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

GB/T 15558.3-2023

Replacing GB/T 15558.2-2005

**Buried polyethylene(PE) piping systems for the supply of
gaseous fuels - Part 3: Fittings**

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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 3 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 replaces GB/T 15558:2-2005 "Buried polyethylene (PE) piping system for gas use Part 2: Pipe fittings" and is consistent with

Compared with GB/T 15558:2-2005, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Added requirements that the maximum working pressure should not be greater than 1:0MPa and the working temperature should be between -20°C and 40°C (see Chapter 1);
- b) The nominal outer diameter range has been changed (see Chapter 1, Chapter 1 of GB/T 15558:2-2005);
- c) Changes in terms and definitions (see Chapter 3, Chapter 3 of GB/T 15558:2-2005);
- d) Changed the symbols and added abbreviations (see 3:2, Chapter 4 of GB/T 15558:2-2005);
- e) Added relevant requirements for PE100-RC materials and pipe fittings (see Chapter 4);
- f) Delete the relevant requirements for additives (see 5:2 of GB/T 15558:2-2005);
- g) The material weldability requirements are deleted (see 5:6 of GB/T 15558:2-2005);
- h) The requirements for metal parts have been changed (see 4:2:2, 5:7:2 of GB/T 15558:2-2005);
- i) Changed the requirements for elastic seals (see 4:2:3, 5:7:3 of GB/T 15558:2-2005);
- j) The requirements for recycled materials/recycled materials have been changed (see 4:3, 5:3 of GB/T 15558:2-2005);
- k) Changed the color requirements for pipe fittings (see 6:2, 6:1 of GB/T 15558:2-2005);
- l) Added the pressure-bearing capacity, saddle-shaped bypass opening, out-of-roundness that needs to be considered when designing the saddle, and brackets to prevent the socket from being out-of-round:
Requirements (see 6:3:1);
- m) It is added that the socket end of the pipe fitting can be equipped with a temporary bracket to prevent the port from being out of round (see 6:5:1);
- n) Added relevant dimensional requirements for the spigot end and socket end of pipe fittings dn710mm and dn800mm (see 6:5:2:2 and 6:5:3:2);
- o) The requirement for average outer diameter grade A of the pipe fitting spigot end size is deleted (see 7:2:1 of GB/T 15558:2-2005);
- p) Added the requirements for the average inner diameter of the electrofusion socket end; deleted the requirements for the insertion depth of the electrofusion socket end under the current adjustment state (see 6:5:3:2, 7:2:2 of GB/T 15558:2-2005);
- q) Added other dimensional requirements for electrofusion pipe fittings (see 6:5:3:5);
- r) The relevant distance requirements for electrofusion saddle-shaped pipe fittings have

been changed (see 6:5:4, 7:3:3 of GB/T 15558:2-2005);

s) Added dimensional requirements for flange connection pipe fittings (see 6:5:5);

t) The hydrostatic strength (20 degrees C, 100h) test parameters have been changed (see 6:6, 8:2 of GB/T 15558:2-2005);

u) Added requirements for welding strength, strain hardening test, ash content, carbon black content, carbon black dispersion/pigment dispersion of electrofused saddle-shaped pipe fittings (see

6:6, 6:7);

v) Changed the oxidation induction time parameter (see 6:7, Chapter 9 of GB/T 15558:2-2005);

w) Added system suitability requirements (see 6:8);

x) The relevant test method requirements for performance requirements have been changed (see Chapter 7, see Chapter 10 of GB/T 15558:2-2005);

y) Changed the grouping of pipe fittings (see 8:2, see 11:3:3 of GB/T 15558:2-2005);

z) Added the list of inspection items (see 8:4:1);

aa) Added control point test (see 8:5);

ab) Changed type inspection requirements (see 8:6, see 11:3:5 of GB/T 15558:2-2005);

a) Added mixing ingredients, pressure level, and flow label requirements (see 9:2);

ad) Added traceability code and barcode identification (see 9:2);

ae) Changes in packaging, transportation and storage requirements (see Chapter 11, Chapter 14 of GB/T 15558:2-2005);

af) Added Appendix D "Test Method for Welding Strength of Electrofusion Saddle Pipe Fittings";

This document has been modified to adopt ISO 4437-3:2014 "Plastic piping system polyethylene (PE) for gas use Part 3: Pipe fittings":

Compared with ISO 4437-3:2014, this document has many structural adjustments:

Comparison list of structure number changes between two files

See Appendix A for the table:

Compared with ISO 4437-3:2014, 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 3: Pipe fittings";

---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 E of ISO 4437-3:2014:

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 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: