



Technical approval-with-product certificate **K99936/02**

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GEROfit® REX class II and class III polyethylene piping system with an aluminium barrier layer for the transport of drinking water in polluted soil

STATEMENT BY KIWA

With this technical approval-with-product certificate, issued in accordance with the Kiwa Regulations for Certification, Kiwa declares that legitimate confidence exists that the products supplied by

GERODUR MPM Kunststoffverarbeitung GmbH & Co. KG

as specified in this technical approval-with-product certificate and marked with the Kiwa®-mark in the manner as indicated in this technical approval-with-product certificate may, on delivery, be relied upon to comply with Kiwa evaluation guideline BRL-K17101 "Class II and class III polyethylene piping systems with an aluminium barrier layer for the transport of drinking water in polluted soil" dated 12-12-2017, with reference to Kiwa guidance document BRL K17101.

Within the framework of this technical approval-with-product certificate Kiwa does not impose any inspections with regard to the production of other parts of the plastics piping system, nor the manufacturing of the plastics piping system itself.

Ron Scheepers
Kiwa

Publication of this certificate is allowed.

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

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**Certification process
consists of initial and
regular assessment of:**

- quality system
- product

GEROfit® REX class II and class III PE piping system for the transport of drinking water in polluted soil

PRODUCT SPECIFICATION

This certificate covers GEROfit® REX class II and class III polyethylene (PE) pipes and fittings for the transport of drinking water according to BRL-K17101 "Class II and class III polyethylene piping systems with an aluminium barrier layer for the transport of drinking water in polluted soil".

The system consists of:

- PE pipes with wound aluminium barrier layer manufactured by GERODUR MPM Kunststoffverarbeitung GmbH & Co. KG (certificate K99935);
 - Diameters and types according to the table below.
- Metal fittings supplied by GERODUR MPM Kunststoffverarbeitung GmbH & Co. KG (certificate K99916);
 - Diameters 32mm, 40mm, 50mm and 63mm;
 - To be applied with SDR11 pipes, see also the table below.

TECHNICAL SPECIFICATION

Black PE pressure pipes with an additional aluminium barrier layer and blue thermoplastic protection layer with green identification stripes.

The pipe dimensions as given in the table below are part of this certificate.

PN Diameter	SDR26	SDR21	SDR17	SDR13,6	SDR11
PE100	PN6	PN8	PN10	PN12,5	PN16
32	-	-	X	X	X
40	-	X	X	X	X
50	X	X	X	X	X
63	X	X	X	X	X
75	X	X	X	X	X
90	X	X	X	X	X
110	X	X	X	X	X
125	X	X	X	X	X
140	X	X	X	X	X
160	X	X	X	X	X
180	X	X	X	X	X
200	X	X	X	X	X
225	X	X	X	X	X
250	X	X	X	X	X
280	X	X	X	X	X
315	X	X	X	X	X
355	X	X	X	X	X
400	X	X	X	X	X
450	X	X	X	X	X
500	X	X	X	X	X
560	X	X	X	X	X
630	X	X	X	X	X

Fitness for contact with drinking water

The pipes and fittings used in this system are approved on the basis of the requirements for hygienic aspects set in the "Regeling materialen en chemicaliën drink- en warm tapwatervoorziening" dated 01-07-2017; ("Materials and chemicals in the supply of drinking water and warm tap water Regulation"; published in the Government Gazette). The criteria for these hygienic aspects are recorded in the respective product certificates.



MARKING

The products shall be marked with the Kiwa®-mark

GEROfit® REX class II and class III PE piping system for the transport of drinking water in polluted soil

Pipes

Pipes shall be provided with the following marks:



- **KIWA**  or  ;
- manufacture's name, trade name;
- material identification: PE 100 (of the inner pipe);
- class II and class III;
- SDR number of the inner pipe;
- nominal pressure (PN);
- nominal outside diameter of the inner pipe;
- production code;
- BRL-K17101.

Location of the mark: on each pipe at a distance of up to 2 meters.


The implementation of the marks is as follows: clear, durable and indelible marks.

Fittings

Fittings shall be provided with the following clearly legible and indelible markings:

- **KIWA**  or  ;
- manufacture's name, trade name;
- designation: "BRL-K17101";
- designation: class II and class III;
- the pressure class (PN);
- the nominal diameter and nominal wall thickness of the connecting inner pipe;
- production code.

In consultation with Kiwa:

- the combination of Kiwa® mark and the Kiwa® water mark may be replaced by KK or 
- may some marks be printed or formed on the (smallest) packaging unit, e.g. because the fittings are too small to be able to print or form all the marks on the fitting.

LOGISTICS

Production and assembly of the system is laid down in the annex of the certification agreement.

APPLICATION AND USE

The products are intended for PE piping systems for the transport of drinking water in highly polluted soil with hydrocarbon concentration up to saturation in the surrounding groundwater. The permeation requirements for barrier pipe systems (pipes and connection) has been set as $C_{24h} \leq 1 \mu\text{g/l}$. This guarantees an acceptable limit in the drinking water at a lifetime of the piping system of 50 years and after a standstill time of 24 hours.

Restrictions for use:

- Class II piping systems are installed in areas where the pollution of the ground is most likely higher than the intervention values. In this case there is a serious pollution. Average concentrations of the contaminants higher than 15 % of the saturation value are seldom found in practice. However because the contaminants in the soil are not homogeneously divided, the pipe systems are being tested for their permeation behaviour at a concentration of 60 % of the saturation value of the model substances. Thus, the most common contaminants are covered adequately because 15 % is a value that is much higher than the values measured in practice.
- Class III piping systems are installed in areas with an increased risk, for example where extreme pollution of the ground can occur due to calamities. The applied piping system must be completely resistant to any pollution (such as toluene, aromatic mixtures and chlorinated substances). Tests are performed with a concentration of 100 % of the saturation value of the model substances.

In order to fulfil the permeation requirement of $C_{24h} \leq 1 \mu\text{g/l}$ for the system (combination of pipes and fittings), the number of fittings to be applied per pipe length is limited, see the following tables:

SDR11 pipes, class II	
Nominal pipe and fitting diameter (mm)	Metal fittings to be applied not more than one fitting per (meter pipe length)
32	32
40	24
50	11
63	3,5

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SDR11 pipes, class III	
Nominal pipe and fitting diameter (mm)	Metal fittings to be applied not more than one fitting per (meter pipe length)
32	86
40	54
50	23
63	6,5

See BRL K17101, par. 1.2 for further explanation about the classification of drinking water piping systems in polluted soil.

The maximum temperature of the drinking water to be transported is 45 °C.

For further information see the Kiwa guidance document for BRL K17101 and K17102.

RECOMMENDATIONS FOR CUSTOMERS

Check at the time of delivery whether:

- the supplier has delivered in accordance with the agreement;
- the mark and the marking method are correct;
- the products show no visible defects as a result of transport etc.

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

- GERODUR MPM Kunststoffverarbeitung GmbH & Co. KG

and, if necessary,

- Kiwa Nederland B.V.

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