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

GB/T 29165.4-2023

Replacing GB/T 29165.4-2015

**Petroleum and natural gas industries - Glass-reinforced plastics
(GRP) piping - Part 4: Fabrication, installation and operation**

石油天然气工业 玻璃纤维增强塑料管 第4部分：装配、安装与运行
(English Translation)

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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 4 of GB/T 29165 "Glass fiber reinforced plastic pipes for the oil and gas industry": GB/T 29165 has been the following sections were published:

---Part 1: Vocabulary, symbols, applications and materials;

---Part 2: Assessment and Manufacturing;

---Part 3: System Design;

---Part 4: Assembly, installation and operation:

This document replaces GB/T 29165.4-2015 "Glass fiber reinforced plastic pipes for the oil and gas industry - Part 4: Assembly and installation and Operation", compared with GB/T 29165.4-2015, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) Changed the content of delivery, inspection and documentation of pipeline components (see 4.1, 5:1 of the:2015 version);

b) Due to the intersection of diameter ranges in Table 2 in the original text of ISO 14692-4:2017, according to the glass fiber reinforced plastics in the Chinese standard the

specification of material pipe (glass fiber reinforced plastic pipe) is changed from "300~1200" to "350~1200", and "1200~4000" is changed to "1300~ 4000":

- c) The structure and content of the installation method have been changed, and the application of GRP pipes on the ground has been described in detail (see 4.5,;2015 version) 5:5);
- d) The content of the system test has been changed, and the pressure test is divided into two parts: strength test and tightness test (see 4.6,;2015 edition of 5:6);
- e) Delete the general description of defects that may occur during assembly, loading, unloading and installation in Table 4 (see 5.7 of the:2015 edition);
- f) Changed the content of the pipe string repair operation, the chapter name was changed to "Maintenance and Repair", and the two parts of operator files and disposal were deleted Content (see Chapter 5, Chapter 6 of the:2015 edition);
- g) The content of the qualification assessment of pipeline installers, supervisors and inspectors in the appendix has been changed, and the qualifications of pipeline bonders, pipe string fitters, and pipe stringers have been added:

The training objectives for road installers, supervisors and inspectors are specified in detail, including the certification process, personnel requirements, training and examination content, etc: (see attachment Record C, Appendix D of the:2015 edition);

- h) Added Appendix E "Conductivity and Static Dissipation Performance" (see Appendix E);
- i) Appendix F "Health and Safety" has been deleted (see Appendix F in the:2015 version):

This document has been modified to adopt ISO 14692-4:2017 "Glass fiber reinforced plastic pipes for the oil and gas industry - Part 4: Assembly and installation Installation and Operation:

Compared with ISO 14692-4:2017, this document has made the following structural adjustments:

- a) In 4:5:1, add the bar number "4:5:1:1~4:5:1:3";
- b) In 4:5:8, add the bar number "4:5:8:1~4:5:8:3";
- c) In 4:5:11, add the bar numbers "4:5:11:1, 4:5:11:2";
- d) In 4:6:2:3, add the bar number and name "4:6:2:3:1 General Requirements", and the subsequent bar numbers will be postponed;
- e) In Appendix C, add the bar numbers "C:2:2:10:1~C:2:2:10:11" and "C:2:4:1:1~C:2:4:1:3";
- f) In Appendix D, add bar numbers "D:5:1, D:5:2";
- g) In Appendix E, add the bar number and name "E:1 General Principles, E:2 Conductive

Methods, E:3 Conductive Coating";

h) In Appendix F, add bar numbers "F:3:1, F:3:2" and "F:4:2:1~F:4:2:4":

The technical differences between this document and ISO 14692-4:2017 and their reasons are as follows:

---Because there is no institution in my country that is capable of carrying out the certification work specified in Appendix C, Appendix C is changed from a normative appendix to an informational one:

appendix:

The following editorial changes have been made to this document:

- a) A flow chart has been added to the introduction, and the numbers of subsequent figures have been postponed;
- b) In 4:5:5, the informative reference to AWWAM45:2013 was deleted;
- c) In 4:6:2, modify "integrity test" to "strength test" and modify "leakage test" to "tightness test";
- d) In Appendix C, the table number and title "Table C:1 Explanation of Responsibilities of Certification Parties" are added to the first table, and others the table numbers are extended in sequence;
- e) In Appendix C, the "informative" part of Table C:12 is deleted:

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

Glass fiber reinforced plastic pipe is a composite made of glass fiber reinforced unsaturated polyester, epoxy resin and phenolic resin as matrix materials:

Plastic pipes are widely used in the oil and gas industry: In order to standardize the design, manufacturing, evaluation and operation of glass fiber reinforced plastic pipes line, and formulated a series of technical documents for glass fiber reinforced plastic pipes for the oil and gas industry: This document is intended to provide the oil and gas industry with Recognized standards for basic terminology, materials, evaluation, manufacture, design, assembly, installation and operation of fiberglass reinforced plastic pipes: According to glass Characteristics of each stage of the full service life of glass fiber reinforced plastic pipes, such as application and materials, evaluation and manufacturing, system design, assembly, installation and operation OK, GB/T 29165 "Glass Fiber Reinforced Plastic Pipes for the Oil and Gas Industry" is planned to consist of four parts:

---Part 1: Vocabulary, symbols, applications and materials: The purpose is to stipulate the