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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 15558.5-2023

**Buried polyethylene(PE) piping systems for the supply of
gaseous fuels - Part 5: Fitness for purpose of the system**

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents"

Drafting:

This document is Part 5 of GB/T 15558 "Underground polyethylene (PE) piping system for gas use": GB/T 15558 has been released

The following parts:

---Part 1: General provisions;

---Part 2: Pipes;

---Part 3: Pipe fittings;

---Part 4: Valves;

---Part 5: System suitability:

This document has been modified to adopt ISO 4437-5:2014 "Plastic piping system polyethylene (PE) for gas use Part 5: System suitability":

Compared with ISO 4437-5:2014, this document has many structural adjustments:

Comparison list of structure number changes between two files

See Appendix A for the table:

Compared with ISO 4437-5:2014, this document has many technical differences: Vertical text is used in the outer margin of the clauses involved:

The single line (?) is marked: A list of these technical differences and their causes is shown in Appendix B:

The following editorial changes have been made to this document:

---In order to coordinate with the existing standards, the name of the standard is changed to "Buried polyethylene (PE) pipeline system for gas use - Part 5: System application

sex";

---In order to facilitate the understanding and use of the standard, notes that are not in line with my country's national conditions have been deleted, and some notes have been changed or added;

---Deleted Appendix A (informative) of ISO 4431-5:2014:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

GB/T 15558 "Buried Polyethylene (PE) Pipeline System for Gas" is to standardize the materials of buried polyethylene (PE) pipeline system for gas:

Materials, pipes, fittings, valves and system suitability requirements: During this revision process, GB/T 15558:1-2023 and

2023 replaced GB/T 15558:1-2015, GB/T 15558:2-2005 and GB/T 15558:3-2008 respectively:

GB/T 15558 "Buried Polyethylene (PE) Pipeline System for Gas" was drafted based on the actual production and application of polyethylene pipeline products in my country:

It consists of five parts: general principles, pipes, fittings, valves and system applicability:

---Part 1: General principles: The purpose is to establish the terms, definitions, symbols and regulations applicable to buried polyethylene (PE) piping systems for gas:

Abbreviations, materials, test methods and inspection report requirements:

---Part 2: Pipes: The purpose is to establish terms, definitions, symbols and abbreviations applicable to buried polyethylene (PE) pipes for gas

language, materials, product classification, requirements, test methods, inspection rules, marking and packaging, transportation, and storage:

---Part 3: Pipe fittings: The purpose is to establish terms, definitions, symbols and abbreviations applicable to buried polyethylene (PE) pipe fittings for gas

language, materials, product classification, requirements, test methods, inspection rules, markings, technical documents and packaging, transportation and storage:

---Part 4: Valves: The purpose is to establish terms, definitions, symbols and abbreviations applicable to buried polyethylene (PE) valves for gas use:

language, materials, product classification, requirements, test methods, inspection rules, markings, technical documents and packaging, transportation and storage:

---Part 5: System suitability: The purpose is to establish the system suitability for buried polyethylene (PE) piping systems for gas

Terms, definitions, requirements, test methods and inspection rules:

System applicability refers to when several components are combined together in a certain way to form a whole (system) with specific functions:

Whether the parts (and how they are combined) support the characteristics of the whole (system) to achieve the expected goals: Various components of underground polyethylene piping system for gas

Manufactured by the same or different manufacturers, taking into account factors such as operating temperature, materials, product dimensional deviations (such as outer diameter, wall thickness, out-of-roundness, etc.), the tolerances

Prepare assemblies within the allowable range and extreme conditions, and verify the performance of polyethylene piping system products and systems through the performance test evaluation of this document:

applicability:

Buried polyethylene (PE) piping system for gas

Part 5: System suitability

1 Scope

This document specifies the sample preparation and joint mechanical properties and inspection regulations for the system suitability of buried polyethylene (PE) pipeline systems for gas use:

then the requirements and the corresponding test methods are described:

This document, together with other parts of GB/T 15558, is applicable to operating temperatures of -20 degrees C~40 degrees C and maximum working pressure:

Buried polyethylene piping system for gas with (MOP) not greater than 1.0MPa, including

pipes, pipe fittings, ball valves and their joints or components:

Note 1: The MOP of the piping system is related to the operating temperature and the material's rapid crack propagation resistance RCP critical pressure, see Appendix C of GB/T 15558:1-2023:

The reference operating temperature is 20 degrees C:

Note 2: Relevant parties are responsible for appropriately selecting the products specified in GB/T 15558 (all parts) based on specific application requirements and in combination with relevant laws, standards and specification requirements:

product:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document:

GB/T 2918 Standard environment for conditioning and testing of plastic specimens (GB/T 2918-2018, ISO 291:2008, MOD)

GB/T 6111 Determination of internal pressure resistance of thermoplastic piping systems for fluid transportation (GB/T 6111-2018, ISO

1167-1:2006, ISO 1167-2:2006, ISO 1167-3:2007, ISO 1167-4:2007, NEQ)

GB/T 15558:1-2023 Buried polyethylene (PE) piping system for gas use Part 1: General principles (ISO 4437-1:2014, MOD)

GB/T 15558:2-2023 Buried polyethylene (PE) piping systems for gas use Part 2: Pipes (ISO 4437-2:2014, MOD)

GB/T 15558:3-2023 Buried polyethylene (PE) piping systems for gas use Part 3: Pipe fittings (ISO 4437-3:2014, MOD)

GB/T 15558:4-2023 Buried polyethylene (PE) piping systems for gas use Part 4: Valves (ISO 4437-4:2022,