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

GB/T 13663.3-2018

**Polyethylene (PE) piping systems for water supply -- Part 3:
Fittings**

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Foreword

GB/T 13663 "Polyethylene (PE) Piping System for Water Supply" is divided into five parts.

--- Part 1. General;

--- Part 2. Pipe;

---Part 3. Pipe fittings;

--- Part 4. Valves;

--- Part 5. System suitability.

This part is the third part of GB/T 13663.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 13663.2-2005 "Polyethylene (PE) piping system for water supply Part 2. Pipe fittings", and

Compared with GB/T 13663.2-2005, the main technical changes are as follows.

---The standard number was changed from GB/T 13663.2 to GB/T 13663.3 (see the cover of this section);

--- Increased the maximum working pressure is not more than 2.0MPa requirements, increased the note related to the reference working temperature and the purchaser (this department

Chapter 1);

--- Add and delete related terms, definitions, symbols and abbreviations and their contents, and move them into GB/T 13663.1-2017 (Chapter 3 of this part);

--- Removed PE63 grade materials and requirements; removed the basic performance requirements of materials, adjusted to GB/T 13663.1-2017

Expression (Chapter 4 of this Part);

---Modified the classification and naming related content of polyethylene compounding, deleted the PE63 grade material, and increased the mixing time of 80 °C.

The static hydrostatic strength curve is not allowed to have an inflection point before 5000h ($t < 5000h$) (this part 4.2)

--- Added requirements for other materials (this section 4.3.4);

--- Increased reclaimed material requirements (this section 4.4);

---Modified product classification requirements (Chapter 5 of this section);

--- Increased the requirements for the construction of welded pipe fittings; blue polyethylene pipe fittings should avoid direct exposure to ultraviolet light and be modified to blue

Color fittings are only suitable for dark coatings (section 6.2);

--- Added requirements for pipe design, factory prefabricated joints and electrical protection (this section 6.3);

--- Revised the range of resistance values of the electrofusion tube. nominal value $x (1 \pm 10\%)$ (this section 6.4);

--- Increased the size range (this section 6.5.1, 6.5.2 and 6.5.7);

--- Removed the average outer diameter grade A and special tubular length requirements for the pipe socket end dimensions (this section 6.5.1);

--- Increased the average inner diameter of the fused socket end (this part 6.5.2.1);

- Increased the requirements for the construction of welded pipe fittings (this section 6.5.5);
 - Increased the requirements for mechanical connection pipe fittings (this section 6.5.6);
 - Mechanical and physical properties of pipe fittings removed the relevant requirements for pipe fittings made of PE63 material; hydrostatic strength (20 ° C, 100 h)
- Test parameters. PE100 ring stress is changed from 12.4MPa to 12.0MPa; the welding strength requirement of fused saddle pipe fittings is increased;
- Increased the requirement of ash $\leq 0.1\%$; adjust the oxidation induction time of the pipe from "200 °C, $\geq 20\text{min}$ " to "210°C, $\geq 20\text{min}$ " (this section 6.6 and 6.7);
- Revised the relevant requirements of the test method (Chapter 7 of this part);
 - Increased welding strength arbitration method for 90mm~225mm fused socket fittings (this section 7.6);
 - Increased ash test method requirements (see 7.16 in this section);
 - Modified the batch batch and grouping requirements (section 8.2);
 - Added list of inspection items and hygiene inspection requirements (in Section 8.3.1);
 - In the sampling plan, the acceptance quality limit (AQL) is adjusted from 6.5 to 4.0 (this part 8.3.2);
 - Type inspection increases the requirement for type inspection every three years (8.4.4 of this section);
 - The mark content of the $\text{dn} \geq 280\text{mm}$ pipe fittings has been deleted, and the mixed batch number and production batch number have been added (this part 9.2);
 - Increased packaging requirements (this section 10.1);
 - Added the normative appendix "Construction Welded Pipe Fittings" (Appendix C to this section);
 - Deleted the typical C-type connector (Appendix D in this section) in the informative appendix "Schematic terminal diagram of electrofusion fittings";
 - Added the normative appendix "Hot-melt socket fittings" (Appendix E of this section);
 - Added the normative appendix "Test Method for Welding Strength of Fused Saddle Pipe Fittings" (Appendix F of this section).

This section uses the redrafting method to modify the use of ISO 4427-3:2007 "plastic pipe system for water supply polyethylene (PE) pipe and pipe

Part 3. Pipe fittings.

This section has more structural adjustments than ISO 4427-3:2007. The section numbers in this section are listed in Appendix A.

A comparison list of chapter numbers for ISO 4427-3:2007.

This section has technical differences compared to ISO 4427-3:2007. The terms involved in these differences have been passed through the margins on their outer margins

The vertical single line (-) is marked. A list of relevant technical differences and their causes is given in Appendix B.

1 Scope

This part of GB/T 13663 stipulates the use of polyethylene (PE) compound as raw material, injection molding or other forms of water for the use of polyethylene

Terms and definitions, symbols, abbreviations, materials, product classifications, requirements, test methods, inspection rules, signs of olefin fittings (hereinafter referred to as "pipe fittings")

And packaging, transportation, storage.

This part, together with other parts of GB/T 13663, applies to water temperatures not exceeding 40 °C, maximum working pressure (MOP) is not greater than

2.0 MPa, polyethylene pipe system and its components for general purpose pressure water delivery and drinking water distribution.

Note 1. The reference operating temperature is 20 °C. For the pressure reduction factor between 0 °C and 40 °C, refer to Appendix C of GB/T 13663.1-2017.

Note 2. It is the responsibility of the purchaser to properly select the products specified in this section according to their specific application requirements, in conjunction with relevant regulations, standards or specifications.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 2828.1. Sampling and sampling procedures - Part 1 . Batch-to-batch sampling plan searched by the acceptance quality limit (AQL)

(GB/T 2828.1-2012, ISO 2859-1:1999, IDT)