English translation

AR 11

March 2024 Dutch version

Approval requirement 11

Gas pressure regulators, gas leak protectors and combination regulators

Trust
Quality
Progress

Foreword

This GASTEC QA approval requirement (Dutch version) has been approved by the Board of Experts product certification 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 GASTEC QA approval requirement (Dutch version) will be used by Kiwa Nederland BV in conjunction with the GASTEC QA general requirements and the KIWA regulations for certification.

This approval requirement is a translation from the Dutch validated version and can only be used as a supporting document.

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Contents

1 Introduction

1.1 General

These GASTEC QA Approval Requirements in combination with GASTEC QA general requirements are used by Kiwa as the basis for the issue and maintenance of the GASTEC QA product certificate for gas pressure regulators, gas leak protectors and gas pressure regulators combined with gas leak protectors for domestic installations.

This approval requirement replaces the version of February 2019.

List of changes:

- The approval requirement is updated in line with the revised version of NEN 7239
- Adjustment in scope
- These approval requirements have been fully reviewed textually.

The product requirements have not changed.

1.2 Scope

The products are intended to be used as gas pressure regulators, gas leak protectors and gas pressure regulators combined with gas leak protectors for domestic installations with a capacity up to 10 m^3_n/h natural gas and 30 m^3_n/h hydrogen and an inlet pressure (MOPu) up to 200 mbar at ambient temperatures comprised between -20°C and 50°C.

When these products are intended to be used with a capacity up to 30 m^3_n/h hydrogen, approval requirement 214 shall be followed for approval. Approval requirement 214 defines the additional requirements for the use of the products with hydrogen.

This approval requirement does not apply to gas pressure regulators with built-in safety against excessive outlet pressure.

2 Definitions

In this approval requirement, the following terms and definitions are applicable:

Board of Experts: The Board of Experts Gastec QA.

3 Product requirements

3.1 General

Gas pressure regulators, gas leak protector and gas pressure regulators combined with gas leak protectors for domestic installations shall comply with the product requirements described by NEN 7239 “Gas pressure regulators, gas leak protectors and gas pressure regulators combined with gas leak protectors for domestic installations with a capacity up to 10 m^3_n/h natural gas and 30 m^3_n/h hydrogen and an inlet pressure (MOPu) up to 200 mbar”.

In addition, the following requirements shall be met.

3.1.1 Material characteristics

Additionally, to paragraph 4.1 of NEN 7239, an insulation union coupling shall meet the requirements of approval requirements 154.

3.1.2 Corrosion resistance

The manufacturer shall declare in writing that all parts in contact with ambient air are made of corrosion-resistant material or are duly protected against corrosion.

3.1.3 Porosity

The manufacturer shall declare in writing that eventual porosity or cracks in gas-carrying parts of gas pressure regulators, gas leak protector and gas pressure regulators combined with gas leak protectors for domestic installations, may not lead to gas leaks or technical failures.

3.1.4 Rubber parts

Rubber parts shall comply with the requirements described in EN 549, minimum class A2 or EN 682, type GBL or GAL. See NPR 7028 for the dimensions of rubber gaskets in gas meters and connections.

Note: The requirement for external density is described in section 6.3 of NEN 7239 and is not seen as a product requirement for rubber material.

3.1.5 Adjustable packings

Adjustable gaskets for connections between moving parts are not allowed.

3.1.6 General connection possibilities

If an insulation union coupling is used to make a non-electric conduction, this insulation union coupling shall meet the requirements of approval requirements 154.

3.1.7 Durability

Contrary to paragraph 8.8.1 of NEN 7239, during testing the number of cycles shall be 40.000 instead of the mentioned 25.000 cycles.

3.1.8 Stresscorrosion in copper alloyes

Contrary to NEN 7239, paragraph 8.10.1, to the determine the corrosion resistance of copper alloys, the ammonia test according to ISO 6957 shall be carried out with a pH of 9,5.

4 Marking

4.1 Marking

Additionally, to the marking as described in NEN 7239 the gas pressure regulators, gas leak protectors and combination regulators shall be marked with:

- GASTEC QA, the GASTEC QA logo or punch mark
- Flow in m3/h natural gas

5 Quality system requirements

The supplier shall make a risk assessment of the product and production process according to chapter 3.1.1.1 and 3.1.2.1 of the GASTEC QA general requirements. The risk assessments shall be available to Kiwa for review.

6 Summary of tests

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

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

6.1 Test matrix

Description of requirement	Clause (NEN 7239)	Test within the scope of		
		Initial product assessment	Product verification	
			Verification	Frequency
Material				
Material characteristics	4.1	X		
Durability	4.2	X		
Corrosion resistance	4.3	X		
Porosity	4.4	X		
Rubber parts	4.5	X	X	1x / year
Requirements for the construction				
Implementation	5.1	X		
Connection options	5.2			
General	5.2.1	X		
Threaded connection	5.2.2	X	X	1x / year
Gas meter coupling	5.2.3	X	X	1x / year
Flange connection	5.2.4	X	X	1x / year
Functional operation				
Mounting position	6.2			
Gas tightness	6.3			
External gas tightness	6.3.1	X	X	1x / year
Internal gas tightness	6.3.2	X	X	1x / year
Pressure control	6.4			
Control behavior with evenly changing flow rate	6.4.1	X	X	1x / year
Control behavior with suddenly changing flow rate	6.4.2			
Closing pressure	6.4.2.1	X	X	1x / year
Increasing flow	6.4.2.2	X	X	1x / year
Gas leak protection	6.5			
Addressing pressure	6.5.1	X	X	1x / year
Closed position	6.5.2	X	X	1x / year
Breakdown pressure	6.5.3	X	X	1x / year
Gas pressure loss	6.5.4	X	X	1x / year
Silence and vibration	6.6	X	X	1x / year
Mechanical strength	6.7			
Resistance against bending and torsion	6.7.1	X	X	1x / year
Resistance against high pressure	6.7.2	X	X	1x / year

Description of requirement (continued)	Clause (NEN 7239)	Test within the scope of		
		Initial product assessment	Product verification	
			Verification	Frequency
Durability	6.8			
Domestic gas pressure regulators and combined regulators	6.8.1	X		
Gas leak protection	6.8.2	X		
Resistance against the effects of gas	6.9	X		
Resistance against chemical influences	6.10	X		
Sustainability of marks	6.11	X		
Resistance to moisture	6.12	X		
Recognizability, assembly and operating instructions	7			
Marking	7.1	X	X	1x / year
Assembly and installation instructions	7.2	X		
Additional requirements GASTEC QA				
Material characteristics	3.1.1	X		
Corrosion resistance	3.1.2	X		
Porosity	3.1.3	X		
Rubber parts	3.1.4	X	X	
Adjustable packings	3.1.5	X		
General connection possibilities	3.1.6	X		
Durability	3.1.7	X		
Stress corrosion in copper alloys	3.1.8	X		
Marking	4.1	X	X	

7 List of referenced documents and source

7.1 Standards / normative documents

All normative references in this approval requirement refer to the editions of the standards as mentioned in the list below.

NEN 7239: 2023	Gas pressure regulators, gas leak protectors and gas pressure regulators combined with gas leak protectors for domestic installations with a capacity up to 10 m^3_n/h natural gas and 30 m^3_n/h hydrogen and an inlet pressure (MOPu) up to 200 mbar
ISO 6957: 1988	Copper alloys – Ammonia test for stress corrosion resistance

7.2 Standards / informative documents

EN 437: 2021	Test gases- test pressure – appliance categories
EN 549: 2019 + A1: 2013	Rubber materials for seals and diaphragms for gas appliances and gas equipment
General Requirements GASTEC QA	