

Version  
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English version

# Approval requirement 200

Plastics piping systems for the supply of  
gaseous fuels – Polyethylene (PE) - Fittings



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## Preface Kiwa

This approval requirement (AR) is approved by the Board of Experts (BoE) GASTEC QA, in which relevant parties in the field of gas related products are represented. This Board of Experts supervises the certification activities and where necessary require the GASTEC QA approval requirement to be revised. All references to Board of Experts in this GASTEC QA approval requirement pertain to the above-mentioned Board of Experts.

This AR will be used by Kiwa Nederland BV in conjunction with the GASTEC QA general requirements and the KIWA regulations for certification.

In this AR is established which requirements a product and the requestor/ certificate holder of the GASTEC QA product certificate should meet and the matter to which Kiwa evaluates this.

Kiwa has a method which is established in the certification procedure for the execution of:

- The investigation for provisioning and maintaining a GASTEC QA product certificate based on this AR.
- The periodic evaluations of the certified products for the purpose of maintaining a provided GASTEC QA product certificate based on this AR.

Approved by the Board of Experts: Month date, year

Accepted by Kiwa Nederland B.V.: Month date, year

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# 1. Introduction

## 1.1. General

This GASTEC QA approval requirement (AR) in combination with the GASTEC QA general requirements, is applied by Kiwa as the basis for the issuing and maintaining the GASTEC QA product certificate for plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Fittings.

With this product certificate, the certificate holder can demonstrate to his or her customers that an expert independent organization monitors the production process of the certificate holder, the quality of the product and the related quality assurance.

Next to the requirements established in this AR and the general requirements, Kiwa has additional requirements in the sense of general procedural requirements for certification, as laid down in the internal certification procedures.

This GASTEC QA approval requirement replaces the version of **July 2022**.

List of changes:

- This approval requirement has been adapted to the new layout of GASTEC QA approval requirements
- The approval requirement is fully textually reviewed
- Paragraph «numbers» has been changed,
- Paragraph «numbers» related to «subject» has been removed,
- Paragraph «numbers» has been added,
- The chapter division has been adjusted
- The list of reference standards has been adjusted

The product requirements have / have not changed.

## 1.2. Scope

This approval requirement specifies the requirements for fusion fittings made of polyethylene (PE) as well as of mechanical fittings for use in plastic piping systems for the supply of gaseous fuels of the 2<sup>nd</sup> and 3<sup>rd</sup> family according to EN 437 with a maximum operating pressure of **up to and including** 10 bar at a reference temperature of 20°C. The operating temperature is between -20 °C and 40 °C.

This approval requirement is applicable for fittings of the following types:

- Electrofusion socket fittings
- Electrofusion saddle fittings
- Spigot end fittings (for butt fusion and electrofusion socket fusion)
- Mechanical fittings

## 2. Definitions

In this approval requirement, the following definitions are applicable:

**Board of Experts (BoE):** The Board of Experts GASTEC QA.

**Maximum operating pressure (MOP):** Maximum pressure that a component is capable of withstanding continuously in service under normal operating conditions.

**Operating temperature:** Temperature or temperature range for which the product is designed to operate.

See also the definitions mentioned in the GASTEC QA general requirements.

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## 3. Material and product requirements

This chapter contains the material and product requirements that the raw materials, materials and products used shall meet.

### 3.1. General

The product shall comply with the requirements as specified in EN 1555-3: 2025 "Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 3: Fittings".

In addition to these requirements the below mentioned requirements shall be met:

### 3.2. Appearance

If electro fusion fittings are suitable to be welded on SDR 17 or SDR 17.6 pipes the internal and external surfaces of the pipe and the fitting after fusion jointing shall be in accordance to 6.4 of EN 1555-3. Visual examination shall be done on pipe/fitting assemblies with SDR 17.6 pipes.

### 3.3. Decohesive resistance

Contrary to EN 1555-3 table 4, the requirements and test method of the decohesive resistance shall be in accordance to NTA 8828+A1:2026 table 4.

### 3.4. Evaluation of ductility of fusion joint interface

Contrary to EN 1555-3 table 4, the requirements and test method of the evaluation of ductility of fusion joint interface shall be in accordance to NTA 8828+A1:2026 table 4.

### 3.5. Elastomers

Contrary to EN 1555-3 article 5.2.3, elastomeric sealing components shall conform to the requirements of EN 682, type GAL or GBL.

### 3.6. Inserts

When declared by the manufacturer, it is allowed to use inserts for connecting a fitting. The insert shall be supplied with the fitting or separate available.

The insert shall be rigid and provide support over the entire compression area where:

- The clamping force applies, applicable for mechanical joints;
- The welding pressure applies, applicable for fusion joints.

The insert may not affect the welding process.

The insert shall not be able to displace in longitudinal direction after assembly.

After installation of the insert, the pipe shall show no signs of damage, scratches or cracks to an extent that would prevent conformity to the requirements of the standard for PE pipes.

The material of the insert shall be fit for purpose. A fitting shall have only one insert for each combination of diameter and SDR series of the pipe with which its assembled and this shall be stated by the manufacturer in his installation manual. The minimal internal bore diameter of the fitting shall

## 4. Marking and instructions

### 4.1. Marking

Additional to the marking as required per EN 1555-3, the products shall be durably marked with:

- GASTEC QA, GASTEC QA logo or punchmark

### 4.2. Instructions

The supplier shall provide user instructions in the Dutch language and in the language of the country in which the product will be used. These instructions shall have the following information included:

- The use and installation of the product.
- The use of inserts.
- The conditions under which it shall be used.
- How it can be determined if the product is correctly installed.
- The way the product shall be stored.
- Fusion compatibility: a list of compatible PE materials shall be stated.

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## 5. Quality system requirements

The requirements for the quality system are described in the GASTEC QA general requirements. An important part of this are the requirements for drawing up a risk analysis (e.g., an FMEA) of the product design and the production process in accordance with chapters 3.1.1.1 and 3.1.2.1. This risk analysis shall be available for inspection by Kiwa.

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## 6. Summary of evaluation

This chapter contains a summary of the evaluation to be carried out during:

- The initial product assessment;
- The periodic product verification;

### 6.1. Evaluation matrix

Description of requirement	Clause EN 1555-3	Investigation within the scope of		
		Initial product assessment	Product verification	
			Inspection	Frequency
<b>Material</b>	5			
Compound for fittings	5.1	X	X	1x / year
Material for non-polyethylene parts	5.2	X	X	1x / year
Metal parts	5.2.2	X	X	1x / year
Sealing materials	5.2.3	X	X	1x / year
Greases and lubricants	5.2.4	X	X	1x / year
Other materials	5.2.5	X	X	1x / year
<b>General characteristics</b>				
Appearance	6.1	X	X	1x / year
Colour	6.2	X	X	1x / year
Design	6.3	X		
Appearance of factory-made joints	6.4	X		
Electrical characteristics for electro fusion fittings	6.5	X	X	1x / year
<b>Geometrical characteristics</b>	7 (including all sub clauses)	X	X	1x / year
<b>Mechanical characteristics</b>	8			
General	8.1	X		
Requirements	8.2	X		
Hydrostatic strength (20°C, 100 h)	8.2	X		
Hydrostatic strength (80°C, 165 h)	8.2	X		
Hydrostatic strength (80°C, 1000 h)	8.2	X	X	1x / year
Resistance to slow crack growth PE 100RC Strain hardening test	8.2	X	X	1 x / 2 years
Decohesive resistance (A)	8.2	X	X	1x / year
Evaluation of ductility of joint fusion interface (B)	8.2	X	X	1x / year
Tensile strength for butt fusion (C)	8.2	X	X	1x / year
Impact resistance (B)	8.2	X	X	1x / year
Pressure drop (B)	8.2	X		
<b>Performance requirements</b>				
Short term internal pressure resistance	8.3	X		
Resistance to tensile load	8.3	X		
<b>Physical characteristics</b>				
Oxidation induction time (OIT)	9.2	X		
Melt mass-flow rate (MFR)	9.2	X		
<b>Performance requirements</b>	<b>10</b>	X		

Description of requirement	Clause EN 1555-3	Investigation within the scope of		
		Initial product assessment	Product verification	
			Inspection	Frequency
<b>Technical file</b>	<b>11</b>	X		
<b>Marking</b>	<b>12</b>	X		
General	12.1	X	X	1x / year
Minimum required marking of fittings	12.2	X	X	1x / year
Additional marking	12.3	X	X	1x / year
Fusion system recognition	12.4	X	X	1x / year
Delivery conditions	13	X	X	1x / year
<b>Additional GASTEC QA Approval Requirements 200</b>				
Appearance	3.2	X		
Decohesive resistance	3.3	X		
Evaluation of ductility of fusion joint interface	3.4	X	X	1x / year
Elastomers	3.5	X	X	1x / year
<b>Inserts</b>	<b>3.6</b>	<b>X</b>	<b>X</b>	<b>1x / year</b>
Marking	4.1	X	X	1x / year
Instructions	4.2	X	X	1x / year

## 7. List of referenced documents and source

### 7.1. Standards/ normative documents

Number	Title	Version *
EN 682	Elastomeric seals - Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids	2002/A1:2005
EN 1555-3	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 3: Fittings	2025
EN 1555-7	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 7: Guidance for the assessment of conformity	2022
NTA 8828	Electrofusion of PE pipes and PE fittings	2026

\*) If no date of issuance is specified in this column, the current version of the document applies.

### 7.2. Source of informative documents

Number	Title	Version *
EN 437	Test gases- test pressure – appliance categories	2021
EN 12007 series	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar	
NEN 7244 series	Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar	
General requirements GASTEC QA		

\*) If no date of issuance is specified in this column, the current version of the document applies.