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

GB/T 29168.2-2024

Replacing GB/T 29168.2-2012

**Petroleum and natural gas industries - Bends, fittings and
flanges for pipeline transportation systems - Part 2: Fittings**

石油天然气工业 管道输送系统用弯管、管件和法兰 第2部分：管件

(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 2 of GB/T 29168 "Pipe elbows, fittings and flanges for pipeline transportation systems in the petroleum and natural gas industry".

GB/T 29168 has published the following parts.

- Part 1: Induction heating pipe bending;
- Part 2: Pipe fittings;
- Part 3: Flanges;
- Part 4: Cold-bent pipes.

This document replaces GB/T 29168.2-2012 "Induction heating elbows, pipe fittings and pipe methods for pipeline transportation systems in the petroleum and natural gas industry" Compared with GB/T 29168.2-2012, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added chemical composition index requirements for pipe fittings for low temperature environments (see 9.4);
- b) Added protection requirements for pipe fittings (see Chapter 11);
- c) Added packaging and transportation requirements for pipe fittings (see Chapter 12).

This document is modified to adopt ISO 15590-2:2021 "Factory elbows, fittings and flanges for pipeline transportation systems in the petroleum and natural gas industry" Part 2: Pipe fittings.

Compared with ISO 15590-2:2021, this document has many structural adjustments. The structural number changes between the two documents are listed below.

See Appendix A for the table.

This document has many technical differences compared to ISO 15590-2:2021.

A list of these technical differences and their reasons is given in Appendix B.

The following editorial changes were made to this document.

- In order to coordinate with the existing standards, the name of the standard is changed to "Bends, pipe fittings and pipes for pipeline transportation systems in the petroleum and natural gas industry Part 2: Pipe fittings;
- Deleted the note of 7.1;
- Changed the original Figures 1, 2 and 3 to Figures 1a), b) and c);
- Deleted the note of 9.6.3.1;
- Added the note to C.1;
- Added Appendix E (informative) "Recommended wall thickness for DN1000 and DN1200

tee design verification test";

--- Added Appendix F (informative) "Sleeve connection";

--- Added Appendix H (informative) "Steel Grade Comparison";

--- Added Appendix I (informative) "Pipe fittings dimensions";

--- Added Appendix J (informative) "Test method for geometric dimensions of tee joints".

Introduction

Bends, pipe fittings and flanges are important and indispensable structural parts for the construction of long-distance pipelines and valve chambers at stations.

The procurement and application of pipes for industrial pipeline transportation systems have been formulated for induction heating bends, pipe fittings, this document is based on ISO 15590-2, and refers to relevant domestic and foreign standards.

The research results and practical experience of basic research and technical standards for pipe fittings used in oil and gas pipeline construction.

GB/T 29168 is planned to consist of four parts, including production process, geometric dimensions and inspection requirements.

--- Part 1: Induction heating pipe bending. The purpose is to specify the application of carbon steel or low alloy steel seamless steel pipe, high frequency welded pipe and straight seam buried pipe Technical requirements for the design, manufacture and inspection of induction heating bends made from arc-welded steel pipe as parent pipe.

--- Part 2: Pipe fittings. The purpose is to specify the pipe fittings applicable to the use of carbon steel or low alloy steel plates, seamless steel pipes and welded steel pipes.

Technical requirements for the manufacture and inspection of welded pipe fittings.

--- Part 3: Flanges. The purpose is to specify neck welding flanges and blind flanges suitable for carbon steel or low alloy steel forgings, as well as anchoring Technical requirements for the manufacture and inspection of flanges, slip-on flanges and orifice flanges.

--- Part 4: Cold-bent pipes. The purpose is to specify the radius of application of low-carbon low-alloy seamless and welded steel pipes not less than 5OD, Technical requirements for the design, manufacture and inspection of cold-bent pipe produced by cold bending in factories and on site.

During the construction of pipeline engineering, in order to meet the needs of medium diversion, and relief, and improve the main steel pipe in the pipeline system under harsh loads, Due to the abnormal external loads, a large number of pipeline structures are often required in the construction of pipeline laying, valve rooms, stations and booster stations.