the remaining procedure.

5.2 Granting the quality declaration

After finishing the pre-certification tests the results are presented to the person deciding on granting of certificate. This person evaluates the results and decides whether the certificate can be granted or additional data and/or tests are necessary.



6 Requirements and test methods

6.1 General

This chapter lists the product and performance requirements that have to be met by the tanks and spill containers made from rotational moulded polyethylene. These requirements will make part of the technical specification of the products, as included in the certificate.

6.2 Design drawings and calculations

The design details of the assembled product, materials to be used, lifting instructions, life expectancy of the product and the dimensional tolerances used in production shall be specified by the manufacturer in technical drawings and calculations. The Certification Body shall evaluate these drawings and design for approval. The manufacturer shall define all tank types, nominal sizes including capacities proposed for approval. Furthermore, the design shall be based on the following:

- a life expectancy of 20 years
- for outside installation:
 - an ambient temperature between -20 °C to $+50\text{ °C}$;
 - a maximum wind speed of 29,5 m/sec;
 - snow loads of a maximum of 700 N/m² on the cover of the spill container;
 - adequate measures, when storing fluids that are susceptible to degradation when directly or indirectly exposed to sunlight, to prevent the degradation of the fluid stored.

6.3 Requirements and test methods of material characteristics

6.3.1 General materials used

Only virgin material shall be used for the manufacturing of the tank and / or spill container.

6.3.2 Density

The reference density of the raw material shall not be less than 934 kg/m³ when determined according to NEN-EN-ISO 1183-1 method B and NEN-EN-ISO 1183-2. Annealing of the specimen shall be in accordance with NEN-EN-ISO 1872-2.

6.3.3 Melt Mass-flow rate

The melt mass-flow rate (MFR) of the raw material shall be $4,0 \pm 3,0$ g/10 min at 190 °C when determined according to NEN-EN-ISO 1133, condition D (mass applied is 2,16 kg). The MFR of material taken from the moulded tank and from the spill container shall also be determined and shall not vary by more than 20% of the MFR determined for the raw material.

6.3.4 Tensile stress at yield

The tensile stress at yield of the polyethylene material shall not be less than 15 MPa when determined according to NEN-EN-ISO 527-2 on Type 1BA test pieces. A testing speed of 100 mm/min shall be used.

A compression moulded specimen of $3 \pm 0,2$ mm thickness shall be used for this test. The specimens shall be prepared using the conditions specified in Table 2 of NEN-EN-ISO 1872-2 except that the moulding temperature used shall be 200 °C. The moulding press and mould used shall comply with NEN-EN-ISO 293. The test material shall be taken from a section of the moulded tank and spill container.

The following requirements shall be complied with:

- Elongation at yield shall not be more than 25%
- Elongation at break shall not be less than 200%

6.3.5 Oxidation induction time

The isothermal oxidation induction time (OIT) of the polyethylene material, when determined according to NEN-EN-ISO 11357-6 with a test temperature of 200 °C, shall not be less than



20 minutes. Preferably, the tangent method shall be used and when this is not possible the offset method with a trigger value of 0,05 W/g shall be used. The test samples shall be taken from the inside surface of the tank and the test shall be carried out in duplicate.

6.3.6 Melt temperature

The polyethylene used for the manufacture of the tank and spill container shall have a minimum melt temperature of + 120 °C when measured by means of the Differential Scanning Calorimetric method in accordance with NEN-ISO 11357-5 . This shall be declared by the supplier of the raw material (Declaration of conformity).

6.3.7 Resistance to chemicals

The polyethylene material of the tank and spill container shall be resistant to the chemical to be stored for a minimum period of 20 years. For testing of the resistance to chemicals the following shall apply:

- For the chemicals listed in the DIBt chemical resistance list (Medienlisten 40) for PE material with an A_{2K} factor ≤ 1.4 no additional testing will be required.
- For the chemicals in de Medienlisten 40 with an A_{2K} factor > 1.4 or where the Medienlisten 40 warns against the unconditional suitability against the chemical, the manufacturer shall provide the Certification Body with suitable calculations based on this A_{2K} factor proving the acceptability of the design.
- For the storage of chemicals not listed in the Medienlisten 40, or where the Medienlisten 40 gives no information regarding the value A_{2K} for PE, the manufacturer shall determine the A_{2K} factor in consultation with the certification body. In some cases additional testing may be required to demonstrate the suitability of the material of the tank and spill container. This shall be achieved by testing with the actual chemical to be stored in accordance with the requirements of ISO 4433-1. Hereby the samples shall be exposed to the chemical which will be maintained at (40 ± 2) °C until equilibrium is reached i.e. the change in weight after 1 week is less than 0,5%. After exposure the material shall comply with the requirements of ISO 4433-2.

6.3.8 Resistance against UV-ageing

The test shall be carried out in accordance with NEN-EN-ISO 4892-1 and NEN-EN-ISO 4892-2 using the following conditions:

- Xenon arc lamp;
- Black standard temperature, 65 °C;
- Relative humidity 65%;
- Spray cycle:
 - duration of spray : 18 minutes,
 - dry interval between spraying: 102 minutes.

For outside installation

The elongation at break of the polyethylene material, after exposure to a global irradiance of 34 GJ/m^2 (corresponding to an irradiance of $2,3 \text{ GJ/m}^2$ from the band of 300 nm to 400 nm), shall be greater than 50% of the initial elongation at break, as determined in paragraph 6.3.4. Test specimens shall be taken from a section of the moulded tank and spill container.

For inside installation

The elongation at break of the polyethylene material, after exposure to a global irradiance of $3,4 \text{ GJ/m}^2$ (corresponding to an irradiance of $0,23 \text{ GJ/m}^2$ from the band of 300 nm to 400 nm), shall be greater than 50% of the initial elongation at break, as determined in paragraph 6.3.4. Test specimens shall be taken from a section of the moulded tank and spill container.

6.3.9 Electrostatic behaviour (optional)

Some chemicals could form a risk during the filling operation due to the build-up of static electricity. When storing such chemicals the electrostatic behaviour according to NPR-CLC/TR 50504 shall be taken into consideration.

6.4 Requirements and test methods of the tank and spill container characteristics

6.4.1 Visual inspection / appearance

The inner and outer surface of all tanks and spill containers shall be smooth and flawless, without holes, blisters or other defects. The material shall be free of contamination. The manufacturer's quality system shall include clear procedures for approval and rejection.

6.4.2 Wall thickness

The wall thickness of the tank and spill container shall be:

Maximum filling capacity	Nominal wall thickness	Minimum wall thickness
> 450 litre < 1 000 litre	6,5 mm	3,3 mm
≥ 1 000 litre < 1 500 litre	7,5 mm	3,5 mm
≥ 1 500 litre < 2 000 litre	9,0 mm	3,9 mm
≥ 2 000 litre < 2 500 litre	9,0 mm	4,1 mm
≥ 2 500 litre < 3 000 litre	10,0 mm	4,3 mm
≥ 3 000 litre < 3 500 litre	10,0 mm	4,4 mm
≥ 3 500 litre < 4 000 litre	10,0 mm	4,8 mm
≥ 4 000 litre < 5 000 litre	10,0 mm	4,8 mm
≥ 5 000 litre < 7 500 litre	11,0 mm	5,1 mm
≥ 7 500 litre ≤ 10 000 litre	13,0 mm	5,4 mm

Table 6.1: Wall thickness of tanks and spill containers

The nominal wall thickness of the tank is the wall thickness at the critical areas of the tank i.e. at the lower knuckle radius with a lower tolerance of - 1,5 mm. At the less critical areas i.e. the upper part of the tank the minimum wall thicknesses as specified in the table, shall be met. Critical areas are areas where the design analyses show the stresses to be the highest.

The above specified wall thicknesses are suitable for the storage of chemicals with a maximum density of 1 400 kg/m³ and a maximum A_{2K} factor of 1.0 (see § 6.3.7). Should the manufacturer consider the storage of chemicals with a higher density or a A_{2K} factor higher than 1.0 then the wall thicknesses shall need to be increased to meet this application. In such cases the manufacturer shall obtain prior approval from the Certification Body for his design which will be based on the requirements of paragraph 6.2.

6.4.3 Resistance to impact

The tank and spill container will be tested separately according to NEN-EN 13575. The test shall be performed on the wall of the construction with and without ribs and at locations that have a low flexibility and are vulnerable to impact.

The tank shall be filled to the point of overflow according to the test procedure of NEN-EN 13575. After impact the tank shall be visually inspected for leakage and shall be free of cracks.

The spill container shall be half filled with water. After impact the spill container shall be visually inspected for leakage and shall be free of cracks.

6.4.4 Pressure resistance (type test)

The hydrostatic pressure test is performed according to NEN-EN 13575. The minimum pressure for the test is 50 kPa. After testing the tank shall be leak tight. All types/sizes shall be tested. All connections on the tank shall be properly closed before this test. All connections shall be checked for leaks.

Additionally, all types of tanks shall be leak tight to pneumatic pressure of 30 kPa for at least 30 minutes. For safety reasons, the tank can be filled with water and pressurized with air for conducting this test.



6.4.5 Leak tightness (production test)

All connections on the tank shall be properly closed before performing this test. All connections shall be checked for leaks using a soap water solution or equivalent.

All tanks shall be leak tight to pneumatic pressure of 30 kPa for at least 15 seconds

OR

All tanks shall be leak tight to pneumatic pressure of 10 kPa for at least 60 seconds

OR

All tanks shall be leak tight when completely filled with water for a period of at least 24 hours.

6.4.6 Deformation

The tank and the spill container shall be tested for deformation as follows:

6.4.6.1 Deformation of the tank

The test shall be performed according to NEN-EN 13575.

6.4.6.2 Deformation of the spill container

Test procedure

- The spill container and tank shall be set up under normal assembled conditions.
- The tank and spill container shall be conditioned for 48 hours at 20 ± 5 °C.
- The tank and spill container shall be located on a flat surface with reference to a measuring grid.
- The initial width (W_i) and the length (L_i) shall be measured while the tank and spill container are still empty and taken as the original dimensions.
- A volume of water at a temperature of 16 ± 6 °C and equal to 110% of the brimful capacity of the tank shall be 'filled' in the assembled combination of tank and spill container so that the liquid level in the tank and in the spill container are equal in height measured from the flat surface.

Note: The tank does not have to be perforated for this test to ensure that the liquid levels are the same in the tank and the spill container. However, both tank and spill container have to be filled at the same time while ensuring that the difference in the separate liquid levels is minimised during filling.

- When filled the width (W_i) and the length (L_i) are measured at day 5, 10 and 15.
- At day 15 the final width (W_f) and length (L_f) are measured.
- The change in width and length of the spill container is calculated by deriving the percentage of change from the final width and length with respect to the initial width and length.

The deformation shall comply with the following:

- Maximum increase of width 13,5 %
- Maximum increase of length 12,5 %

6.4.7 Elongation of the tank (optional)

This test is optional and is only required for compliance with NEN-EN 13575. The test shall be performed according to NEN-EN 13575.

6.4.8 Lifting test

The tank and spill container shall be resistance to the lifting forces during transport and installation. The tank shall be filled with 10% of its maximum filling capacity with water and the spill container shall be lifted in accordance with the manufacturer's instructions for a period of 48 hours. After this test the tank/spill container shall show no visible signs of deformation. Should the tank / spill container be equipped with lifting lugs or handles (at least two lifting



lugs or handles suitable for transport of the assembled product are required) then these lugs or handles shall show no visible signs of deformation.

6.4.9 Connections on the tank

Each assembled tank shall be equipped with at least the connections as detailed in the table below. All connections shall be installed at the top of the tank and above the maximum fluid level. Connections below the fluid level are not allowed.

Connection	Minimum size DN	Position
Fill pipe	50	Opposite to the vent, as far away as possible
Suction	50	Not specified
Fluid level indicator	40	Not specified
Vent/U-bend	50	Highest point of the tank

Table 6.2: Tank connections

The connection size of the vent shall not be less than the connection size of the fill pipe in order to avoid either over pressure or vacuum.

The connections on the tank shall be resistant to the fluid to be stored. Only flanged connections are to be used and these shall be welded on the top of the tank and be in accordance with NEN-EN-ISO 15494. For all connections the distance between the top of the tank and the underside of the flange shall be at least 100 mm with a minimum distance of 50 mm between the flanges of any two connections. All flange surfaces shall be flat and horizontal.

6.4.10 Internal piping in the tank

The internal piping shall form an integral part of the assembled product. The manufacturer shall test the pipes after assembly.

Piping	Requirements
Fill pipe	If provided, this pipe shall have a 5 mm diameter hole as high as possible. When flammable fluids are being stored, this hole shall be reduced to 3 mm
Suction pipe	The distance of the lowest point of this pipe to the bottom of the tank shall be at least the diameter of the suction pipe
Fluid level indicator	If provided, this pipe shall have a 5 mm diameter hole as high as possible. When flammable fluids are being stored, this hole shall be reduced to 3 mm
Vent	No internal pipe allowed

Table 6.3: Tank internal piping


Due to the hydraulic cyclical pressure all piping shall be at least PN 16. There shall be no openings in the internal piping with the exception of the pipe used for the fluid level indication (if applicable) which shall be provided with a hole of 3 mm diameter as high as possible. All pipes shall be resistant to the fluid to be stored and shall be in accordance with NEN-EN-ISO 15494.

6.4.11 Manholes and inspection openings

Tanks can be equipped with a manhole for accessing the tank. The manhole opening shall have a minimum internal diameter of 600 mm and shall be located on the top of the tank.

The inspection opening shall have a diameter of not less than 100 mm, and shall be provided with a means of being secured in place so that it can only be used for the intended purpose.

Note: National regulations may require the re-qualification of a tank at periodic intervals. If these regulations stipulate that an internal inspection of the tank has to be carried out by a



qualified inspector then a manhole is recommended. If an adequate internal inspection of the tank is not possible, the tank will be rejected after the first re-qualification period.

6.4.12 Elastomeric sealing elements

Elastomeric sealing elements shall be resistant to the chemicals to be stored. This shall be demonstrated in writing by the manufacturer of the sealing element based on the test reports of the actual compound supplied. The testing shall be based on the requirements of NEN-EN 681-1 (or equivalent).

When no information is available regarding the chemical resistance of the elastomeric sealing element to the chemical to be stored then this shall be subjected to testing. The testing shall be based on the requirements of NEN-EN 681-1 (or equivalent) whereby the testing shall be done with the chemical to be stored. After performing the swelling test there shall be no visual deterioration of the elastomeric seal.

The suitability of the elastomeric sealing element for the medium to be stored shall be evaluated by the certification body.

6.5 Periodic recertification of tank installations

All tank installations used for the storage of chemicals require to be recertified every 10 years in accordance with the requirements of document KC-111 "Recertification of above ground tank installations (Plastic and steel)". This document forms a part of Evaluation Guideline BRL-K903. In order to facilitate this recertification the tank shall be provided with two test strips made of the parent polyethylene material of 30 cm length x 10 cm width x same thickness as the tank wall and shall be obtained from the material from the manhole or inspection opening. Alternatively, the test strips can be rotational moulded in a separate mould that is subjected to the same production cycle and is produced simultaneously with the storage tank. The test strips shall be foreseen with two notches in order to facilitate the breaking off of the test strip in 3 equal pieces of 10 x 10 cm. The test strips shall be affixed by means of a polyethylene thread or equivalent to the suction pipe. One test strip shall be at an approximate distance of 5 cm from the tank bottom in order to ensure it is continuously exposed to the chemical stored. The other test strip shall be at an approximate distance of 5 cm from the top of the tank in order to ensure that it is continuously exposed to the vapours of the chemical stored. The test strips shall be indelibly marked with the tank serial number and the original wall thickness. Measures shall be taken to ensure that the test strips can only be removed from the tank by an approved body.

6.6 Installation and user instructions

The manufacturer shall provide proper written installation and users' instructions in the language of the country where the tank is to be installed and used. These instructions shall reference compliance with the national environmental regulations pertaining to the storage of chemicals. National regulations can stipulate requirements for preventing accidental impact to the tank and spill container and requirements for the overfill prevention and anti-siphon devices. National regulations stipulate that the installation is to be carried out by installers certified in accordance with the requirements of BRL-K903 Scope F. The instructions shall include the precautions to be taken and the testing requirements when testing the tank on site. The test pressure to be used for this test will be limited to 0,05 bar.

Note: Evaluation Guideline BRL-K903 provides additional information pertaining to the installation of the tank and spill container:

In all cases the appendages used shall be resistant to the chemical stored and this shall be suitably demonstrated by the tank installer.

6.7 Documentation to be supplied with tank and spill container

Every PE-tank / spill container shall be supplied with at least the following documents:

- Installation / user instructions in the language of the country where the tank is to be installed and used in. The certification body shall approve these instructions.



- A unique tank / spill container compliance document with the approval of the certification body in relation to the product certificate with technical approval.

6.8 Tank and spill container identification

Each PE-tank and spill container shall be indelibly marked with the following items:

- Manufacturer's name and/or trade name;
- Kiwa certification mark;
- Serial number of the tank and spill container;
- Month and year of manufacture;
- Nominal volume of tank in litres or m³;
- Chemical to be stored in tank (CAS number (Chemical Abstract Service number)) with the relevant concentration (or trade name when a CAS number is not available);
- Location of the storage tank: Inside or outside;
- Factory tested: With air at 0,1/0,3 bar/at full hydrostatic pressure with water for 24 hours*;
- Maximum operating temperature of chemical to be stored;
- Recertification period when this is lower than 10 years.

* = Stipulate as applicable

When this information is provided on an identification label, this label shall be mounted at eye level and provisions shall be made to ensure that this label cannot be removed from the tank / spill container. Both the tank and the spill container shall be provided with their own identification label. Should the spill container height be such that the tank identification label is not directly visible, a second tank identification label shall be mounted next to the identification label of the spill container.



7 Quality system requirements

7.1 General

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

7.2 Manager of the quality system

Within the manufacturer's organisational structure an employee shall be responsible for managing the manufacturer's quality system.

7.3 Internal quality control schedule / quality plan

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

In this IQC-schedule the following must 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 Annex C. The schedule must be detailed in such a way that it provides Kiwa sufficient confidence that requirements will be continuously fulfilled.

Static process control by the manufacturing shall be performed according to ISO 2859-1, with an inspection and AQL-level to be approved by the certification body.

7.4 Qualification of personnel

All welders involved in the production of the tanks and spill containers shall be qualified for this work in accordance with the procedures of the tank manufacturer. This also applies to the personnel carrying out the dye penetrant inspection, if applicable. The procedures used and the scope of the qualification of each person shall be documented. The manufacturer shall review and renew this documentation on a yearly basis.

7.5 Qualification/approval of special processes

All welding procedures shall be approved by the manufacturer prior to releasing these procedures for production purposes. This also applies to the personnel operating the rotational moulding machines. The qualification of personnel shall be in accordance with these approved procedures. The approvals shall be documented and the manufacturer shall review and renew this documentation on a yearly basis.


7.6 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.
- Other requirements to be met by the quality system

7.7 Design Changes

Design changes of the certified products shall always be reported to Kiwa prior to the start of production. Kiwa shall evaluate these changes in order to determine the impact these changes have on the initial approved design and to determine which type tests shall have to be repeated.



Products that have been subjected to a design change can only be identified with the Kiwa quality stamp after they have been given a written approved by Kiwa.

7.8 Documentation retention

Unless otherwise specified, all qualification and inspection records, test reports and material certificates shall be retained for a period of at least 10 years.

8 Summary of tests and inspections

This chapter contains a summary of the following tests and inspections to be carried out in the event of certification:

- Pre-certification tests;
- Inspection test as to toxicological requirements and product requirements;
- Inspection of the quality system.

The frequency with which Kiwa will carry out inspection tests is also stated in the summary.

8.1 Test matrix

Description of requirement	BRL Article	Category (see note)	Assessment within the scope of the BRL		
			Initial evaluation	Surveillance audit by Kiwa after issue of the certificate	
				Audit	Frequency
Design					
Design drawings and calculations	6.2	1	X	X	Every audit
Requirements for material characteristics					
General materials used	6.3.1	1	X	X	Every audit
Density	6.3.2	1	X	X*	1/year
Melt Mass-flow rate	6.3.3	1	X	X*	1/year
Tensile stress at yield	6.3.4	1	X	X*	1/year
Oxidation induction time	6.3.5	1	X	X*	1/year
Melt temperature	6.3.6	1	X	X*	1/year
Resistance to chemicals	6.3.7	1	X	X*	When material changed
Resistance against UV-ageing	6.3.8	1	X	X*	When material changed
Electrostatic behaviour (optional)	6.3.9	1	X	X*	When material changed
Requirements for tank en spill container					
Visual inspection / appearance	6.4.1	3	X	X	Every audit
Wall thickness	6.4.2	1	X	X	Every audit
Resistance to impact	6.4.3	2	X	X	When design changed
Pressure resistance (type test)	6.4.4	1	X	X	When design changed
Leak tightness (production test)	6.4.5	1	X	X	Every audit
Deformation	6.4.6	2	X	X	When design changed
Elongation of the tank (optional)	6.4.7	2	X	X	When design changed
Lifting test	6.4.8	2	X	X	When design changed
Connections on the tank	6.4.9	1	X	X	Every audit
Internal piping in the tank	6.4.10	2	X	X	Every audit
Manholes and inspection openings	6.4.11	2	X	X	Every audit
Elastomeric sealing elements	6.4.12	2	X	X*	Every audit
Periodic recertification of tank installations	6.5	2	X	X	Every audit
Installation and user instructions	6.6	2	X	X	1x/year
Documentation to be supplied with tank and spill container	6.7	2	X	X	Every audit
Tank and spill container identification	6.8	1	X	X	Every audit
Quality system requirements					
Internal quality control schedule / quality plan	7.3	2	X	X	Every audit
Qualification of personnel	7.4	2	X	X	1x/year
Qualification/approval of special processes	7.5	2	X	X	1x/year
Procedures and working instructions	7.6	3	X	X	1x/year
Design Changes	7.7	1	X	X	Every audit
Documentation retention	7.8	3	X	X	Every audit

X* = Certificate of conformity (specifications from suppliers)

Table 8.1: Test and audit matrix



Note:

Non-conformities can be reported during the surveillance audits. These non-conformities can be classified into the following categories:

- 1 =Critical: These non-conformities can lead to a dangerous situation or result in a substandard product. The manufacturer shall, after approval from the certification body, implement corrective actions to rectify the situation within a maximum period of 2 weeks. Failure to do so shall result in the withdrawal of the certificate.
- 2 =Important: These non-conformities can in the long term lead to a substandard product. The manufacturer shall, after approval from the certification body, implement corrective actions to rectify the situation within a maximum period of 3 months. Failure to do so shall result in the withdrawal of the certificate.
- 3 =Less important: These non-conformities are less important but shall be rectified within a reasonable amount of time. The certification body shall check the corrective action taken during the following surveillance audit.

During the initial evaluation of the product, type tests have to be performed to determine whether the product meets the specified performance and product requirements. The requirements that shall be fulfilled in order to qualify for certification are stated in the above matrix. In the event of a change of the raw material or the supplier thereof the type tests shall be repeated by the tank manufacturer.

The quality system of the manufacturer is also audited during the initial evaluation.

After certification Kiwa shall periodically audit the manufacturer for compliance with this Evaluation Guideline. During these audits a periodic repetition of some of type tests can also be required.

9 Agreements on the implementation of certification

9.1 General

In addition to the requirements stipulated in this Evaluation Guideline the general requirements pertaining to certification as stated in the Kiwa-Regulations for Product Certification will be applicable.

Specifically, the following shall be applicable:

- The general procedure for executing the initial evaluation including:
 - The method of informing the suppliers regarding the processing of the application;
 - The execution of the initial evaluation;
 - The decision taken after the execution of the initial audit.
- The general procedure for executing the audits and the relevant checkpoints;
- The procedure to be implemented by the certification body in the event of non-conformities;
- The procedure to be followed by the certification body in the event of unauthorized use of the certificates, certification mark, pictograms and logos.
- The procedure to be followed in the event of termination of the certificate;
- The possibility to contest a decision made by the certification body.

9.2 Certification personnel

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

- **Certification engineer:** they are in charge of carrying out the pre-certification tests and assessing the inspectors' reports;
- **Inspectors:** they are in charge of carrying out external inspections at the supplier's works;
- **Decision-makers:** they are 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.

9.3 Qualification requirements

The Board of Experts has set the following qualification requirements for the subject matter of this Evaluation Guideline:

Requirements EN 17065	Function and responsibility		
	Certification Engineer	Inspector	Decision maker
Education: general	<ul style="list-style-type: none"> • Relevant technical education at Bachelor level or higher • Internal training in certification and Kiwa policy • Training in audit skills 	<ul style="list-style-type: none"> • Technical vocational education at intermediate level or higher • Internal training in certification and Kiwa policy • Training in audit skills 	<ul style="list-style-type: none"> • Technical education at Bachelor level or higher • Internal training in certification and Kiwa policies • Training in audit skills
Education: specific	<ul style="list-style-type: none"> • Training related to this Evaluation Guideline • Specific courses and training (knowledge and skills) related to plastics 	<ul style="list-style-type: none"> • Training related to this Evaluation Guideline • Specific courses and training (knowledge and skills) related to plastics 	<ul style="list-style-type: none"> • Not applicable
Experience: general	<ul style="list-style-type: none"> • 1 year of relevant working experience • A minimum of 4 complete certification cycles of which at least 1 has been witnessed for qualification 	<ul style="list-style-type: none"> • 1 year of relevant working experience • A minimum of 4 complete certification cycles of which at least 1 has been witnessed for qualification 	<ul style="list-style-type: none"> • 4 years of working experience, with a minimum of 1 year of experience with certification



Requirements EN 17065	Function and responsibility		
	Certification Engineer	Inspector	Decision maker
Experience: specific	<ul style="list-style-type: none"> Detailed knowledge of this Evaluation Guideline A minimum of 4 complete certification cycles for this Evaluation Guideline or related Evaluation Guidelines 	<ul style="list-style-type: none"> Detailed knowledge of this Evaluation Guideline A minimum of 4 complete certification cycles for this Evaluation Guideline or related Evaluation Guidelines 	<ul style="list-style-type: none"> Basic knowledge of this Evaluation Guideline

Table 9.1: Qualification requirements for certification personnel

The level of education and the experience of the certification staff involved should be demonstrably recorded.

9.4 Qualification

Certification personnel shall be qualified on the basis of the above mentioned criteria. Should qualification be otherwise determined then this shall be recorded.

The responsibility for the qualification of the certification personnel is determined by:

- Decision-makers: qualification of certification engineers and inspectors
- Management of the certification body: qualification of the Decision-makers.

9.5 Report initial audit

The certification body shall detail the findings of the initial audit in a report. This report shall comply with the following:

- Complete: The report shall indicate the findings pertaining to each and every requirement detailed in this Evaluation Guideline;
- Traceability: The findings used to determine compliance with the requirements shall be traceable;
- Basis for the decision: The decision maker responsible for certification shall be able to decide on the basis of the findings detailed in the report.

9.6 Decision regarding certification

The decision to certify the supplier shall be made by a qualified decision maker who has not participated in the initial audit. This decision shall be traceable.

9.7 Product certification

The product certificate shall be in conformance with the model in Annex A.

9.8 Nature and frequency of external audits

The certification body shall ensure that the supplier continues to comply with the certification requirements. The number of external audits shall be determined by the Board of Experts. At the time of publication of this Evaluation Guideline the number of audits has been fixed at 2 audits per year.

The audits shall at least include:

- The IQC schedule of the supplier and the results of the internal inspections carried out;
- The correct marking of the certified products;
- The implementation of the required procedures.

The audit results shall be reported by the Kiwa inspector in a report.

9.9 Interpretation of the requirements

The Board of Experts may specify how the requirements are to be interpreted. These interpretations shall be documented in a separate interpretation document.



10 List of referenced documents

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standard number	Title	Revision
BRL-K903	Certification scheme for Installers of Tank Installations (REIT)	
DIBt Medienlisten 40	Medienlisten 40 für Behälter, Auffangvorrichtungen und Rohre aus Kunststoff	
ISO 2859-1	Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection	
ISO 4433-1	Thermoplastic pipes – Resistance to liquid chemicals – Classification – Part 1: Immersion method	
ISO 4433-2	Thermoplastic pipes – Resistance to liquid chemicals – Classification – Part 2: Polyolefin pipes	
NEN-EN 681-1	Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications - Part 1: Vulcanized rubber	
NEN-EN 13575	Thermoplastic tanks made from blow or rotational moulded polyethylene – Tanks for the above ground storage of chemicals – Requirements and test methods	2012-04-01
NEN-EN-ISO 293	Plastics -- Compression moulding of test specimens of thermoplastic materials	
NEN-EN-ISO 527-2	Plastics — Determination of the tensile properties — Part 2: Test conditions for moulding and extrusion plastics	
NEN-EN-ISO 1133	Plastics – Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics	
NEN-EN-ISO 1183-1	Plastics -- Methods for determining the density of non-cellular plastics -- Part 1: Immersion method, liquid pycnometer method and titration method	
NEN-EN-ISO 1183-2	Plastics -- Methods for determining the density of non-cellular plastics -- Part 2: Density gradient column method	
NEN-EN-ISO 1872-2	Plastics -- Polyethylene (PE) moulding and extrusion materials -- Part 2: Preparation of test specimens and determination of properties	
NEN-EN-ISO 4892-1	Plastics -- Methods of exposure to laboratory light sources -- Part 1: General guidance	



Standard number	Title	Revision
NEN-EN-ISO 4892-2	Plastics -- Methods of exposure to laboratory light sources -- Part 2: Xenon-arc lamps	
NEN-EN-ISO 11357-6	Plastics — Differential scanning calorimetry (DSC) — Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)	
NEN-EN-ISO 15494	Plastics piping systems for industrial applications — Polybutene (PB), polyethylene (PE) and polypropylene (PP) — Specifications for components and the system – Metric series	
NEN-ISO 11357-5	Plastics — Differential scanning calorimetry (DSC) — Part 5: Determination of characteristic reactioncurve temperatures and times, enthalpy of reaction and degree of conversion	
NPR-CLC/TR 50504	Electrostatics — Code of practice for the avoidance of hazards due to static electricity	

Annex A Model Product certificate

Certificate

Number	K12345/01	Replaces	
Issued	2013-11-01	Dated	--

Product certificate

Rotational moulded polyethylene tanks with spill containers for the above ground storage of chemicals

Based on pre-certification tests as well as periodic inspections by Kiwa, the products referred to in this certificate and marked with the Kiwa-mark as indicated under 'marking', manufactured by

ABC Company

may, on delivery, be relied upon to comply with the Kiwa Evaluation Guideline BRL-K21008/02 "Rotational moulded polyethylene (PE) tanks, with or without spill containers, for the above ground storage of chemicals".

Kiwa N.V.

ing. B. Meekma
Director

This certificate is issued in accordance with the Kiwa Regulations for Product Certification and consists of 3 pages.
Publication of the certificate is allowed.

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Page:	2	Number	K12345/01	Replaces	
		Issued	2011-11-01	Dated	--

Rotational moulded polyethylene (PE) tanks with spill containers for the above ground storage of chemicals

PRODUCT SPECIFICATION

Type 2200 tank with spill container

APPLICATION AND USE

The tanks are designed for the above ground atmospheric storage of chemicals at a normal operating temperature of 25 °C. The maximum filling capacity is 95% of the nominal capacity. The tanks are not suitable for:

- a combined installation such as a battery arrangement;
- storage under pressure in excess of approximately 5 kPa;
- storage of flammable fluids such as domestic heating oil, kerosene and diesel fuels;
- transport and distribution of fluids.

The spill containers are designed for the above ground secondary containment of the chemicals contained in the storage tanks. The spill containers have a volume of 110% of the maximum volume of the tank.

The tanks and spill containers are rotational moulded from polyethylene (PE).

All tanks shall be installed with a secondary containment for retaining the chemicals stored. The approval of the secondary containment construction on site is the responsibility of the local authorities or the certification body involved with the tank installation. When no approved construction on site fulfils this requirement, a spill container as specified in this Evaluation Guideline shall be used. The tank manufacturer is responsible for the correct functioning of the tank and spill container as a combined unit. The operation of the combined unit shall be documented and approved by the manufacturer of the tank.

The product certificate with technical approval is only applicable if the requirements mentioned in paragraph 4.5 and 4.6 of the Evaluation Guideline are fulfilled. These are:

Installation and user instructions

The manufacturer shall provide proper written installation and users' instructions in the language of the country where the tank is to be installed and used. These instructions shall reference compliance with the national environmental regulations pertaining to the storage of chemicals. National regulations can stipulate requirements for preventing accidental impact to the tank and spill container and requirements for the overfill prevention and anti siphon devices. National regulations stipulate that the installation be carried out by certified installers. The Evaluation Guideline BRL-K903 provides additional information pertaining to the installation of the tank and spill container.

In all cases the appendages used shall be resistant to the chemical stored and this shall be suitably demonstrated by the tank manufacturer.

Documentation to be supplied with the tank and spill container

Every PE-tank / spill container shall be supplied with at least the following documents:

- Installation / user instructions in the language of the country where the tank is to be installed and used in. The certification body shall approve these instructions.
- A unique tank / spill container compliance document with the approval of the certification body in relation to the product certificate with technical approval.

		Number	K12345/01	Replaces	
Page:	3	Issued	2011-11-01	Dated	--

MARKING

The products are marked with the Kiwa mark

Place of the mark:

Each PE tank and spill container shall be indelibly marked.

Compulsory indications:

- Manufacturer's name and/or trade name;
- Kiwa certification mark;
- Serial number of the tank and spill container;
- Month and year of manufacture;
- Nominal volume of tank in litres or m³;
- Chemical to be stored in tank (CAS number (Chemical Abstract Service number)) with the relevant concentration (or trade name when a CAS number is not available);
- Location of the storage tank: Inside or outside;
- Factory tested: With air at 0,1/0,3 bar/at full hydrostatic pressure with water for 24 hours;
- Maximum operating temperature of chemical to be stored;
- Recertification period when this is lower than 10 years.

The realization of the marks is as follows:

- indelible;
- clearly visible on the outside of the tank or spill container.

When this information is provided on an identification label, provisions shall be made to ensure that this label cannot be removed from the tank / spill container

RECOMMENDATIONS FOR CUSTOMERS:

1. Check at the time of delivery whether:
 - 1.1 the products are in accordance with the agreement;
 - 1.2 the mark and marking method are correct;
 - 1.3 the products show no visible defects as a result of e.g. transport.
2. If you should reject a product on the basis of the above, please contact:
 - 2.1 <<Organisation>> <<Department>>
and, if necessary:
 - 2.2 Kiwa Nederland B.V.
3. Consult the supplier's processing guidelines for a proper storage and transport of the products.
4. Check whether this certificate is still valid by consulting the list of certified companies at www.kiwa.nl.



Annex B Model Compliance document

Tank/Spill Container compliance document

BRL-K21008

Rotational moulded polyethylene (PE) tanks and spill containers for the above ground storage of chemicals

Client

(name)
(address)
(town)

Manufacturer

(name)
(address)
(town)
(telephone)
(telefax)
(e-mail)

Location

(name)
(address)
(town)

Registration Number

Registration date

Data	Volume (litre)	Diameter (mm)	Length (mm)	Height (mm)	Year of mfr.	Serial no.	Design no.	Material
Tank								PE
Spill Container								PE

Remarks

The tank and spill container are suitable for outside/inside storage of << name of chemical with CAS number>>. The tank has been tested with air at 0,1/0,3 bar/at full hydrostatic pressure with water for 24 hours << Stipulate as applicable>>.

Declaration of Kiwa Nederland B.V.

Based on pre-certification tests as well as periodic inspections by Kiwa, the product referred to on this certificate and constructed by above mentioned manufacturer, may, on delivery, be relied upon to comply with the Kiwa Evaluation Guideline BRL-K21008.

Declaration of Construction Company

The manufacturer declares that the tank and spill container have been produced according to the requirements specified in the Kiwa Evaluation Guideline BRL-K21008.

Recommendations for Customers:

Check on receipt of the tank/spill container certificate whether:

- The serial number on the tank and spill container complies with this certificate
- The tank and spill container show no visible defects as a result of transport

If you should reject this product on the basis of the above, please contact:

1. The manufacturer
2. Kiwa Nederland B.V.

A tank installation can only be in compliance with the Dutch legislation (BARIM/RARIM) when, in addition to this tank/spill container certificate, a certificate for the complete installation has been issued.



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

Telephone +31 70 41 44 400
Telefax +31 70 41 44 420
Internet www.kiwa.nl
E-mail certif@kiwa.nl

A copy of this certificate shall be given to the:
Legislative authorities, Client, Manufacturer, Kiwa Nederland B.V.

Validation date:

Registration Number:



Annex C Model IQC-schedule

Subjects	Aspects	Method	Frequency	Registration
Raw materials or materials supplied <ul style="list-style-type: none">• PE granulates• Incoming goods inspection raw materials				
Production process, production equipment, material: <ul style="list-style-type: none">• Procedures• Working instructions• Equipment• Release of product				
Finished-products: <ul style="list-style-type: none">• Visual inspection• Dimensional inspection• Wall thickness• Leak tightness				
Measuring and testing equipment <ul style="list-style-type: none">• Measuring equipment• Calibration• Test equipment				
Transport & Storage <ul style="list-style-type: none">• Internal transport• Storage• Packaging• Preservation• Identification or marking of semi-manufactures and end-products				